

# Risk-Informed Development: Barriers and enabling factors in development cooperation in Georgia

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Risk-informed development, Georgia, health sector, integration, climate change adaptation, disaster risk management, sustainable development, Sendai Framework for Disaster Risk Reduction, Paris Agreement, Sustainable Development Goals, resilience, risk information, risk management, development cooperation

## Abstract

Risk-informed development aims to include complex risks into all levels and phases of decision-making. Going beyond the integration of climate change adaptation and disaster risk management, risk-informed development emerged after the 2015 global agreements (Sendai Framework for Disaster Risk Reduction, Paris Agreement and the Sustainable Development Goals) and represents a rationale to consider multiple disaster and climate risks simultaneously in societal development. The concept, however, has gained little attention academically and there are few scientific publications contributing to the discourse. The purpose of this degree project is to contribute towards filling this knowledge gap in terms of risk-informed development. Specifically, barriers and enabling factors to integrate risk-informed development into development cooperation projects are appraised using the example of the health sector in Georgia. For this objective, a qualitative case study approach including explorative, semi-structured interviews with relevant key informants was chosen. The interviews revealed that the term risk-informed development is not yet well known and applied in the context of Georgia. Moreover, several barriers and enabling factors emerged that were clustered into six main categories with several subcategories: Terminology, Knowledge and Capacities, Coordination and Communication, Governance and Policies, Finance as well as Perception and Prioritisation. The factors are interlinked and point towards systemic issues preventing more risk-informed development efforts in Georgia. Therefore, a holistic and transformative approach to integrating risk-informed development is required that stretches across all spheres and levels of society.

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## SUMMARY

Anthropogenic climate change is expected to affect human life and well-being through a variety of consequences (IPCC, 2022:8,10; IPCC, 2018:18,24) with the increase in frequency, magnitude and length of extreme weather events being one example (Dubbeling & de Zeeuw, 2011:442; McBean & Ajibade, 2009:181). On the one hand, the impacts of climate change and changing risk environments are threatening development progress (IPCC, 2022:10; Flood Resilience, 2021; UNDP, 2020a:8). On the other hand, non-resilient and non-sustainable development can lead to social, political, economic, and environmental conditions that increase vulnerability to the impacts of different risks (Benner et al., 2022:7; Birkmann et al., 2022:21; IPCC, 2022:12; Opitz-Stapleton et al., 2019:11). Risk-informed development aims to include complex risks into all levels and phases of decision-making. The concept emerged after the 2015 global agreements (the Sendai Framework for Disaster Risk Reduction, the Paris Agreement and the Sustainable Development Goals, cf. [appendix 8](#)) and represents a rationale to consider multiple disaster and climate risks simultaneously in societal development. As of now, the concept has gained little attention academically.

The purpose of this degree project is to contribute towards filling a knowledge gap in terms of risk-informed development. Barriers and enabling factors to integrate risk-informed development into development cooperation projects are explored by taking the example of the Georgian health sector. A qualitative case study approach was chosen and explorative, semi-structured interviews with relevant key informants were conducted. Moreover, literature was scoped to investigate the framing of risk-informed development in the current discourse.

Although no commonly used or widely accepted definition of risk-informed development exists as of now, the scoping of literature showed that the term is closely linked to an understanding of risks as complex and interlinked, emphasising the reciprocal relationship between risks and development influencing each other.

The interviews showed that the term risk-informed development is neither well known nor applied in the context of Georgia. Throughout the analysis, different barriers and enabling factors emerged that were clustered into six main categories with several subcategories: Terminology, Knowledge and Capacities, Coordination and Communication, Governance and Policies, Finance as well as Perception and Prioritisation. These clusters are interlinked and suggest that systemic issues prevent more risk-informed development efforts in Georgia. A holistic and transformative approach that stretches across all spheres and levels of society is required to integrating risk-informed development. Additionally, growth-centred development thinking has been identified as a barrier to integrating risk-informed development, both into the

Georgian health sector as well as in general. Further research should be conducted with regards to the health sector in Georgia, ideally based on the expertise of stakeholders from within the Georgian context whose limited participation in the interviews represents a major limitation to the findings. Based on the triangulation, the findings from the case study indicate a certain level of generalisability that should be further investigated. On a more general level, future research should ideally cover even broader perspectives, e.g. by including economic and financial experts. Furthermore, best practices and more insights concerning the implementation of risk-informed development have yet to be developed to allow for better generalisation of the findings.

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## LIST OF ABBREVIATIONS

ADB	Asian Development Bank
ADPC	Asian Disaster Preparedness Center
AGoG	Administration of the Government of Georgia
AGoG's PPGCD	Administration of the Government of Georgia, Policy Planning and Government Coordination Department
AWC	Arab Water Council
BMZ	<i>Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung</i> , German Federal Ministry of Economic Cooperation and Development of Germany
CCA	Climate Change Adaptation
CEDRIG	Climate, Environment and Disaster Risk Reduction Integration Guidance (by the SDC)
CENN	Caucasus Environmental NGO Network
CRN	Climate Risk Nexus Initiative
DCU	Donor Coordination Unit (part of the Administration of the Government of Georgia)
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EEAS	European External Action Service, Delegation of the European Union to Georgia
GCF	Green Climate Fund
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GIDRM	Global Initiative on Disaster Risk Management
GIZ	<i>Gesellschaft für internationale Zusammenarbeit</i> , German Corporation for International Cooperation
GNDR	Global Network of Civil Society Organisations for Disaster Reduction
GoG	Government of Georgia
GRAF	Global Risk Assessment Framework (by UNDRR)
ICG	Interagency Council of Georgia
IDP	Internally Displaced Person
IPCC	Intergovernmental Panel on Climate Change
IRDR	Integrated Research on Disaster Risk
IRGC	International Risk Governance Council
ISC	International Science Council
ISO	International Organization for Standardization

MENRP	Georgian Ministry of Environment and Natural Resources Protection (now: MEPA, cf. below)
MEPA	Georgian Ministry of Environmental Protection and Agriculture
MoH	Ministry of Internally Displaced Persons From the Occupied Territories, Labour, Health and Social Affairs of Georgia
MRDI	Georgian Ministry of Regional Development and Infrastructure
NATO	North Atlantic Treaty Organization
NCDC	Georgian National Centre for Disease Control and Public Health
NDCs	Nationally Determined Contributions
NEA	Georgian National Environmental Agency
NHPS	National Health Protection Strategy 2022-2030 (Georgia)
ODI	Overseas Development Institute
PHC	Public Health Care
RID	Risk-informed Development
SDC	Swiss Agency for Development and Cooperation
SFDRR	Sendai Framework for Disaster Risk Reduction 2015-2030
SIDA	Swedish International Development Agency
SSDG	Georgian Secretariat of the SDGs
UHCP	Universal Health Coverage Programme
UHI	Urban Heat Island-effect
UNDP	United Nations Development Program
UNDRR	United Nations Office for Disaster Risk Reduction
UN ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
USAID	United States Agency for International Development
WCED	World Commission on Environment and Development
WHO	World Health Organisation

# 1. INTRODUCTION

Anthropogenic climate change is expected to affect human life and well-being through a variety of consequences (IPCC, 2022:8,10; IPCC, 2018:18,24) with the increase in frequency, magnitude and length of extreme weather events being one example (Dubbeling & de Zeeuw, 2011:442; McBean & Ajibade, 2009:181). On the one hand, the impacts of climate change and changing risk environments are threatening development progress (IPCC, 2022:10; Flood Resilience, 2021; UNDP, 2020a:8). On the other hand, non-resilient and non-sustainable development can lead to social, political, economic, and environmental conditions that increase vulnerability to the impacts of different risks (Bezner et al., 2022:7; Birkmann et al., 2022:21; IPCC, 2022:12; Opitz-Stapleton et al., 2019:11). Thus, the need to integrate climate change adaptation (CCA), disaster risk management (DRM) and sustainable development efforts has been identified (UNDP, 2020a:8; Opitz-Stapleton et al., 2019:12-13; Mitchell & van Aalst, 2008:5-6). The major common denominator that CCA, DRM and development cooperation have in common is their objective to reduce vulnerability and enhance resilience (Flood Resilience, 2021; UNDP, 2020a:10).

Risk-informed development (RID) is an approach that aims to include complex risks into all levels and phases of decision-making in development (Opitz & Stapleton, 2019:9). Going beyond the integration of CCA and DRM, RID emerges after the 2015 global agreements and represents a more recent rationale to consider multiple disaster and climate risks simultaneously in societal development (Opitz-Stapleton et al., 2019:22). Because of this embeddedness of RID in the broader context of DRM, CCA and development, [chapter 3.1](#) clarifies relevant concepts to create a common understanding.

The concept of RID, however, has gained little attention academically and there are few scientific publications contributing to the discourse. This will be further elaborated in [section 3.2](#) dealing with the framing of RID in the current discourse. To fill this research gap, more insights into the practical perspectives are needed, including the exploration of barriers and enabling factors concerning the mainstreaming of RID into the development cooperation sector.

## 1.1 Purpose and research questions

The purpose of this research project is to contribute towards filling a knowledge gap in terms of barriers and enabling factors to integrate RID into development cooperation projects. The health sector in Georgia represents an interesting and timely case study. The country has been chosen because of the variety of climate change induced risks it is confronted with (WB &

ADB, 2021) as well as due to its political background<sup>1</sup> (WHO Regional Office for Europe, 2021:2; Bertelsmann Stiftung, 2018:17,30). The research project focuses on the health sector for several reasons. Firstly, human life and health are considered important values from a societal perspective. Thus, healthcare services and health infrastructure are considered critical assets for the functioning of society (Maia et al. 2020:144). Secondly, climate change and a changing risk landscape represent serious challenges to all sectors, including the health sector (CDC, 2021). The latest IPCC Assessment Report, noted that adaptation gaps should be proactively closed, especially concerning disaster risks and human health and well-being (IPCC, 2022:3). The need to adapt to and deal with a changing risk environment is critical for future functioning of the health sector and thus, represents an important field of study. Lastly, due to the ongoing COVID-19 pandemic the need for a multi-hazard approach for simultaneously occurring and interrelated hazards has been acknowledged by a broader public (Cissé et al., 2022:3,7,33-35; IPCC, 2022:3; Ranger et al., 2021:1376; Quigley et al., 2020; Rogers et al., 2020), representing an entry point for RID.

Specifically, the research question guiding this project is: “What are the barriers and enabling factors regarding the integration risk-informed development in ongoing development cooperation projects in the health sector in Georgia?”

For a structured approach, the following sub-questions will guide the research:

- (i) How is risk-informed development defined and framed in the current discourse?
- (ii) How do key stakeholders in the health sector in Georgia interpret and apply risk-informed development?
- (iii) What are the problems arising from differences in definitions and framing in a development context?
- (iv) What are the barriers and enabling factors regarding risk-informed development in Georgia?

After a presentation of the methodology applied throughout the degree project, limitations and ethical considerations are introduced. Thereafter, key concepts are defined to create a common understanding of the terminology used. To answer the first sub-research question, RID as framed in the current discourse is presented based on a scoping of the literature. Before presenting and discussing the findings of the semi-structured, qualitative interviews, the context

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<sup>1</sup> For detailed information concerning Georgia and its political context, cf. [chapter 4](#) and [appendix 12](#).

of the case study is shortly introduced, followed by concluding remarks and an outlook into potential areas of future research.

The degree project follows a case study approach by focusing on the health sector and the country of Georgia. However, because of the generic approach to the literature scoping, the choice of research questions and thorough triangulation of the findings from the case study, limited generalisations are brought forward.

Therefore, taking a wider perspective, this study will:

- (i) provide a better understanding of what role RID could play in development cooperation;
- (ii) give a voice to development cooperation practitioners with regards to their needs in RID; and
- (iii) contribute to the academic discourse on integrating CCA and DRR concerning RID as one specific approach.

## 2. METHODOLOGY

This chapter describes the researcher's methodological choices as well as the research strategy applied. Moreover, the literature scoping and the case study approach including data collection and analysis are presented. Lastly, the main limitations and ethical considerations are brought forward.

### 2.1 Research Strategy

In line with complexity thinking and a constructivist perspective<sup>2</sup>, the degree project adopted a qualitative case study approach by limiting the research to the health sector in Georgia as a contemporary, bounded system (one case-approach) involving various sources of information (interviews, publications and policy documents) as recommended by Creswell (2013:97). The project applied an inductive strategy to describe barriers and enabling factors to integrating RID in development cooperation in Georgia. The aim was to establish “limited generalisations” (Blaikie, 2010:83; Yin, 2003:32-33) concerning barriers and enabling factors for RID in the country of Georgia. The resulting analytical generalisations are limited because of the pre-defined geographic and thematic scope (cf. Creswell, 2013:99). The degree project was linked to the German Corporation for International Cooperation's (GIZ's) Global Initiative for Disaster Risk Management (GIDRM) in the form of an external consultancy held by the researcher. Further information concerning the GIDRM can be found in [appendix 1](#).

While the first sub-research question was answered theoretically via literature scoping (cf. [chapter 2.2](#)), the other three sub-research questions were approached empirically (cf. [chapter 2.3](#)) and via triangulation.

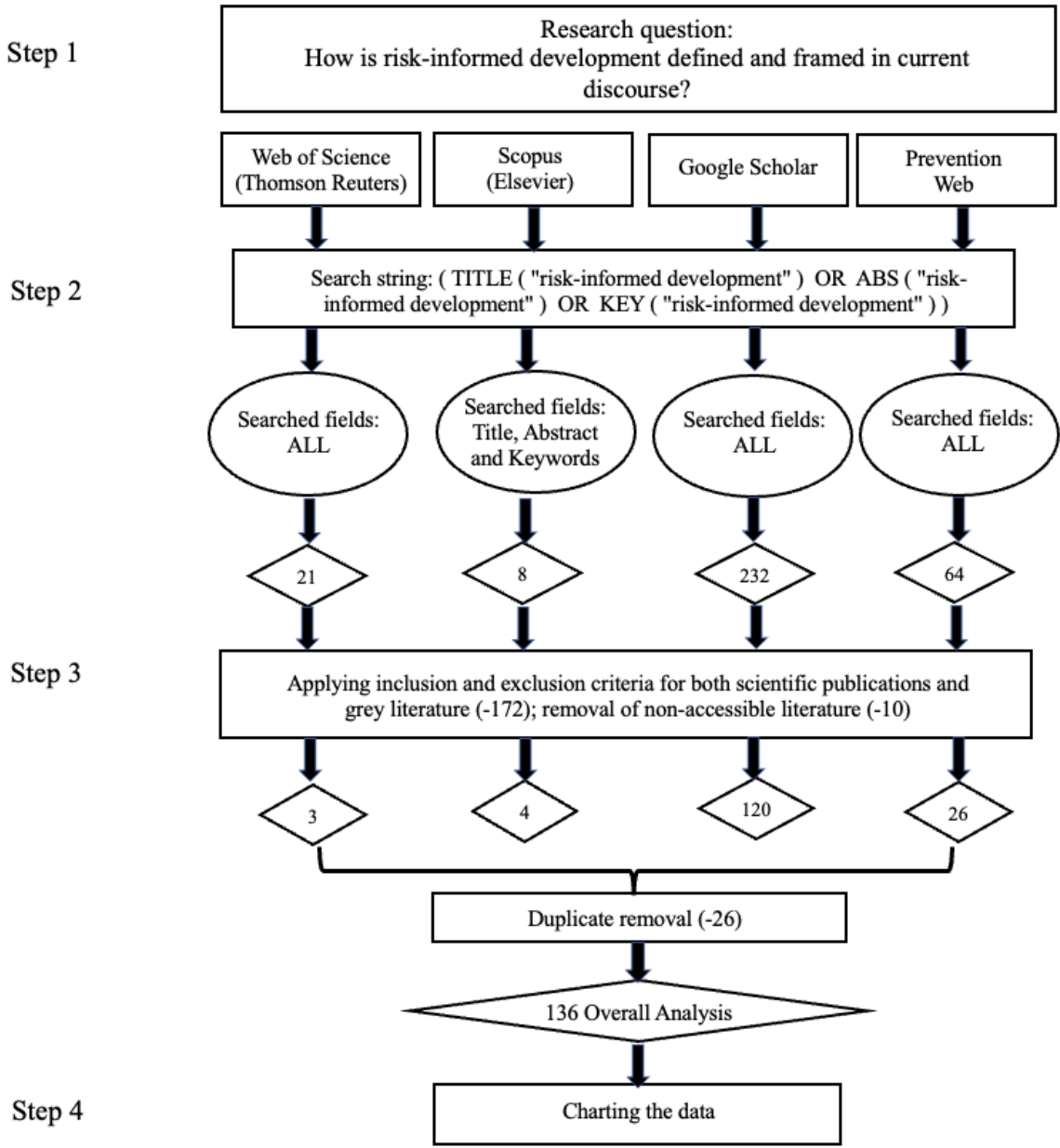
### 2.2 Literature scoping

There is no universal definition or purpose of a scoping study (Levac et al., 2010:1). Generally, the aim is to map the main concepts as well as sources and types of evidence of a specific research area (Arksey and O'Malley, 2005:194). Here, the purpose was to identify and locate the relevant literature to answer the first sub-research question: “How is risk-informed development defined and framed in the current discourse?”

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<sup>2</sup> A constructivist perspective means that, according to the researcher, there is no single meaning of reality (Creswell, 2013:24). Instead, reality is perceived differently depending on the actor's perspective, experience and their different socio-cultural backgrounds. Complexity thinking relates to an understanding of our world being globally interconnected, driven by non-linear and complex relationships (Heylighen et al., 2007:1).

Initially, quick scan searches were conducted providing the researcher with a broadened understanding of the material and terminology (cf. Beerens & Tehler, 2016:414). The subsequent in-depth scoping of the literature was guided by a scoping study undertaken by Beerens and Tehler (2016). They applied a six-step framework based on a study by Arksey and O'Malley including the following steps: (i) identifying the research question, (ii) identifying relevant studies, (iii) study selection, (iv) charting the data, (v) collating, summarising and reporting the results and (vi) optional consultation with stakeholders (Arksey & O'Malley, 2005:8-9). This framework was used for the scoping and adapted where necessary to fit the research purpose of this study, cf. [figure 1](#).



1 Framework for the scoping of literature, own depiction

Web of Science, Scopus, Google Scholar and PreventionWeb (as the primary web platform for the disaster risk reduction community, cf. European Commission, n.d.) were searched. Furthermore, grey literature was included because of the recency of RID as a concept. RID has been discussed mostly in grey literature and not yet gained much scientific attention. Thus, grey literature represented an important source to fill existing gaps in academic literature and to answer the first sub-research question. However, there are important downsides to including grey literature, e.g. the searching efficiency and replicability and potential biases of the information found (cf. Adams et al., 2016:7-8). To ensure rigour and credibility of the grey literature, a number of inclusion and exclusion criteria were developed and applied. This can be seen in step 3; i.e., study selection (cf. [figure 2](#) below). More details concerning the steps and the rationale can be found in [appendix 2](#). The results of the scoping are depicted below in [section 3.2](#).

In case there was no clear answer to whether a criterion applied, the study or publication in question was considered for further analysis. The abstracts of all identified studies were read. Where not applicable (e.g. for grey literature), a summary and/or introduction and conclusion was read. Then, the relevant literature was selected based on the criteria listed above. Duplicates were removed, totalling 26 studies. The documents that were not accessible due to their absence through interlibrary loan services were also removed (a total of ten studies). The application of step 3 resulted in a total of 136 studies that were analysed in depth in step 3.

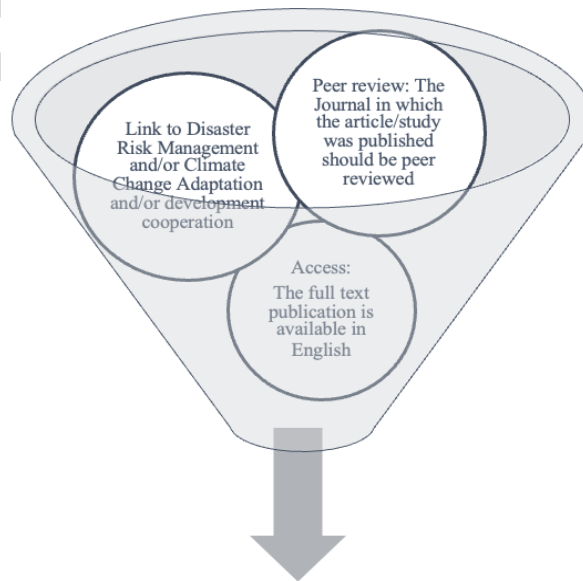


## Inclusion and exclusion criteria for academic literature

### Exclusion criteria

- Non-fulfilment of one or more of the inclusion criteria
- No framing and/or definition of risk-informed development included

### Inclusion criteria

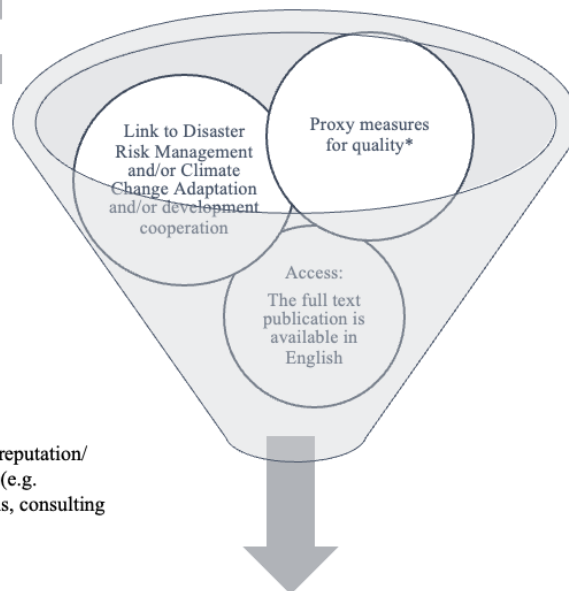


## Inclusion and exclusion criteria for grey literature

### Exclusion criteria

- Non-fulfilment of one or more of the inclusion criteria
- No framing and/or definition of risk-informed development included

### Inclusion criteria



### \*Proxy measures for quality

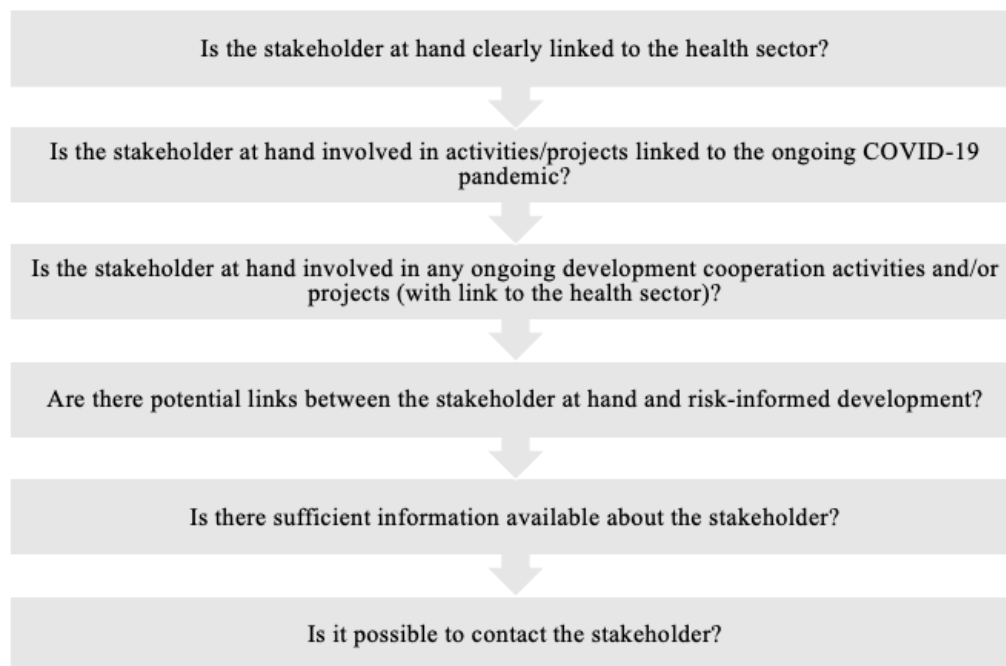
- The authors are stated (not anonymous)
- The study/finding uses academic referencing
- The reference comes from a source with international reputation/authority and with technical knowledge as a yardstick (e.g. international organisations, governmental organisations, consulting companies)

2 Inclusion and exclusion criteria applied to academic literature and grey literature, own depiction

## 2.3 Empirical investigation and Case Study Approach

### 2.3.1 Development cooperation stakeholders in the health sector in Georgia

A case study is an approach in qualitative research in the context of which “a real-life, contemporary bounded system (a case) or multiple bounded systems (cases)” are explored over time making use of various sources of information (Creswell, 2013:97). For this study, a literature search was conducted to get an overview of relevant development cooperation stakeholders and projects (being currently implemented) with links to the health sector in Georgia. The maximum variation sampling strategy was criterion-based and purposeful, aiming to select interviewees with different perspectives rather than providing a comprehensive overview (cf. Creswell, 2013:153,156,158; Gerson & Damaske, 2021:47). A total of 68 stakeholder organisations were identified and subsequently listed, including their roles, projects and activities, and type and contact information. Then, a criterion-based pre-selection was done, categorising the stakeholder organisations by their relevance into three groups as highly relevant, potentially relevant or not relevant. The criteria applied are visualised below in [figure 3](#).



3 Criteria for pre-selecting the identified stakeholders, own depiction

While the first three criteria (cf. [figure 3](#)) were applied to choose knowledgeable interview partners (following a broader understanding of “expert knowledge”, cf. Döringer, 2016:266), the two last criteria were applied for practical reasons. After consultation with the Georgian team of the GIDRM, further key informants were identified, resulting in a total of 88 individuals

from over 60 selected stakeholder organisations being contacted with a personalised email (cf. [appendix 3](#)). Of these, 17 individuals from 13 organisations agreed to participate in an interview. The group of interviewees were drawn from public and private sector organisations, both national and international, from different thematic backgrounds including climate change, environmental protection, DRM and health. The sample therefore fulfilled the aspired maximum variability criteria. However, the reasons for a low return from health sector – related stakeholders are unknown and were not expressed by those who declined.

### ***2.3.2 Data collection and semi-structured interviews***

Each contacted participant was provided with a project description introducing the research project (including a short description of the purpose, main methodology and general information, cf. [appendix 4](#)). Moreover, a participant information sheet was provided together with the consent-to-participate form (cf. [appendix 5](#)). The general version of the interview guide can be found in [appendix 6](#), followed by the rationale for the guide in [appendix 7](#). In addition to this basic interview guide, stakeholder-specific questions were included in each interview. Before going into the roll-out of the interviews, the interview guide was piloted and revised accordingly (Creswell, 2013:165).

Semi-structured interviews are characterised by their application of a set of prepared questions, that are handled flexibly (Rubin & Rubin 2012:4; Kvale, 2007:16). After reaching out to potential interviewees, a total of 17 individuals from 13 organisations were interviewed. 13 interviews took place in person, and four online. Given the circumstances and time constraints, it was not possible to conduct all interviews under identical circumstances - some were conducted in-person (with one, two or three interviewee(s)), others online (always one interviewee). The interviews took between 40 and 90 mins. They were conducted in English with three interviews being partly translated into Georgian to overcome potential language barriers.

### ***2.3.3 Data analysis***

Where applicable, the interviews were recorded with the participants' permission. The researcher further took notes during the interviews as well as directly afterwards for a pre-structuring process (cf. Maxwell, 2012). The handling of personal data was in line with the Lund University processing which applies the General Data Protection Regulation (EU GPDR, cf. LU, 2021). The recorded interviews and all written notes were stored on a computer in a password protected document and separately from personalised data to guarantee participants' anonymity (Creswell, 2013:175; SRA, 2003:38). Subsequently, the interviews were transcribed

(Wieringa, 2014:135). The software NVivo was used for the storage of the anonymised data, coding, and data analysis.

The coding procedure and data analysis were guided by Mayring's qualitative content analysis: coding categories were developed and defined inductively with focus on the research questions (RQ 2-4), then, after reviewing about 40% of the material, the categories were iteratively revised and adapted to the material and eventually, the results were interpreted (Mayring, 2020:3,6; Assaroudi et al., 2018:47; Mayring, 2000:4). The level of analysis gradually shifted from codes to broader categories by connecting different codes, extending the level of abstraction or "meaning making" (Galetta, 2013:126) and facilitating comparison within and between the identified categories (cf. Maxwell, 2012:237). The analysis was complemented by a triangulation of policy documents and academic publications to enhance the validity and reliability of the findings (Kvale, 2007:125). For the third sub-research question, the findings from the literature review were analysed in NVivo following the same procedure for a structured comparison.

## **2.4 Limitations and ethical considerations**

Generalisability is a major limitation of a case study approach. However, the approach chosen best fits the purpose of the project, i.e., to appraise barriers and enabling factors for RID in the context of Georgia. Further, the project does not aim to be representative of all cases with its focus on one sector in one country. The aim, i.e., to generate rich and nuanced data and subsequently derive lessons and principles that might be applicable for further testing in other cases, was achieved.

Given the limited number of publications concerning the topic of this degree project, it was difficult to find literature to compare the findings of this study with. Thus, grey literature was used to complement academic publications. This knowledge gap underlines the need to conduct scientific research in this field as pointed out above (cf. [chapter1](#)).

The cooperation with the GIZ mitigated potentially limited access to various key informants in the health sector and development cooperation in Georgia which depicts a typical challenge to case studies (Creswell, 2013:151). However, it remained a challenge to find interviewees from the health sector itself. Whether this was due to a lack of interest or linked to the ongoing COVID-19 pandemic is a matter of conjecture. Despite additional document analyses, the explanatory power with regards to the health sector therefore remains limited and future research is required.

The project was linked to an independent consultancy conducted by the author for the GIZ. The researcher was new to the Georgian context while holding a position as an external consultant. As a white, European researcher there may be a risk of being biased by a Eurocentric perspective. The author aimed to mitigate this bias by active reflection rather than attempted neutrality (cf. Blaikie, 2010:53; Rubin & Rubin, 2005:25-26) as well as by continuous exchange and evaluation with the university supervisor, the German and the Georgian GIDRM staff. Moreover, the double function as both researcher and consultant could potentially lead to power imbalance between the interviewer and interviewees as well as a conflict of interest. However, no commitment to specific methods or results was made beforehand and the interviews were conducted from a scientific perspective. That was agreed on beforehand and communicated (Creswell, 2013:61; SRA, 2003:13,18-19). Thus, the research was conducted independently.

All interviewees participated on a voluntary basis and were able to withdraw at any time (SRA, 2003:14,27). Their informed consent was obtained (Creswell, 2013:174; SRA, 2003:14). Moreover, their interests and their anonymity are protected. The data were and will be handled confidentially (Creswell, 2013:174; SRA, 2003:38-39). All of this was communicated transparently to the participants beforehand. Biases such as the social desirability bias (enticing people to answer positively to questions, cf. Chung & Monroe, 2003:291) are known to occur, especially concerning sensitive topics. These were mitigated through thorough preparation and a pre-interview briefing session. Although a majority of interviewees was Georgian, local ownership as an important principle for capacity development and development cooperation (Hagelsteen & Burke, 2016:45-46) was not explicitly part of the study. Therefore, the findings might be criticised as donor-oriented or reinforcing power imbalances. This is a trade-off resulting from the necessarily limited scope and choice of participants.

### 3. THEORETICAL BACKGROUND

#### 3.1 Key concepts

As pointed out by Hagelsteen and Becker (2014:299), concepts linked to DRM tend to be used inconsistently, which can lead to confusion and misunderstandings. Therefore, this section contains a conceptual clarification of how key concepts are understood in this research project, acknowledging that differing and sometimes contradictory definitions may exist.

The main pillar of the research project is the concept of RID. The first sub-research question aims to present the current definitions and framings of RID in the current discourse of contemporary development (projects) in the health sector in Georgia. The findings of the systematic scoping of literature are presented below in [section 3.2](#). As explained above, RID is closely interwoven into other concepts such as risks, development and sustainability. Therefore, the following key concepts need to be defined before diving deeper into the concept and framing of RID.

Very broadly, *risks* are defined as “the combination of probability of an event and its negative consequences” (UNISDR, 2009:25). Notably, risks only occur in relation to something deemed valuable for humans (e.g. physical assets, human life and health, cf. Tehler, 2020:41). A more detailed review of the changing understanding of the term can be found in [appendix 8](#)<sup>3</sup>.

Based on the UNDRR terminology *disaster risk management* is defined as “the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses” (UNDRR, n.d.).

*Climate change adaptation* is understood as a broader policy framework encompassing both mitigation and adaptation efforts (Mercer Clarke & Clarke, 2016: 29; IPCC, 2014:37).

The term *development* as applied in this research project defines development as the qualitative improvement of society while recognizing that the concept is context-dependent and never socially neutral (Becker, 2014:130; Knutsson, 2009:3,19; Nederveen Pieterse, 2001:2,3). Development is therefore inevitably value driven. Moreover, development can be considered “a collective learning experience” (Nederveen Pieterse, 2001:158) as the interpretation of what societies within different contexts regard as desirable changes over time (Nederveen-Pieterse, 2001:159). As of now, a broad range of increasingly complex and sometimes contradictory

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<sup>3</sup> For a comprehensive review differentiating between compound, interconnected, interacting and cascading risks, cf. Pescaroli & Alexander (2018).

definitions exist<sup>4</sup> (Becker, 2014:130; Nederveen Pieterse, 2001:158). To avoid using the term development ambiguously, two important currents of development thinking shall be introduced that are inextricably linked to the understanding of RID: sustainable development and resilience.

*Sustainable development*: “Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future” (WCED, 1987:4). Sustainable development is understood as a form of development that can be upheld over time and therefore, “can be viewed as requiring the ability to manage risk” (Becker, 2014:132-133).

There is no universally accepted definition of *resilience*. Here, resilience is understood as “the capacity of social, economic, and environmental systems to cope with a hazardous event, trend or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation” (IPCC, 2014:5). Further, resilience is considered as “the means to reach the end of safety and sustainability” (Becker, 2014:152). The term is closely linked to RID as will be discussed in [section 3.2](#).

Here, the World Health Organisation’s (WHO) definition of *health* is referred to: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO Const., pmb1.). This distinction matters because it illustrates how underlying societal values are explicitly captured in framing health as a more holistic state rather than the absence of disease.

Furthermore, the *healthcare sector* is understood as the combination of institutions related to health, either directly or indirectly, e.g. through the provision of care, including hospitals, other healthcare providers, companies, pharmacies, health insurance companies and/or manufacturers (Katina et al., 2014:20).

The clarification of key concepts for this research project is important to create a common understanding of relevant terms and concepts. This is required for the next chapter that deals with the current discourse concerning RID.

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<sup>4</sup> An in-depth discussion of the historical evolution of the term is beyond the scope of this thesis. Both Knutsson (2009) and Nederveen Pieterse (2001) provide a thorough overview of development thinking over time and different ways to approach the conceptualization of development.

### 3.2 RQ1. Definition and framing of risk-informed development

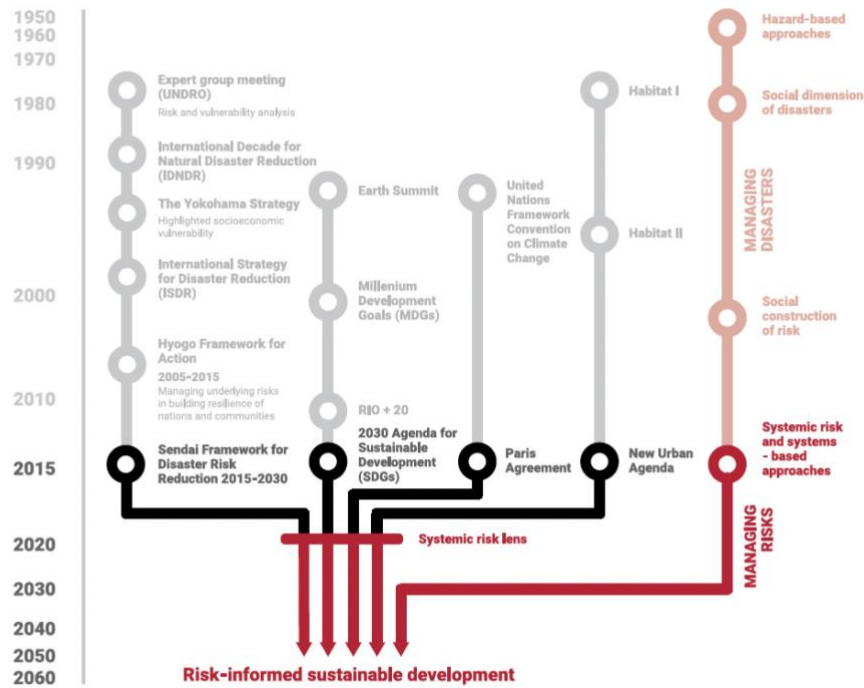
As described above (cf. [section 2.2](#)), a systematic scoping of the literature was conducted to answer the first sub-research question. Generally, RID builds on older approaches to linking DRM, CCA and development. The need to integrate CCA and DRM in sustainable development efforts has been identified by various authors (Mirasol et al., 2020:4; UNDP, 2020a:8; GNDR, 2019:1; Opitz-Stapleton et al., 2019:12-13; Turnbull et al., 2013:57-60; Mitchell & van Aalst, 2008:5-6). However, RID represents a more recent rationale to consider multiple disaster and climate risks simultaneously in societal development (Opitz-Stapleton et al., 2019:22) that emerges from the post-2015 global agreements. Therefore, only the most recent developments (from the post 2015 agreements onwards) are considered for the purpose of this degree project<sup>5</sup>. More information concerning the emergence of RID from the major global frameworks (The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030, SDGs, Paris Agreement and the New Urban Agenda) can be found in [appendix 9](#). [Figure 4](#) shows the evolution of the 2015 global agreements before 2015 and visualises the increasing level of coherence towards RID.

RID as a new approach to risk management goes beyond traditional DRM by representing a potential guiding principle for linking (sustainable) societal development, CCA and DRM. More precisely, RID is usually considered a way to mainstream both DRM and CCA into development (Bhardwaj & Gupta, 2021:104; UNDP, 2020a:9;12; Opitz-Stapleton et al., 2019:33). Here, mainstreaming refers to making disaster and climate risk management “an integral component at the heart of development strategies” (UNDP, 2020a:12).

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<sup>5</sup> While RID is a relatively new concept, there are other, similar approaches to including risks in decision-making that have a longer history and potentially influenced the emergence of RID: Risk-informed regulations have been applied for over thirty years by the United States Nuclear Regulatory Commission (US NRC, 2022). Although this would go beyond the scope of this degree project, understanding similarities and differences these concepts and their application between risk might be beneficial to better understand the basics of how risks are assessed and evaluated in subsequently considered in decision-making.





4 Timeline of the global frameworks, UNDRR, 2019:25

The literature scoping revealed several important aspects that are presented in the following section. Firstly, there is a big gap between the availability of grey literature discussing RID compared to the number of academic publications. After applying the inclusion and exclusion criteria, the scoping of literature generated a total of 136 articles, 52 academic publications and 84 grey literature sources (cf. [appendix 10](#)). Only few academic publications contained a definition or a framing of RID rather than only mentioning the term without further explanation. Among those publications that did contain a definition or framing of the term, 18 were chosen for in-depth analysis, either due to their specific focus on RID or because they contained critical contextual information. Of these 18, only seven were academic. Therefore, grey literature turned out to be of critical importance and was analysed together with the academic literature (cf. [section 2.2](#)).

Secondly, hitherto no commonly used or widely accepted definition of RID exists (Issar, 2020:32). That is reflected by the fact that most publications either contain a broad and general framing or a very specific, context-related understanding of what RID means.

Most commonly, RID is understood as a process or guiding principle rather than an objective or fixed state (Issar, 2020:32; Saja et al., 2020:234; UNDP, 2020a:12; Opitz-Stapleton et al., 2019:9-10,33-34). Further, RID is characterised by its focus on risk *understanding* as the starting point to inform decision-making linked to immediate and longer-term societal development (Issar, 2020:32; UNDP, 2020a:12; Opitz-Stapleton et al., 2019:9-10; ADB, 2018:14; ADPC, 2016:27; Siu & Collins, 2008:350; GIDRM, n.d, a). This focus on risk

information is closely linked to the SFDRR principles, especially with regards to the propagated “multi-hazard approach and inclusive risk-informed decision making” and focus on disaggregated data (cf. UNDRR, 2019:335; Opitz-Stapleton et al., 2019:40; SFDRR, art. III).

However, RID also contains an implementation or “action” component (Opitz-Stapleton et al., 2019:13; ADB, 2018:14) that stretches throughout all societal levels and spheres (Saja et al., 2021:234). RID is framed as flexible, allowing for a context-based application (Mayhew et al., 2020:10; UNDRR, 2019:337). RID intends to make development risk-informed through mainstreaming to: (i) protect development from the impacts of potential risk; (ii) prevent the increase of existing and future risks, (iii) reduce vulnerability to risks; and (iv) support resilience-building and adaptation to climate change (UNDP, 2020a:12; Wilkinson et al., 2016:6). According to Opitz-Stapleton et al., RID further aims to improve sustainable development and resilience by promoting “iterative and constant learning” (2019:13).

Importantly, framing RID as a value-based approach that is “reflective of public opinion” (Mayhew et al., 2020:11) means that the perception, evaluation and subsequent management of identified risks on an institutional level will necessarily differ from individual’s perceptions and may change over time (Coppola, 2011:167). This inevitably leads to trade-offs and requires an inclusive, just and open process of decision-making to avoid creating new risks for specific societal groups such as minorities (Opitz-Stapleton et al., 2019:9-10). Thus, RID is axiomatically linked to some form of risk governance, i.e. the process, institutions and mechanisms dealing with how risk management is conducted and how decisions are taken (UNDRR, 2019:54; ADB, 2020:13). Moreover, RID is intrinsically linked to uncertainty emerging from decision-making when dealing with multiple, complex and systemic risks (Friot & Gallagher, 2021:16; McCullough et al., 2019:68; Opitz-Stapleton et al., 2019:9-10,33).

### **3.3. Implementation of risk-informed development**

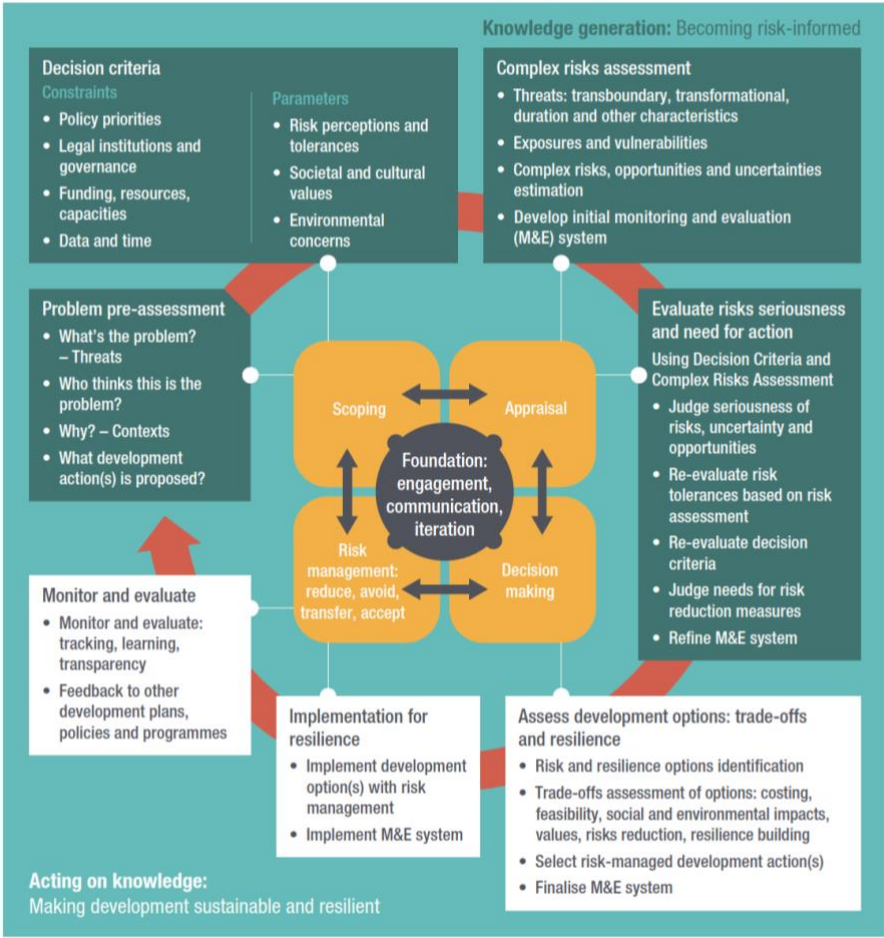
As mentioned above, RID is mainly framed as the process of mainstreaming DRM and CCA into (sustainable) development and institutionalising the whole risk management process within policymaking, development and investment planning processes (Bhardwaj & Gupta, 2021:104; UNDP, 2020a:12). Concerning the implementation of RID, four good-practice principles in RID dominate the current discourse: (i) inclusiveness and transparency, (ii) a phased and iterative process, (iii) flexibility and adaptiveness, and (iv) continuous learning and reflection (Opitz-Stapleton et al. 2019:34; UNDRR, 2019:418; ADB et al., 2018:14). Further, context-dependency plays an important role for RID (UNDP, 2020a:30; ADB, 2020:13-14; ADB et al., 2018:19), as pointed out for development in general (cf. [section 3.1](#)).

The scoping revealed that most publications considered risk assessments and subsequently risk-informed decision making as steps of RID (cf. Oschmann & Lachenmann, 2021:48; Saja et al., 2021:234; Rieger, 2021:14; ADB, 2020:13; Issar, 2020:37; AWC, 2017:10; ADPC, 2016:27). According to Abbasov (2018:25), all development interventions (including the construction of schools, roads, communication lines or cities) should support risk reduction measures by considering risk information and by subsequently implementing identified measures during the construction period. These may be construction standards, building codes or smart spatial planning (World Bank Group & GFDRR, 2018:10).

Issar broadens the framing while staying closely aligned with the SFDRR priorities by considering understanding risks, risk governance, financial risk management and lastly, preparedness for contingency management accompanied by analyses of policy, the legal and institutional context, stakeholders, knowledge, and finance as key entry points to implementing RID (Issar, 2020:37). Based on Opitz-Stapleton et al., there are five common key phases closely linked to the process of RID itself: (i) scoping or context analysis, (ii) risk appraisal/risk assessment, (iii) evaluation of options, decision-making, and implementation, (iv) monitoring and evaluation, and (v) communication and iteration (Opitz-Stapleton et al., 2019:36-37; Mayhew et al., 2020:12). In general, most publications dealing explicitly with RID called for an approach reaching across all sectors/spheres and phases of either a project/program or decision-making (Barnes, 2020:40; Opitz-Stapleton et al., 2019:35; AWC, 2017:10).

According to Saja et al. (2021:234), the availability of comparably few tools, risk matrices and guidance explicitly developed for RID is linked to the concept's recency. Several authors recommend making use of existing risk-based decision frameworks to support decision-making in development (cf. Saja et al., 2021:234; UN ESCAP, 2020:23; Opitz-Stapleton et al., 2019:34). Among the frameworks suggested were the International Risk Governance Council (IRGC) Risk Governance Framework (cf. [figure 5](#)), the UKCIP Risk Framework (Willows and Connell, 2003), Foundations for Decision Making (Jones et al., 2014) and Adaptation Needs and Options (Noble et al., 2014), G20/OECD Disaster Risk Financing Methodological Framework, ISO 3100:2018 Risk Management Guidelines, the Swiss Agency for Development and Cooperation (SDC) Guidance "CEDRIG" (short for Climate, Environment and Disaster Risk Reduction Integration Guidance), the Asia-Pacific Disaster Atlas by UN ESCAP and the UNDRR Global Risk Assessment Framework (GRAF) developed in 2019 (UN ESCAP, 2020:23; Opitz-Stapleton et al., 2019:35,42). Further, Saja et al. (2021:234) point out that both Mitchell (2003:11-26) as well as Benson, Twigg and Rossetto (2007) offer possible frameworks for mainstreaming disaster risk reduction (DRR) into development programming. Lastly,

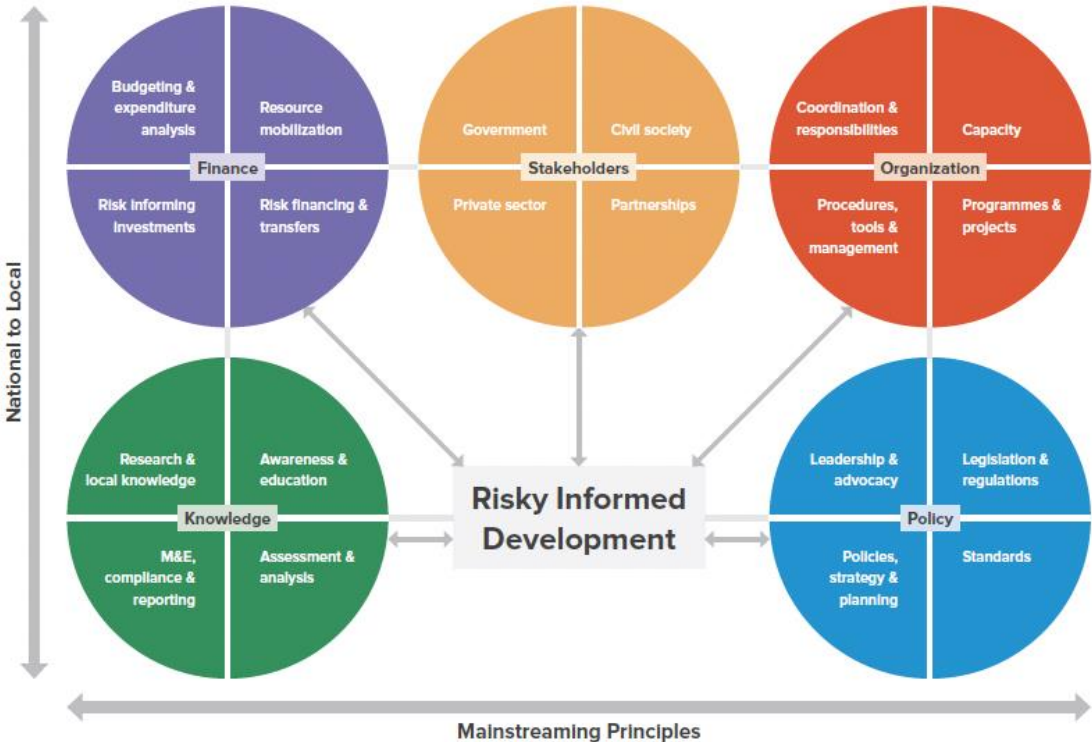
Ranger et al. (2021) introduce a framework for assessing economic losses in relation to compounding climate, economic and pandemic shocks that is compatible with RID as framed in the current discourse.



5 Risk-based decision frameworks for RID, Opitz-Stapleton et al., 2019:36

Other than frameworks to implement RID, the UNDP has published a “Strategy Tool for Integrating Disaster Risk Reduction and Climate Change Adaptation into Development” with respectively four entry points for each of the five identified “spheres of action of mainstreaming”, namely: (i) policy and law, (ii) organisation, (iii) stakeholders, (iv) knowledge, and (v) finance (UNDP, 2020a:29, cf. [figure 6](#)). These spheres are considered interrelated in a “complex web” of risk governance between various actors and institutions (UNDP, 2020a:30). Mainstreaming is considered a means to an end, i.e. a way to achieve more sustainable and resilient development through RID (UNDP, 2020a:63). Thus, the strategy tool represents another conceptualisation of RID that can be considered complementary to Opitz-Stapleton et al. (2019) and expanding Mitchell’s operational framework from 2003. In a similar manner, the Climate Risk Nexus Initiative (CRN) that was launched in the Arab Region in 2015 identified science and data readiness or decision-making, tools and technology for RID, local leadership and capacity development, and strategies and policies for transformative change as four areas

of work to achieve more RID (AWC, 2017:13). These theoretical frameworks are potentially helpful to prescribe the practical implementation of RID approaches. The findings of the interviews presented in [chapter 5](#) show to what extent these frameworks may be helpful in the context of the case study.



9 Spheres of action of mainstreaming and respective entry points, UNDP, 2020:29

The most dominantly cited reference, i.e. the ODI’s publication, defines RID as follows:

“In short, risk-informed development means instituting a risk management approach and connecting immediate to medium to longer-term development and risk management priorities and projections. It means protecting existing developmental assets from disaster risks while ensuring that public and private development processes today do not in any way contribute to increasing future risks. We believe risk-informed development (RID) should be seen as a risk-based decision process that enables development to become more sustainable and resilient to this evolving and complex threat and risk landscape” (Opitz-Stapleton et al., 2019:13).

The definition above was chosen for the second phase of the degree project as the basis for the interview guide (cf. [appendix 6](#)), aiming to answer the second and third research question by comparing the interviewees’ understanding of RID with the findings of the literature scoping (cf. [section 3.2](#)).



## 4. CASE STUDY

Following a qualitative case study approach (cf. Creswell, 2013:99), the context of the case study is shortly introduced before presenting and discussing the findings of the interviews. For an in-depth overview of the case study (including geography, political situation, economic context and the country's risk landscape including potential health impacts), cf. [appendix 11](#) and [appendix 12](#).

Georgia is a country located in the south-eastern part of Europe, positioned between the Great Caucasus mountains in the north and the Black and Caspian Seas in the south (MEPA, 2019:8; UNDP, 2014:10). The country is a direct neighbour to Russia (north), Turkey (south-west), Armenia (south) and Azerbaijan (south-east) (Chanturidze et al., 2009:1). Georgia's geography is characterised by a broad variety ranging from mountains to lowland plains and from glaciers to semi-deserts with several climate zones being represented (WB & ADB, 2021:5; MEPA, 2019:8).

The country is a parliamentary, representative democratic republic with a multi-party system in which the President of Georgia functions as the head of state and the Prime Minister as the head of government (Freedom House, 2021; BPB, 2020). The country is divided into nine regions and two autonomous republics (Adjara and Abkhazia) (Gaprindashvili, 2011:4, cf. [figure 7](#)).



7 Administrative map of Georgia, Gaprindashvili, 2011:4

In 2020, it had a population of 3.7 million (World Bank, 2021; GoG, 2021b:40). Georgia exhibits one of the highest total fertility rates in Europe (2.1 in 2018, cf. UNFPA, 2021:2).

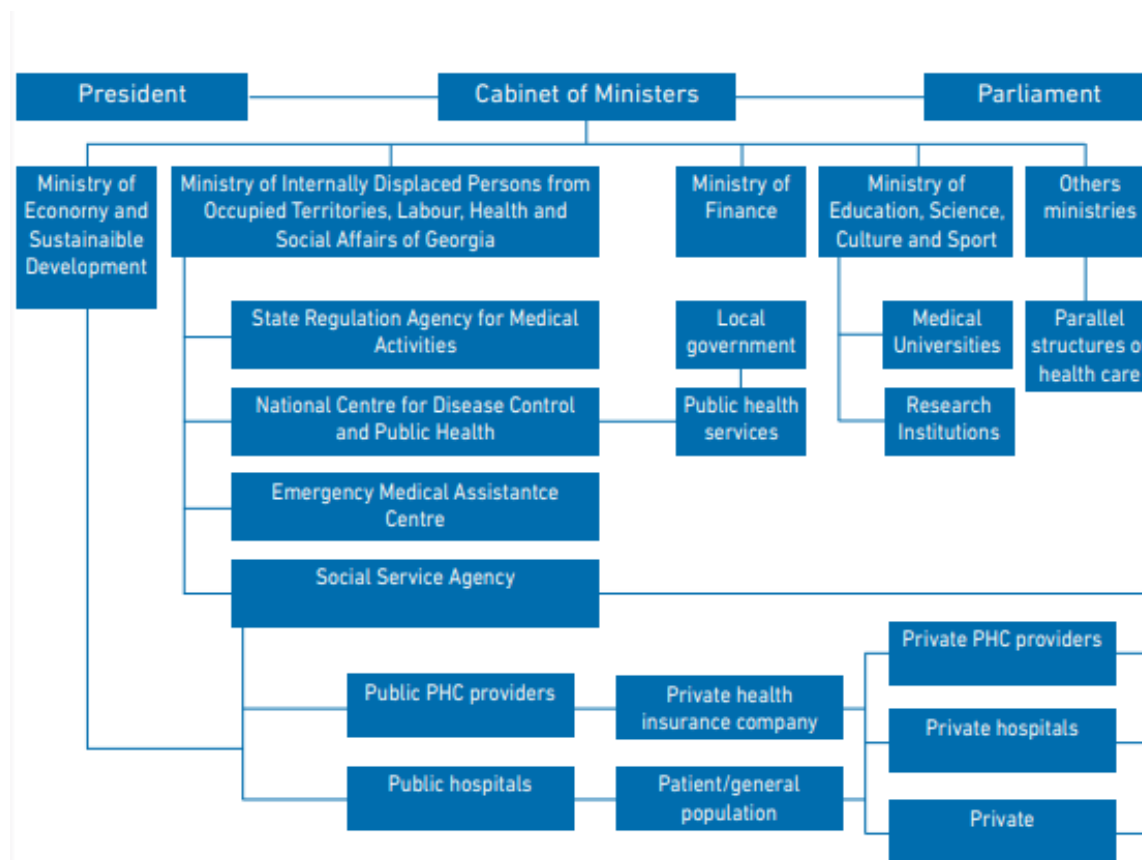
However, the country has been confronted with negative population growth rates since 1990, caused by emigration and declining birth rates (MEPA, 2019:17; Bertelsmann Stiftung, 2018:28).

Ever since the early 1990s, Georgia has faced economic reforms aiming at a transition towards a market economy (GoG, 2021b:15; MEPA, 2019:15). Georgia was recently moved from being classified as a lower-middle income country to an upper middle-income country (SSDGS, ICG & AGoG, 2020:39). The key sectors of Georgia's economy are industry, trade, construction, transport and communication, and agriculture (including forestry and fishing) (MEPA, 2019:17). However, COVID-19 had a significant economic impact on the country, especially concerning the tourism sector (SSDGS, ICG & AGoG, 2020:49). As of 2021, unemployment remained high (at 22%) compared to 17.3% in 2019 (World Bank, 2021). Projections expect pandemic-related higher poverty levels to fall back to pre-crisis levels by 2022 (ibid.). In 2020, 46.6% of the Georgian population earned less than \$5,50 a day (ibid).

Georgia is confronted with various types of risks, both natural and human-made. Earthquakes, landslides, floods and storms represent potential hazards although their occurrence depends on the location and climatic zone of the country (MEPA, 2019:7). Subsequently, significant threats to human development and various sectors of the economy arise (UNDP, 2014:6); making the country one of the most affected mountainous regions in the world (Chelidze et al., 2021 a:430).

## 4.1 The Georgian health sector

The structure of the healthcare system in Georgia is depicted below in [figure 8](#). As can be seen, the healthcare system consists of various actors, both private and public, with differentiated responsibilities<sup>6</sup>.



8 Actors in the healthcare system in Georgia<sup>7</sup>, WHO Regional Office for Europe, 2020:5

Although the health status of the population is still lagging behind the rest of the WHO European Region, Georgia has made progress concerning various health indicators in the last three decades (SSDGS, ICG & AGoG, 2020:27)<sup>8</sup>.

<sup>6</sup> The WHO report (*Quality of primary health care in Georgia*) from 2018, the 2020 WHO Regional Office for Europe report on health and sustainable development: progress in Georgia and the 2021 Country Programme by the United Nations Population Fund (UNFPA) provide in-depth insight into the status quo of the health system in Georgia as well as roles and responsibilities. Further, Richardson & Berdzuli (2017) provide an overview of the changes undergone by the health system in Georgia. For more information concerning the out-of-pocket payments, cf. Goginashvili et al. (2021).

<sup>7</sup> The abbreviation PHC included in the figure refers to primary health care.

<sup>8</sup> Notably, the 2017 “Health Systems in Transition Report” points out that mortality data in Georgia is unreliable due to a high share of ill-defined cause of deaths, the highest in the European region in 2016



In the last 20 years, the health care system in Georgia has undergone a variety of reforms, leading to a decentralised and privatised system (Gigauri, & Djakeli, 2021:103; Richardson & Berdzuli, 2017:xviii). Moreover, the reforms were aiming at: (i) enabling universal health care access to high-quality medical services, (ii) improving the primary health care system, and at (iii) reducing the financial risks to the population that are linked to high out-of-pocket expenditures on health (Bertelsmann Stiftung, 2018:22; WHO Regional Office for Europe, 2018:1; WHO Regional Office for Europe, 2017:vi). Among the recent reforms were the Georgian Health System State Concept 2014-2020 and a universal health coverage programme (UHCP<sup>9</sup>) launched in 2013 (SSDGS, ICG & AGoG, 2020:7; WHO, 2018:1).

#### **4.2 Development cooperation (projects) in the health sector in Georgia**

In addition to the national stakeholders, there are several national and international stakeholders working in development cooperation in Georgia. The “Unit for Coordination with Donors” (DCU) of the Georgian Government administration is responsible for coordinating development cooperation in Georgia, promoting alignment and harmonisation of external assistance and is organised in six sectors (Rogava, 2019; Ministry of Foreign Affairs of the Czech Republic, 2018:14-15; GoG, 2015:6). In case of new projects exceeding 100,000 USD and/or “relating to issues of strategic importance to the country”, the DCU must be notified in order to check for potential inconsistencies or overlaps that are subsequently addressed to improve targeted assistance (GoG, 2015:7). In 2020, a total of 4.8 billion<sup>10</sup> GEL was provided by donors to Georgia (AGoG’s PPGCD), 2021:13). Given the classification of Georgia as an upper middle-income country (SSDGS, ICG & AGoG, 2020:39), most of the assistance provided consisted of loans (around 82% of total funding) as well as grants and guarantees (13%) with a small amount of assistance being provided as technical assistance and humanitarian aid (AGoG’s PPGCD, 2021:8).

As visible in [figure 9](#) below, the DCU provides information on the share of assistance received divided by thematic allocation. Health-related development assistance is categorised under “Social Welfare” and “Human Capital Development”, amounting to a total of 9.5% of the

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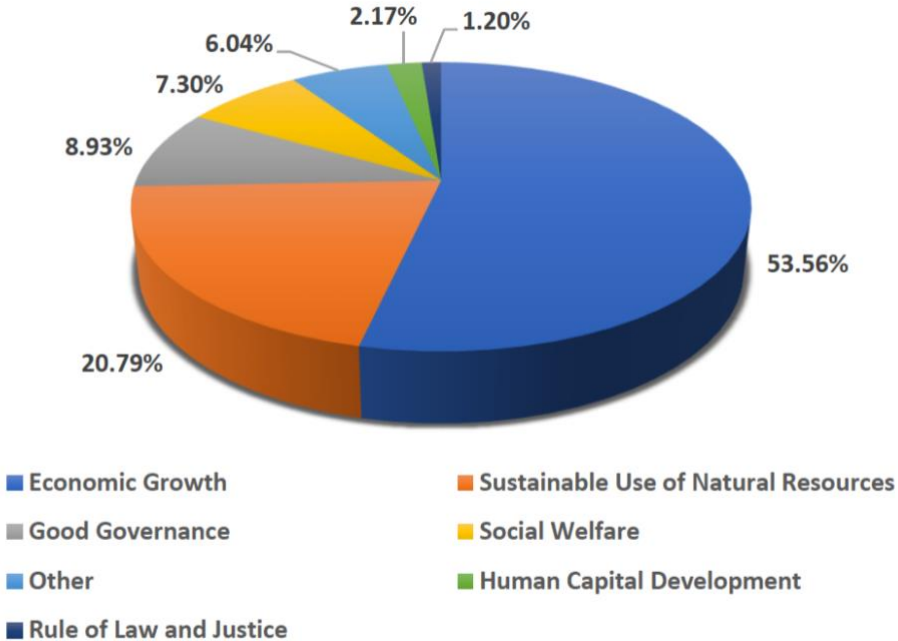
despite investigations by the Georgian National Centre for Disease Control and Public Health (NCDC) and other attempts to improve the data reliability (Richardson & Berdzuli, 2017:4-5).

<sup>9</sup> Universal Health Care is “when all people have access to the health services they need, when and where they need them, without financial hardship” (Cissé et al., 2022:111).

<sup>10</sup> In December 2020, that was equivalent to 1.4 billion USD (1 GEL = 0,3011 USD as of 01.12.2020) (Finanzen.net, n.d.)

cumulative assistance provided (2.6 billion GEL), of which the health sub-sector received the largest share: 1.8 billion GEL, cumulatively (AGoG’s PPGCD, 2021:18).

Climate - and DRM - related assistance are categorised under “Sustainable Use of Natural Resources” (AGoG’s PPGCD, 2021:16-18), whereas the alignment of major financial flows to the Sustainable Development Goals (SDGs) is given a separate section of the report which, however, does not include SDG 3 (“Good health and well-being”) and sub-targets (ibid:24).



9 Aggregated aid flows by thematic allocation, AGoG’s PPGCD, 2021:13

## 5. RESULTS AND DISCUSSION

This chapter aims to answer the second and the third research question. After discussing the framing of RID in the context of the case study, barriers and enabling factors to integrating RID in the Georgian health sector are presented, triangulated and discussed. The chapter concludes with additional aspects not mentioned throughout the interviews that emerged during the triangulation. Due to a limited number of interviewees from within the health sector (cf. [section 2.4](#)), most results presented are kept general, including a specific focus on the health sector where possible. The discussion further contains insights from different documents analysed. This analysis serves as a first exploration and does not claim any statistical representativeness. Thus, only tendencies concerning differing or converging aspects are pointed out. Generally, the findings require further research and validation. However, the triangulation points towards a certain degree of generalisability that is pointed out where reasonable.

### **5.1 RQ 2. How do key stakeholders in the health sector in Georgia interpret and apply risk-informed development?**

The stakeholders interviewed had no uniform understanding of RID. The range of answers covered the whole spectrum from complete unfamiliarity with the term to a framing fully aligned with the literature scoping. Many interviewees equated RID with DRM - or environmental impact assessments. At the same time, many interviewed stakeholders exhibited an implicit understanding of RID containing elements of the definition obtained through the scoping of the literature (cf. [section 3.2](#)). Among those elements named repeatedly were: (i) the importance of decision-making (and governance), (ii) the need for participatory processes and inclusion, as well as (iii) the importance of risk information for successful decision-making. However, the new understanding of risks as contemporaneous, compounding and cascading (cf. [section 3.1](#) and [appendix 8](#)) was mentioned only in a few interviews. Moreover, climate change (and climate change-induced risks), systemic development-planning, cross-sectoral cooperation as well as sustainable and resilient development were rarely part of the interviewee's framing of RID. In a similar manner, there was no mention of RID being an attempt to integrate the SGDs, the Paris Agreement and the SFDRR.

The perhaps most comprehensive definition provided throughout the interviews was the following:

“I think development should be risk-informed. What does it mean? If there are certain risks related to disasters - they could be climate induced or non-climate-induced like earthquakes - all of these should be considered while planning and then doing

development projects. And that should apply everywhere actually, in every sector, on municipal level or national level. Even on community level. This would apply to businesses, to the public sector. Perhaps most importantly, to construction and development - but not only.”

- International interviewee from an international organisation

As will be discussed below (cf. [section 5.1](#)), the findings show that the term RID is relatively new and not commonly applied in the context of Georgia. Therefore, the first sub-research question was answered focusing more on the interpretation than on the application of RID approaches in Georgia. As will be presented [below](#), there are few development cooperation projects in Georgia that explicitly focus on RID, even less so linked to the health sector. Changing this represents one of the major challenges identified as will be discussed below.

### **5.2 RQ 3. What are the problems arising from differences in definitions and framing in a development context?**

An analytical comparison of the first and second research question showed several differences in definitions and framing of RID. Despite a relatively high number of non-academic publications linked to RID, there is a lack of academic literature related to RID. Linked to this knowledge gap (which requires further research) is the consequential absence of a commonly used academic definition. This is problematic because stakeholders with different backgrounds working in developmental contexts do not have a standard definition to rely on, as experienced throughout the interviews, too. Although the framings of the concept were relatively homogenous, confusion and misunderstandings did occur among the interviewees. This can become a communication barrier. Also, the demarcation of RID as opposed to older, related concepts (e.g., climate smart disaster risk management, risk-sensitive development or risk-informed regulations) has shown to be ambiguous. These problems identified are closely linked to Hagelsteen & Becker (2014), who dedicated a paper to the negative effects of terminological ambiguity in development contexts. Therefore, a certain degree of generalisability concerning terminology issues linked to RID in a development context can be assumed. The absence of a standard definition also represents an opportunity for further research and exploration of the concept.

Secondly, RID as framed may require further explanations and clarification of nested concepts such as risks, resilience, sustainability, and development (cf. [section 3.1](#)), even when talking to experts in DRM, CCA and/or development cooperation. Therefore, the framing could be criticised as inaccessible or exclusive, especially to stakeholders with different educational

backgrounds and would require a lot of contextual information on the concept in order to grasp it fully.

Moreover, most definitions found are coming from international organisations such as the Overseas Development Institute (ODI) or UN bodies. Not only is this problematic due to a global power imbalance and the reproduction of predominantly Western approaches to dealing with global challenges, but this can be considered a top-down approach to framing RID that may complicate the translation into local (or even national) realities (e.g. for development cooperation contexts). This is an area for further scientific exploration.

### **5.3 RQ 4. What are the barriers and enabling factors regarding risk-informed development in Georgia?**

Despite the wide range of stakeholders who agreed to participate in the interviews, there was a broad consensus on a number of different barriers. This was illustrated clearly by the repeated mentioning of the same barriers by different types of stakeholders. In contrast, other barriers were mentioned less often or were perceived in a contradictory manner by different interviewees. Generally, more barriers than enabling factors were brought up. This may be linked to the generally low level of RID-activities being implemented in the health sector and in the Georgian context in general. For reasons of readability, the identified barriers and enabling factors are presented in clusters. However, they are interlinked and overlap. Their order of appearance aims to follow a logical connection and is not to be understood as a ranking of importance. Moreover, the decision was made not to contrast diverging standpoints between different types of stakeholders, e.g. comparing NGOs to governmental actors. Firstly, to guarantee the interviewees' privacy via anonymous quotations. Secondly, the aim of the interviews was to explore the overall picture in Georgia rather than suggesting an inadequate level of detail given the comparably small sample. Based on the third research question, terminology is another cluster.

#### ***5.3.1 Knowledge and Capacities***

##### *Human capacities*

Starting with the cluster of barriers that received by far most attention, human resources and capacities were named: Stakeholders from 12 of the 13 interviewed organisations agreed that a lack of human capacities represents a barrier to integrating RID. More specifically, a quantitative as well as qualitative lack of human resources on all levels were named. In terms of human capacities for integrating RID, exchanges with experts from other countries and

knowledge enhancement abroad were brought up as an enabling factor by different interviewees.

However, high staff turnover (especially in public agencies), a loss of staff from the public to the private sector as well as brain drain were explanations provided by several interviewees, mostly explained with higher monetary incentives (cf. [below](#)). As put by one interviewee: “What we have is this replacement of decision makers and authorities, frequent replacement. And they are taking the knowledge that they have with them. And if someone new is coming, then you start from scratch.”

Interviewees from seven of the interviewed organisations further made a lack of capacity retention through institutionalisation responsible for ongoing issues with human capacities: “Many, many trainings have been already delivered to our national partners, but still, we're facing a problem in terms of absorbing capacities”. Explanations provided for this barrier included a lack of regulative mechanisms, the absence of follow-up from donor-side as well as from the side of national partners, reforms and structural changes, and governance challenges on a broader level (as discussed [below](#)).

While most interviewees agreed on the need to enhance organisational and functional capacities to prevent the loss of institutional memory, the specific mechanisms to ensure better institutionalisation were subject to controversy. Some interviewees considered stronger formal agreements a way forward, especially in the form of obligations demanded by international cooperation partners and donors. Others pointed out that this had been attempted before (e.g. in the form of signed agreements from the governmental side) – without lasting success.

Furthermore, two interviewees stated that an inclusion of mandatory practical experience for students, independent of their area of expertise, might be useful. A different perspective on the lack of young technical professionals (e.g. engineers) was linked to an observed lack of interest and potentially of financial incentives:

“[...] Apparently, we don't have young professionals who are interested in this very technical stuff [...] It is not popular, everyone wants to become a businessman - or lawyer.”

- Interviewee from an international organisation

With specific regards to the health sector, two additional explanations were repeatedly emphasised by various interviewees: the lack of regulation of medical education as well as the practical absence of continuous education for medical professionals. In fact, maternal and child mortality in Georgia remains higher than the regional average (25 per 100.000 births in Georgia

in 2017), mostly due to low quality of maternal care services, lacking medical and reproductive health education (UNFPA, 2021:2).

### *Lack of (basic) resources*

Several interviewees further pointed out a general lack of equipment and resources, such as monitoring and technological equipment (e.g. modelling software for hazards), that also contributes to gaps in risk information (cf. [below](#)). Indeed, advances in industry 4.0 technologies<sup>11</sup> as enabling factors to RID (cf. UN ESCAP, 2020:23) can only be harnessed if the respective equipment and resources are present.

Moreover, severe basic gaps in the health system were pointed out, including issues such as lacking equipment (including windows in some rural facilities) and technological skills (including the use of computers). Furthermore, a lack of incentives for medical professionals, financially and in terms of work-efficiency was mentioned. Additionally, one interviewee named missing awareness of the health system's benefits among the population, high out-of-pocket expenditures, especially for people with chronic diseases, and a neglect of the primary healthcare sector due to a strong focus on hospitals as major gaps in the current health system.

In fact, the high share of private out-of-pocket expenditure is one of the country's major health challenges (WHO, 2021; Bertelsmann Stiftung, 2018:17; WHO, 2017:42-43). The financing of healthcare in Georgia remains strongly based on private household out-of-pocket expenditure. (Goginashvili et al., 2021:34; WHO, 2020; WHO Regional Office for Europe, 2017:23). In 2018, out-of-pocket payments made up 48% of the total spending on health in Georgia in 2018 (WHO, 2020). Further, public spending on public health care (PHC) in Georgia is still lower as compared to other countries in the region. In 2018, only 0.3% of the Gross Domestic product (GDP) was spent on PHC compared to 0.5% in Uzbekistan (second last), 0.7% in Tajikistan, 1.2% in the Republic of Moldova as well as 1.2% in the Russian Federation (WHO, 2021:3).

According to the WHO, one out of six households still experiences catastrophic health spending, mainly due to a lack of coverage and high costs for pharmaceuticals (WHO, 2021:6; Richardson & Berdzuli, 2017:xxi,37). Despite significant improvements, the system is still fragmented with several healthcare programs other than the UHCP (WHO, 2021:2; Richardson & Berdzuli, 2021:xix).

One interviewee stated:

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<sup>11</sup> Industry 4.0 refers to a current trend of automation and digitalisation of industries (cf. Hariharasudan & Kot, 2018:1).

“I have a déjà vu [...] - 20 years ago, we had the very same [challenges] – [...] the accessibility of primary health care, the awareness, the quality of services, especially in rural areas, [...]”

- Interviewee from an international organisation

Closing these basic gaps was considered a necessary precondition to RID. From a risk-informed perspective, this would mean taking into consideration societal trends such as urbanisation, demographic change as well as risks (such as seismic activities, etc.). [Below](#), a digital health project by the EU, UN and Georgian Government is shortly introduced that represents an existing RID approach within the health sector.

### *Risk information*

On the one hand, some interviewees (especially those who work with hazard information, both governmental and non-governmental actors), were satisfied with the availability of risk information and mainly identified lacking human capacities and missing equipment as barriers (cf. [above](#)). On the other hand, some actors observed gaps in terms of data about climate change, the interaction of different hazards (which is currently being implemented under a huge UNDP program) and concerning health-specific data. The latter concerned – among others – the availability of a registry containing people with chronic diseases and/or other specific needs. However, this was contradicted by other actors, indicating coordination issues (cf. [below](#)). Risk information is a commonly agreed on prerequisite to enabling RID (cf. Issar, 2020:32; UNDP, 2020a:12; Opitz-Stapleton et al. 2019:9-10; Wetterwald & Kjaergaard, 2016: 91) and the importance of cross-sectoral data for proper risk understanding (including socioeconomic and other types of data) is well known (Opitz-Stapleton et al., 2019:10,43; ADB, 2018:14).

Other than the availability of data, limited access to existing data (such as the confidential national threat assessment) and a lack of compatibility of existing data were mentioned as reappearing barriers to integrating RID in Georgia. Despite an observed improvement as well as ongoing and planned projects dealing with this issue, the system of data exchange is described as fragmented with no centralised source of information:

“And the health management information system is also fragmented. There are lots of kinds of stand-alone-types of information systems across the national health agencies, so not they're not talking to each other. They're not interoperable. So, there's a need to streamline the existing information systems. And they're not centred around the patient's need.”

- Interviewee from an international organisation



Notably, the 2017 “Health Systems in Transition Report” points out that mortality data in Georgia is unreliable due to a high share of ill-defined cause of deaths, the highest in the European region in 2016 despite investigations by the Georgian National Centre for Disease Control and Public Health (NCDC) and other attempts to improve the data reliability (Richardson & Berdzuli, 2017:4-5).

Several interviewees saw a need to better exchange information. Also, stakeholders working with risk information criticised an inadequate use of the data provided by them. A previous WHO publication concerning the Georgian health sector confirms that data generation and their potential application for policy feedback and improvements remain weak (WHO, 2021:10).

Bringing these barriers together, most stakeholders agreed that the provision of accurate and reliable information, including regular updates, subsequently enable better integration of RID into the Georgian context. Further, the data should be transparent, accessible and shared between actors, ideally via one unified system. Existing data such as hazard information, risk and capacity assessments should be taken into consideration and integrated into the different sectors. In Georgia, such attempts could build on the experience of an ongoing UNDP project (cf. [below](#)) concerning strategy development for the agricultural sector with regards to climate change and risk information.

These points have been repeatedly brought up by various authors before, among them the International Science Council (ISC), UNDRR & IRDR (2021:17), ADB (2020:15), and the GIDRM (2020:8) and UNDRR (2019:158,169-170). Furthermore, “major renovations of approaches to risk assessment and analysis are needed” (UNDRR, 2019:72) to fully capture the dynamic, interconnected and potentially cascading nature of risks. Similarly, risk evaluation requires ethical and political considerations to enable democratic risk-informed decision-making (Opitz-Stapleton et al., 2019:41-42).

Summarising the first cluster, knowledge and capacities (technical, functional and contextual) have been named as crucial for enabling RID by various sources and across different contexts (ADB, 2020:14; Nyandiko, 2020:3; Quevodo et al., 2020:1; UNDRR, 2019:72;169,346; Opitz-Stapleton et al., 2019:10,14; ADB et al., 2018:6,1). Thus, capacities and knowledge can be assumed to be a generalisable enabling factor as well as potential barrier that may be applicable to other contexts as well.

### ***5.3.2 Coordination and Communication***

Coordination and communication issues repeatedly came up as a major barrier to integrating RID in Georgia and as a general challenge, too. Strikingly, they were already pointed out as a

DRM-related challenge in the Capacity for Disaster Reduction Initiative's (CADRI's) capacity assessment in 2014 (UNDP, 2014:4). Interviewees from seven different organisations brought up coordination explicitly, referring to the coordination within the public sector as well as between different types of organisations working together. Apparently, the DCU is not actively coordinating different donors' activities. None of the interviewees brought the DCU up and when asked, "not active" was the general perception. Despite efforts to organise directly between donors and development cooperation agencies, interviewees pointed out issues with inefficiency and sometimes overlapping activities. While the high number of organisations and subsequent complexity were one explanation for lacking coordination, other interviewees mentioned general issues with communication and information exchange. As diagnosed by one interviewee: "Georgia has a communication gap". Moreover, unclear roles and responsibilities were mentioned by four different organisations. The WHO specifically mentions unclear roles and mandates in the Georgian health sector as reasons for inefficiency and a lack of accountability (WHO Regional Office for Europe, 2018:9,10).

Besides, silo-thinking and sectoral fragmentation frequently came up during the interviews as a perceived barrier to integrating RID, potentially contributing to coordination issues. Further, bureaucracy and a lack of follow-up due to different agencies' mandates were mentioned.

With regards to the health sector, two interviewees named different ownership models as a factor causing coordination issues. One of them stated:

“For example, in our country [...], a patient goes [...] where they have money, but in an ideal situation, the money would go with the patient. So, [...] the primary and secondary level [would] have financial contact, and some feedback from each other. And the patient would be safe, avoid additional, unnecessary examinations, unnecessary medications. So, it would be organised with financial connection[s] between primary and secondary levels.”

Interviewee from an international organisation

In fact, the geographical coverage of health services is subject to an urban-rural divide (NCDC, 2021; Richardson & Berdzuli, 2017:xviii). Moreover, the 2017 WHO Health System - review considered 80% of all hospital beds, primary care and outpatient specialists to be private, with few hospitals (incl. psychiatry, emergency care, HIV, TB and the immunology Georgia national centre) being public (Richardson & Berdzuli, 2017:43-44).

In Georgia, the health sector was partly responsible for coordinating the ongoing COVID-19 pandemic. Interviewees with direct and indirect involvement had different standpoints regarding the evaluation of this task, ranging from partial satisfaction (especially a spreadsheet of needs and requirements provided by the Ministry of Internally Displaced Persons from the

Occupied Territories, Labour, Health and Social Affairs of Georgia (MoH) was named as a good example) to “the wrong mindset within the MoH”. Relating to this, perception and awareness is another cluster discussed further [below](#).

Reversely, well-functioning coordination and communication represent important enabling factors. Throughout the interviews, some examples of enabling factors were pointed out as well. Donors already engage in self-organisation and coordination and should, according to several interviewees, intensify such attempts. Examples brought forward were donor dialogues as well as stakeholder consultations. Also, different interviewees appraised that – depending on the respective agencies and activities - the communication and coordination between different governmental agencies was sometimes working sufficiently well. One interviewee named the development of drinking water regulations as a positive example of exchange and cooperation between both public and private actors. In general, better multi-stakeholder and multi-agency coordination, e.g. between science, the public and the private sector were considered potential enabling factors that should be aimed for more.

Another interviewee from a local NGO pointed out that development cooperation projects that “make agencies and institutions sit together and communicate”, i.e., act as bridges between different stakeholders, could represent an efficient way to enhance coordination, overcome silo-thinking, enhance a more holistic perspective among decision-makers, and create an enabling environment to RID. Specifically, cross-sectoral projects might be a promising approach. Several examples of ongoing and upcoming programs and projects exhibited such approaches, of which some are shortly introduced.

Firstly, UNDP is currently implementing a USD 74 million program called “Reducing the risk of climate-driven disasters in Georgia” consisting of three interlinked projects: (i) Scaling-up Multi-Hazard Early Warning Systems and the Use of Climate Change Information in Georgia (USD 27 million provided by the GCF), (ii) Strengthening the Climate Adaptation Capacities in Georgia (USD 5 million SDC-funding), and (iii) Improved Resilience Communities to Climate Risks with USD 4 million funding from the Swedish International Development Agency (SIDA)) (cf. UNDP Georgia, n.d.). The program is co-financed by the Georgian government with USD 38 million and covers the basis of risk information (including climate change-induced risks) for further RID activities.

Secondly, the Regional Development Strategy that was co-created by the Georgian Ministry of Regional Development and Infrastructure (MRDI) and EU4Georgia was mentioned. Specifically, the fourth priority area, i.e. the promotion of local development and support of specific areas based on their “endogenous development” (MRDI & EU4Georgia, 2018:111)

contains plans to create a special economic zone in the form of a smart and green city (Anaklia City) (ibid:115).

Lastly, an EU, UN<sup>12</sup> and MoH project for digital health solutions and telemedicine represents another multi-stakeholder project with high relevance for RID. Although the focus is on the health sector only, the project aims to provide solutions to the ongoing COVID-19 pandemic and health challenges concerning a lack of accessibility (EU4Georgia, 2022; EEAS Georgia, 2021). Moreover, related to the shift to digital solutions, future dynamics such as urbanisation are potentially addressed.

Building on existing programs and projects, exchanging best practices and actively looking for synergies as suggested by various interviewees may help in the creation of an enabling environment for RID.

Coordination and communication are among those factors that are prevalent as barriers (and potential enablers) in many different contexts especially when combined with fragmented regulations (Cissé et al., 2022:100; Mayhew et al., 2020:9; Opitz-Stapleton et al., 2019:21; WHO, 2019:ix). Vertical integration (both top-down and bottom-up), synergy strengthening, and institutional arrangements are recommended to improve communication and coordination (GIZ, 2021:21,23; Rieger, 2021:13; ADB et al., 2018:24). Further, a willingness for cooperation and partnership rather than competition between different agencies and sectors are required to enhance shared learning experience (Mayhew et al., 2020:46; Opitz-Stapleton et al., 2019:41; Basil, 2018:6). Lastly, the creation of a “culture of risk-informed decision making to transform behaviours and ultimately increase the resilience of societies and systems” (UNDRR, 2019:69) has been suggested (cf. [below](#)). Therefore, this cluster can be assumed to be generalisable.

### ***5.3.3. Governance and Policies***

In relation to coordination issues, silo-thinking and fragmentation, almost all interviewees brought up governance-related barriers. Although there were some differences in what the interviewees perceived as most problematic, there was a consensus concerning the overall importance of good governance for the topic (Issar, 2020:37; UNDP, 2020a:30). Almost half of the interviewees named the lack of adequate legislation as a major barrier or identified the need to improve existing regulations in a systematic way.

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<sup>12</sup> The WHO, the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF) and the United Nations Office for Project Services (UNOPS) are the involved UN bodies in the project.

Some of the interviewed stakeholders perceived the legislation as improved or currently being improved. For example, DRM-related policies as well as the development of a new National Health Protection Strategy (NHPS) in 2022 were pointed out by an interviewee from an international donor organisation: “You may be aware that in Georgia, there is a National Health Care Strategy that was approved two weeks ago. So that is a major development and shows the government's responsiveness and priority to reforming the health care sector.”

Nonetheless, others problematised the absence of policies (such as a decree on digital health which was being developed at the time) and further criticised the lack of actionable and/or specific enough policies. Furthermore, some interviewees pointed out that existing regulations were already hard to enforce and monitor due to the lack of overall capacities and resources – not to mention additional laws and regulations, which would require even more resources. According to several interviewees, the same applies for necessary updates of existing regulations as well as strategic documents (like the National Disaster Risk Reduction Strategy which was brought up several times).

With regards to cross-sectoral policy documents, one interviewee criticised:

“In general, [the] climate change thematic and sub-sectoral development in [the] public health care system is very weak. There is just one single document which still needs to be updated. This is [the] National Environmental Health Action Plan which has some very small reflection on climate change and health issues. And there is no solid strategy or something usable for this sector. Nothing like this.”

- Interviewee from an international organisation

However, other interviewees pointed out that both the National Environmental Health Action Plan 2018-2022 (NEHAP) and the NHPS were good starting points. One interviewee from an international organisation stated that “ [...] integrated plans are becoming popular. So, the Environmental and Climate Action Plan or the Energy and Climate Action Plan, now Environmental and Health-related”. The general importance and enabling role of cross-sectoral strategies and plans has been emphasised for other contexts, too (ADB, 2020:36; UNDRR, 2019:170,317).

Notably, some of the persisting challenges to the Georgian health system had already been included as priorities for 2014-2020 in the 2014 state concept for universal healthcare. Among these were financial sustainability of the healthcare sector, the quality of medical products and services, human resource development, information management as well as the prevention of both communicable and non-communicable diseases (GoG, 2014a:4). Further, there are

important regional differences with rural areas exhibiting significantly fewer available health services, especially compared to Tbilisi (Richardson & Berdzuli, 2017:xviii).

Based on the numerous challenges in the health sector in Georgia, recommendations brought forward by the WHO in 2021 include: (i) substantially increasing public investments in PHC (WHO Regional Office for Europe, 2021:12), (ii) making PHC both universally accessible and free to reduce health inequalities (ibid:15), and (iii) going beyond health financing and transforming the system towards more proactive and holistic approaches (ibid:19-20). As discussed below (cf. [below](#)) these are partially incorporated in the newest NHPS from 2022.

“A lack of good governance” and the absence of any overseeing or monitoring agency in the health sector was another barrier mentioned during the interviews, concerning both private and public healthcare facilities, although due to different reasons. The importance of monitoring, evaluation and learning for RID has also been pointed out by Opitz-Stapleton et al. (2019:43). With regards to the private sector, one interviewee required more regulations:

“And as you may know, most parts of the health care services are outsourced to private companies. And when I suggested that there was not enough monitoring, I meant all the quality of services [...]. The government could not afford to do the same in site visits, the monitoring, the real serious, independent, impartial [quality monitoring]. And having in mind [...] the private sector [...] possessing even the pharmaceutical companies, the primary health care hospital, all in one! It's a closed circle without any real external eye as a monitor”

- Interviewee from an international organisation

In a similar manner, poor design and enforcement of regulations targeted at the private housing sector have been identified as a barrier to RID integration before (cf. Cumiskey, 2020:257).

However, an enabling factor linked to governance that was mentioned repeatedly was the example of the development of DRM-related legislation in 2014. Several of the interviewees were involved in the development of a legislative basis to DRM. As one of them recalled:

“And if you look at our legislation development, before 2014, practically, we had no proper legislative basis. And it was a huge and massive effort from different international partners like UN, USAID [United States Agency for International Development] and the EU, who pushed to integrate this agenda in development activities”

- Interviewee from an international organisation

Given the frequent mentioning of governance-related issues in other RID-related publications, it seems reasonable to assume a wider generalisability. Moreover, risk-informed policy interventions require dialogue and cooperation (UN ESCAP, 2020:23); showing the interconnectedness of the different clusters. Together with general coordination issues and a lack of human resources and different capacities, the governance-related barriers point into a more systemic level of general barriers that will be discussed below (cf. [below](#)).

#### **5.3.4. Finance**

Another type of barrier that was brought up repeatedly concerns finances. First of all, a lack of financial resources was pointed out, especially for regional development. Furthermore, short-term financial interests (especially among investors) and gaps regarding the cost-benefit relation of different types of investments (among public and private actors and on different levels) were pointed out as hindering the integration of RID. One example that was brought up concerned a lack of awareness about the long-term benefits of investing in preparedness. Not surprisingly, limited financial resources and short-term thinking are well-described barriers (and in reverse, potential enablers) not only to integrating RID, but to DRM, CCA and sustainable development (planning) in general (cf. Saja et al., 2021:234; Issar, 2020:39; WHO Regional Office for Southeast Asia, 2019:1; UNDRR, 2019:350; Opitz-Stapleton et al., 2019:10).

Subsequently, an understanding of cost-benefit relations among risk-informed decisions represents an enabling factor. In addition, one interviewee described support for local budget planning as well as supporting local strategy development as an enabling factor with regards to integrating DRM and a broader vision of how DRM and development are connected. Although not mentioned throughout the interviews, new financing mechanisms such as innovative bond instruments could be considered an additional enabling factor with regards to finance (cf. Tanner et al., 2015). Besides, the important role of financial institutions and investors/borrowers has been pointed out by (cf. Issar, 2020:38; Opitz-Stapleton et al., 2019:44-46).

As mentioned above (cf. [above](#)), a lack of financial incentives, especially for professionals in the health sector, was mentioned by half of the interviewees. According to one interviewee, current approaches were not sufficient as they would hardly consider the side of medical practitioners. Moreover, several interviewees pointed out the difference in ownership models in the health care sector as a financial barrier:

“Nobody, the government is not controlling the remuneration of medical services or by the private companies. And what is happening? Why does a part of it go to the

management or managers? I mean, middle and upper [management], but doctors themselves and their assistants, their working conditions have not improved.”

- Interviewee from an international organisation

Based on this evaluation, several interviewees suggested increasing the financial incentives for medical professionals, e.g. through higher salaries or result-based payments<sup>13</sup>. This point also provides a potential explanation for the lack of qualified staff mentioned [above](#).

Another enabling factor mentioned was the new National Health Strategy:

“Its [the new National Health Protection Strategy] implementation will require very close monitoring of the quality. There were some surveys and studies done how efficient this system [...] was, how the payments were done, whether they [...] improved the quality of services or decreased the output payments significantly. It showed that there are a lot of things to be done. That is why this is also one of the priorities within the strategy: all the approaches of the financing services should be adjusted and [made] more efficient.”

- Interviewee from an international organisation

Additionally, one interviewee considered policy-based loans<sup>14</sup> within development cooperation rather than budget support in the health sector an enabling factor to transformative changes.

Some of the aspects brought forward under finance are context-specific to Georgia, especially concerning the financial situation of medical professionals. However, the cluster itself can be summarised as a generalisable category according to literature.

### ***5.3.5 Perception and Prioritisation***

#### *Political will*

A lack of prioritisation of climate change, health and DRM was pointed out by some of the interviewees. One long-term expert for public health indicated: “The primary health care for the previous years was not so much [a priority]. Of course, it was paid, there was a statement that it is a priority. But having in mind that not much from [a] budgetary point of view, and also from the capacity building has been done...”. Although some interviewees did not consider the

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<sup>13</sup> A discussion of the benefits and potential challenges linked to these suggestions would be important to avoid uncritical recommendations. However, this goes beyond the scope of this degree project.

<sup>14</sup> Policy-based loans (PBL) refers to loans that are “disbursed only when the borrower completes policy reforms or actions that have been agreed with” (ADB, 2021).



health sector under-prioritised, previous research confirms an under-prioritising and underfunding of the Georgian health sector that has been associated with a lack of political will (Richardson & Berdzuli, 2017:xviii). The varying impressions may be linked to another barrier brought up and that is the dependence on individual's willingness and prioritisation, especially among politicians and with regards to elective cycles: "So it depends on the individual. It depends on who is in power. It depends on what time [the election cycle] it is. If it is pre-election [or] immediately after the election period."

Linked to this observation was another interviewee's experience regarding the integration of climate change and health care:

"When we developed this project, there was the component of capacity building, a home care team was providing care at home of vulnerable people, older people, to have some trainings on how to manage the health conditions of our clients during heat waves. And it was very interesting for them, because during summer, it's very important to have an on-time reaction and risk communication during heat waves, especially for vulnerable people over 65, with social economic problems."

- Interviewee from an international organisation

The importance of political will and commitment for successful RID is a commonly identified enabling factor (Cissé et al., 2022; Zurich Flood Resilience Alliance, 2021:5; WHO Regional Office for Southeast Asia, 2019:1).

### *Awareness*

Directly linked to political willingness is another barrier that was brought up by most interviewees: a lack of awareness and perceived importance of RID. There was a spectrum of answers ranging from the local to the national level as being most problematic, from a general lack of awareness for certain topics (including: environmental issues, climate change, the linkage of climate change to health, the new understanding of risks, the connection of risks to both climate change and development decisions) to a lack of a broader vision in general.

As one interviewee pointed out:

"If we speak about the public health sector's capacity, the first [thing] we need to underline is that even if the professional staff is there, they don't have much understanding on specific climate change [-related] threats. [...] They don't take this information seriously because they don't have much information on climate change threats and climate change development at all. So that means that to speak with them

about climate change threats and how to manage patients during, for example, heat waves, is a little bit difficult.”

- Interviewee from an international organisation

One interviewee from an international organisation considered seeing the impacts of extreme events in Tbilisi (like the 2015 flooding) as an enabling factor to awareness concerning the importance of RID: “But this last one in Tbilisi triggered some more interest from our government authorities, because they faced it. They were here.”

A lack of awareness was further considered to be directly connected to the communication issues described [above](#): Long and academically written policy documents may be inaccessible or perceived as irrelevant. Other than causing a lack of awareness, this may further lessen the general interest and participation in politics. A lack of trust amongst the local population was also brought up in connection with hydropower projects: As some projects did not work out well in the past, there is a general mistrust in any hydropower projects - uncoupled from the project’s actual quality. Despite ongoing communication efforts from the side of the interviewee’s NGO, trust was difficult to gain and therefore, a barrier.

Despite the high number of barriers with regards to awareness, many interviewees also considered awareness raising on different levels as potential ways forward to make development – generally and with regards to the health sector - more risk-informed. Here, two different levels were mentioned the most: the local level and the national level. On both levels, general awareness-raising, educational activities in cooperation with schools and kindergartens (building on existing initiatives like a UNICEF/RDFG-project to institutionalise DRM-education), and capacity development were considered enabling factors by several interviewees. Thematically, the former activities should focus on risks, climate change and the already acknowledged connection between climate change and health issues. Moreover, the importance of stakeholder participation and inclusion of the local population were stressed as crucial enabling factors to more RID as well as resilience-strengthening. To strengthen the trust of the local population, two interviewees named “local champions”, i.e. so-called focal points, as an important enabling factor and entry point for awareness raising, especially in the mountainous regions and upper villages.

On the national level, continuous advocacy efforts were mentioned as crucial enabling factors. As summarised by one interviewee: “RID should start the implementation on the municipal as well as the central level in synergy, meaning in parallel, considering both sides at the end of the sector.”

The need for micro- and macro-level synergy creation has also been pointed out by the Asian Development Bank (ADB) (2020:36).

Perception, awareness and prioritisation are factors that tend to show up in other contexts. A frequently mentioned connection is drawn between people-centredness, good visualisation of available information on the one hand and better awareness and prioritisation on the other hand (Mayhew et al., 2020:45; Chavda, 2020:1; ADB, 2020:15; Asia Development Bank et al., 2018:12). In this regard, meaningful stakeholder participation and local ownership play a crucial role, too (ADB, 2020:36; Opitz-Stapleton et al., 2019:41; UNDRR, 2019:402).

#### ***5.4 The way ahead***

As of now, some elements of RID approaches exist in Georgia in general and with specific regards to the health sector. However, the potential of mainstreaming DRM and CCA as well as integrating both into development planning and implementation has neither been fully acknowledged nor harnessed.

In summary, a number of barriers and enabling factors were brought forward. Terminology, Knowledge and Capacities, Coordination and Communication, Governance and Policies, Finance as well as Perception and Prioritisation are the main six clusters that emerged from the analysis of the interviews. As pointed out throughout this chapter, all clusters identified exhibit a degree of generalisability that might be transferable to other contexts. Notably, the findings are relatively well aligned with the UNDP's mainstreaming spheres of action for RID (i.e., finance, knowledge, stakeholders, organisation and policy, cf. [figure 6](#)). The main differences arise from a diverging approach to structuring the spheres. The UNDP considers "awareness and education" as part of "knowledge", differentiates between "knowledge" and "organisation" and maps "stakeholders" separately. In contrast, the findings in the context of Georgia suggest a slightly different clustering. However, apart from "risk financing and transfers" under "finance", all entry points listed under the five UNDP spheres show up in this context. In contrast, the ODI's differentiation by risk-informed steps for making development sustainable and resilient (cf. [figure 5](#)) were touched upon as well, although less explicitly. It seems that for integrating RID in Georgia, the UNDP's framework or an adapted version of it might be most sensible as the UNDP publication contains various suggestions for each of the entry points which correspond well with the findings. While this does not constitute a general evaluation of the frameworks in terms of their usefulness for RID, it points towards a higher degree of generalisability.

Looking at the health sector, the findings are limited due to a low participation from within the health sector in this study. Further research is needed to understand the barriers and enabling factors better. However, several policy documents allow additional albeit theoretical insights, especially regarding possible future developments.

The aforementioned 2022-2030 NHPS aims to provide the Georgian population with needs-based high quality healthcare services that allow protection against health risks without financial burdens (MoH, 2022:2). Seven strategic areas are covered to reach the goal: (i) strengthening the healthcare sector governance, (ii) improving the fairness and efficiency of the healthcare financing system, (iii) human resources development in the Healthcare Sector, (iv) ensuring access to high quality, effective and safe medicines and medical-purpose products, (v) strengthening the health management information system, (vi) strengthening healthcare services and improving quality, and (vii) strengthening the public health system to improve readiness and response to public health risks (MoH, 2022:3). Although many interviewees stressed a lack of enforcement and monitoring as a barrier to implementing existing policies and regulations, the areas do cover a lot of other barriers identified. Contrastingly, those interviewees with connections to and expertise concerning the health sector expressed their optimism concerning the NHPS. Thus, the success of the strategy will likely depend on factors such as political willingness, coordination and communication.

Furthermore, strategic documents such as Georgia's 2030 Climate Change Strategy (Mitigation) from 2021, Georgia's Intended Nationally Determined Contributions (from 2017 and 2021), the Fifth National Communication of Georgia under the UNFCCC from 2021, Georgia's Low Emission Development Strategy (LEDS) from 2017 as well as the Georgian Sustainable Development Report from 2021 may indicate further entry points to making the health sector as well as other sectors more risk-informed. They contain several cross-references, e.g. in terms of linking climate change to sustainable development (GoG, 2021a:67,105; Winrock International & USAID, 2017:17), climate change mitigation to DRM (GoG & MENRP, 2017:4-5; GoG, 2021a:32; GoG, 2021b:20), or climate change to human health (GoG & MENRP, 2017:6; GoG, 2021a:33; GoG, 2021b:20; UNFCCC, 2021:44).

Notably absent throughout the interviews was the Socio-Economic Development Strategy of Georgia ("Georgia 2020"). This omission notwithstanding, "Georgia 2020" contains several crucial points from the perspective of RID. The main issues to be resolved including priority intervention measures are shown below in [figure 10](#).

<b>1. Private sector competitiveness</b>
Improving the investment and business environment
Innovation and technologies
Facilitating the growth of exports
Developing infrastructure and fully realizing the country's transit potential
<b>2. Human Capital Development</b>
Developing the country's workforce that meets labor market requirements
Tightening the social security net
Ensuring the accessible and quality health care
<b>3. Access to finance</b>
Mobilization of investments
Development of financial intermediation

10 Main problems and priority intervention measures from the Socio-Economic Development Strategy "Georgia 2020", GoG, 2014:12

Especially human capital development and the suggested priority measures correspond well not only with the NHPS but with the interviewee's evaluations. Furthermore, the following aspects mentioned exhibit potential for integrating RID in the general development activities: (i) higher needs for energy generation linked to energy independence and efficiency (GoG, 2014:33,37), (ii) the importance of considering environmental impacts for infrastructure projects (GoG, 2014:8), (iii) making tertiary education a priority (GoG, 2014:45-46), and (iv) taking an ageing population, i.e. demographic change, into consideration for pension schemes GoG, 2014:49).

These considerations are certainly important for safeguarding and strategically developing the country's economy. However, the following statement illustrates what also became visible throughout the interviews: "The third main principle is based on rational use of natural resources, ensuring environmental safety and sustainability and avoiding natural disasters during the process of economic development." (GoG, 2014:3). Hence, the strategy does not aim to transform business-as-usual through RID, but rather to safeguard ongoing economic development from potential harm. This also becomes visible when examining the main concepts on which the country's economic growth model is based: private sector driven growth, an efficient government, equal opportunities for businesses, state investment policy facilitating growth, free competition and openness to trade (ibid:12).

On a similar note, a more holistic vision in terms of transforming the "default mode" of economic development into a risk-informed and sustainable trajectory was barely discussed

during the interviews either. The only mentioning of such attempts was linked to specific development cooperation programs and projects (cf. [above](#)) rather than to a strategic and governmental level. Subsequently, an additional barrier to integrating RID into the Georgian health sector as well as in general, is a growth-centred development thinking. This, however, is not limited to Georgia but rather a general issue in terms of global economic development.

Nonetheless, predominant framings of RID in the literature imply the need for a more substantial societal transformation through changing priorities (cf. Opitz-Stapleton et al., 2019:19; UNDRR, 2019:72). As visible in the 2022 GAR report, the global need for a more agile and flexible institutional culture has been recognised as a precondition to deal with systemic, complex and interconnected risks (UNDRR, 2022:22). The same applies to the importance of overcoming linear, short-term and fragmented approaches to dealing with risks (ibid:19).

In a related note, the close link between the SDGs and RID should be problematised in terms of inconsistencies and contradictions in the SDGs, “particularly between the socio-economic development and the environmental sustainability goals” (Swain, 2018:341). The transformative potential of RID depends on the context and the stakeholders involved and conflicting interests combined with power dynamics can become barriers to integrating RID (GIZ, 2021:25; Hess et al., 2021:1,11).

Furthermore, RID is framed not only as a guiding principle towards a more resilient and sustainable society, but also as a value-based approach that is “reflective of public opinion” (Mayhew et al., 2020:11), similar to the general understanding of development (cf. Becker, 2014:130; Knutsson, 2009:3,19; Nederveen Pieterse, 2001:2,3). This complicates any decision-making process revolving around RID due to inevitable trade-offs derived from potentially conflicting interests. As pointed out in the latest GAR report, value-driven decision making also requires the existence of metrics to “measure what we value” (UNDRR, 2022:12), referring to data requirements and the subsequent integration in decision-making (cf. [above](#)).

It is therefore no surprise that many authors stress the need for making RID inclusive and transparent (cf. Opitz-Stapleton et al. 2019:34; UNDRR; 2019:418; ADB et al., 2018:14). In a development context this means that underlying problems such as power relations, hidden agendas or potential ethical conflicts will require more than risk-informed decision making to achieve a vision of a more sustainable and resilient society.

Potential pathways may exist that tie together risk-informed decision-making with general (economic) development based on a given country’s context. As described above (cf. [section 4](#)), Georgia as a higher middle-income country in a geographically valuable position with high

biodiversity has the potential to find innovative ways to develop. While this potential has been recognised, the need for inclusive and democratic processes for development decisions may have been prioritised less, as of now.

From this perspective, the role of development cooperation should be closely aligned with the needs and gaps expressed by the local population and partner organisations. Resolving systemic issues (such as competing priorities, lacking financial incentives or economic trajectories) is not the primary mandate of development cooperation, the more as development cooperation itself is part of a global capitalist system. However, there are some potential entry points for development cooperation agencies to support partners on a trajectory towards more RID. First and foremost, development cooperation activities should be harmonised with previous as well as ongoing development activities. Also, they should make sure that a subsequent institutionalisation is pursued. To do so, good cooperation and communication across sectors is inevitable. A better exchange of lessons learnt and enhancing coordination might be possible through better (online and offline) platforms. Here, the role of existing mechanisms such as the DCU in Georgia may be an entry point. The same applies for the exchange and cooperation between the development cooperation sector and other societal spheres such as academic and governmental institutes. While there are practical constraints (such as limited time available), it would clearly be beneficial for enhancing RID. Especially the economic and financial perspective play an important role and should therefore be considered to overcome sectoral fragmentation.

In the words of one interviewee: “We need capacity building, definitely. Then clear mechanism for sustainability and mechanisms also for decision making, and then [we need] coordination”. Moreover, strengthening good governance (e.g. through political participation) and supporting awareness raising for the interconnectedness of DRM, CCA and development are identified enabling factors that can be harnessed through development cooperation. Generally, it can be summarised that a holistic and transformative approach to integrating RID is required that stretches across all spheres and levels of society.

## 6. CONCLUSION

This degree project explored the concept of RID using the Georgian health sector for a case study approach. Four sub-research questions were guiding the degree project:

- (i) How is risk-informed development defined and framed in the current discourse?
- (ii) How do key stakeholders in the health sector in Georgia interpret and apply risk-informed development?
- (iii) What are the problems arising from differences in definitions and framing in a development context?
- (iv) What are the barriers and enabling factors regarding risk-informed development in Georgia?

To answer the first sub-research question, RID as framed in the current discourse was presented based on a scoping of the literature. It was shown that there is neither a commonly used nor widely accepted definition of RID as of now. However, the term is closely linked to an understanding of risks as complex and interlinked, emphasising the reciprocal relationship between risks and development influencing each other. Because of the generic nature of the scoping of literature, this is a finding with general validity.

With regards to the second sub-question, the interviews showed that the term RID is neither well known nor applied in the context of Georgia. Although the interviewees were partly familiar with the concept, only elements of RID are explicitly tackled in current development cooperation in Georgia. Although this finding is linked directly to the case study, triangulation suggests this may be generalisable to other contexts.

With regards to the third sub-question, the degree project has subsequently shown that terminology issues may cause misunderstandings and confusion due to the absence of a universally accepted definition. Moreover, the need for additional conceptual clarifications and the fact that most framings come from international organisations can be criticised as exclusive, top-down and potentially symptomatic of persisting power imbalances. Analogous to the general absence of academic literature concerning RID, this area requires further research. However, the findings are aligned with general issues in development cooperation and therefore potentially generalisable.

Concerning the fourth sub-research question, the interviews suggest six main clusters of barriers and enabling factors to RID: Terminology, Knowledge and Capacities, Coordination and Communication, Governance and Policies, Finance as well as Perception and Prioritisation. The



factors are interlinked and point toward more systemic issues preventing more RID efforts in Georgia. An additional barrier to integrating RID into the Georgian health sector as well as in general, is growth-centred development thinking. The identified barriers and enabling factors when triangulated and aligned with findings from other publications - with the exception of context-specific details - hint toward a generalisable level of the findings of this thesis.

The research design generated clear insights into overall barriers and enabling factors concerning the integration of RID in Georgia and beyond the case study. The triangulation of the case study-specific findings contributed to filling the general knowledge gap in terms of RID and its application.

Other knowledge gaps remain subject for future research. Most importantly, further research should be conducted with regards to the health sector in Georgia, ideally based on the expertise of stakeholders from within the Georgian context. On a more general level, future research should ideally cover an even broader perspective, e.g. by including economic and financial experts. Furthermore, best practices and more insights concerning the implementation of RID have yet to be developed to allow for a better generalisation of the findings.

On a broader perspective, the degree project contributed to the academic discourse on enhancing the integration of CCA and DRR into development with regards to RID as one specific approach. The research project further gave a voice to several development cooperation practitioners in Georgia who took the possibility to express their needs with regards to RID approaches. Furthermore, a contribution to enhancing the understanding of what role RID could play in development cooperation was made and areas for future research were identified.

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# APPENDICES

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## **1) GIDRM project description**

The German Federal Ministry of Economic Cooperation and Development of Germany (BMZ) founded the Global Initiative for Disaster Risk Management (GIDRM) in 2013. The initiative aims to strengthen the German contribution to improving (disaster) risk management globally and to support the implementation of the Sendai Framework for Disaster Risk Reduction.

The current phase of the GIDRM (“GIDRM III”) aims to strengthen RID, i.e., “an understanding of development that considers complex, interdependent, transnational, simultaneous and systemic risks” (GIDRM, n.d.). Specifically, the GIDRM III aims to support regional organisations and initiatives in Southern Africa, Asia and Latin America to strengthen their capacities and skills to harness RID while respecting context-specific fragility factors. The Georgia component of the GIDRM aims to support both the population and critical infrastructures by means of improved risk perception and risk evaluation as well as by preventive measures. In Georgia, health care as one critical infrastructure sector is examined with regard to implementing risk-informed approaches and advised in order to provide the population with long-term access to health care.

## 2) Literature Scoping Methodology

As described in [chapter 2](#), the scoping of literature was guided by a framework brought forward by Arksey and O'Malley in 2005 and by Beerens and Tehler who adapted and adjusted the framework in 2016. The original framework includes the following six steps: (i) identifying the research question, (ii) identifying relevant studies, (iii) study selection, (iv) charting the data, (v) collating, summarising and reporting the results and (vi) optional consultation with stakeholders (Arksey & O'Malley, 2005:8-9). Beerens and Tehler further report on initial scan searches (2016:414). Combined with investigating citations of known and relevant articles, these scan searches provided the researcher with a broadened understanding of the material and terminology. Thereafter, the guiding framework was adapted to suit the purpose in the following way:

### *Step 1 Identification of the research question*

The first sub-question presented in [section 1.1](#) represents the guiding research question for the scoping study: How is risk-informed development defined and framed in current discourse?

### *Step 2 Identification of relevant studies*

This step includes the selection of relevant databases as well as the identification of the search query, i.e., the selection of key words and – if applicable - their synonyms (Beerens & Tehler, 2016:414-415). Both are laid down below.

#### *Step 2.1 Database selection*

Here, Scopus and Web of Science were chosen as they are among the largest databases of peer-reviewed literature, multi-disciplinary and cover a wide range of research fields (Beerens & Tehler, 2016:415). Identified articles were accessible through subscriptions by Lund University. The search was further complemented by Google Scholar and PreventionWeb (as the primary web platform for the disaster risk reduction community, cf. European Commission, n.d.). Grey literature was included because RID is a relatively new concept that has been discussed mostly in grey literature and not yet gained much scientific attention. Grey literature represents an important source to fill existing gaps in academic literature. Therefore, the combination of scientific literature and grey literature is not just enriching, but necessary to answer the first sub-research question. However, there are important downsides to including grey literature, e.g. the searching efficiency and replicability and potential biases of the information found (cf. Adams et al., 2016:7-8). To ensure rigour and credibility of the grey

literature, a number of inclusion and exclusion criteria were developed and applied in step 3; i.e. study selection.

### *Step 2.2 Search Query Identification*

Due to the narrow scope of the research question, the query was kept simple. As the purpose of the scoping is to appraise the framing and definitions of risk-informed development as a specific concept, the initial search string was limited to “risk-informed development”, looking through “theme” and “title” and “abstracts” (Scopus) and “all fields” for Web of Science, PreventionWeb and Google Scholar, respectively. Initially, the search generated a total of 325 results (21 Web of Science, 8 Scopus, 232 Google Scholar and 64 results on PreventionWeb) results. Although this narrow query limited the findings by excluding potentially similar concepts with different names, it represents an important and necessary analytical choice. After careful consideration, the decision was made to not include "climate-resilient development" as a potential synonym for risk-informed development. Firstly, the purpose of the scoping of literature was linked to the framing of the specific term “risk-informed development”, thus, other terms with similar connotation were not part of the research question at hand. Secondly, the Sixth IPCC Assessment report provides a definition of climate resilient development that differs significantly from the framing of RID in the examined literature. The focus is laid on alignment of sustainable development and climate change mitigation and adaptation, whereas risk management is given only indirect consideration as it is considered one out of many approaches to adapting to climate change (IPCC, 2022:6,15). However, future research could look into the conceptual relationship including similarities and differences between RID and similar concepts such as risk-*sensitive* development, climate-smart risk reduction or comprehensive/integrated risk management (UNDRR, 2019:291).

### *Step 3 Study selection*

The third step was the selection of those results that were in line with the pre-defined criteria. The criteria were developed both for academic literature and for grey literature. For academic literature, the following criteria were applied:

#### *Inclusion criteria for academic literature*

1. Inclusion criteria “full text publication available in English”
2. Thematic fit: link to Disaster Risk Management or Climate change adaptation or development

3. Peer review: The Journal in which the article/study was published should be peer reviewed

*Exclusion criteria for academic literature*

1. Non-fulfilment of one or more of the inclusion criteria
2. No framing and/or definition of risk-informed development included

The following criteria were developed for grey literature:

*Inclusion criteria for grey literature*

4. Inclusion criteria “full text publication available in English”
5. Thematic fit: link to Disaster Risk Management or Climate change adaptation or development<sup>15</sup>
6. Proxy measures for quality<sup>16</sup>:
  - a. The authors are stated (not anonymous)
  - b. The study/finding uses academic referencing
  - c. The reference comes from a source with international reputation/authority and with technical knowledge as a yardstick (e.g. international organisations, governmental organisations, consulting organisations/companies)

*Exclusion criteria for grey literature*

3. Non-fulfilment of one or more of the inclusion criteria
4. No framing and/or definition of risk-informed development included

In case there was no clear answer to whether or not a criterion applied, the study or publication of question was considered for further analysis.

The abstracts of all identified studies were read. Where not applicable (e.g. for grey literature), a summary and/or introduction and conclusion was read. Then, the relevant literature was selected based on the criteria listed above. Duplicates were removed (a total of 26 studies). Those documents that were not accessible (e.g. due to their absence through interlibrary loan

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<sup>15</sup> This follows Adams et al. (2016:442) who argue for “fit for purpose” as a main criterion to select adequate grey literature.

<sup>16</sup> See above: a criterion suggested by Adams et al. (2016:442) that was applied to ensure rigor and value of grey literature found.

services) were also removed (a total of ten studies). The application of step 3 resulted in a total of 136 studies that were analysed in depth in step 4. [Figure 1](#) summarises these steps.

#### *Step 4: Charting the data*

This step contained both an overall and an in-depth analysis of the selected literature. No difference was made between grey literature and academic publications from this point because the rigorous selection of grey literature ensured sufficiently high standards. The overall analysis included the scanning of the full texts of the selected literature and led to the exclusion of those sources including no framing or definition of the term “risk-informed development”. As mentioned above, the aim of the literature scoping was to answer the first sub-question of the overall research question. Thus, the subsequent in-depth analysis focused on different definitions and understandings of risk-informed development. The results informed the conceptual understanding of the term risk-informed development as referred to in the research project. Unlike the guiding framework, the decision was made to not analyse the findings by year, region of origin, scientific discipline or source. However, such in-depth scoping has not been conducted for risk-informed development as a concept and would be interesting for future research.

### **3) Cover letter to potential interview partners and their organisations**

Dear [insert name],

I am approaching you from Global Initiative on Disaster Risk Management (GIDRM) project team in GIZ Georgia. Our colleague, an independent consultant, Christine Falta (cc'd here), is conducting research for our project on gaps and barriers existing in integration of risk-informed development in the health sector of Georgia. This research serves as an additional ground for her master's thesis at the University of Lund in the Disaster Risk Management and Climate Change Adaptation Programme.

I am reaching out to inquire if we can organize and interview with your organization for the purpose of the abovementioned research. The purpose of the consultancy is to help fill a knowledge gap concerning barriers and enabling factors to implementing risk-informed development in the Georgian health sector and to produce an entry point analysis to integrating risk-informed development in the health sector using the example of Georgia.

This will be done through a case study approach through a series of semi-structured interviews with relevant stakeholders in the Georgian health sector.

I hope you will be interested in participating in an interview for this research, granting Christine a bit of your time and knowledge based on your experience. We are most interested in talking to health and/ or environmental experts as well as experts overseeing relevant projects or activities.

On a practical note, the interview would take approximately 1 hour.

Ms. Falta will be traveling to Tbilisi from 02.05. to 06.05.2022. If possible, we would like to organize a meeting in person for the interview. If that is not possible, we will be flexible in dates and times for an online interview, during the first two weeks of May. In the case of an online interview, feel free to suggest a suitable time for you.

Attached you may find additional information about the research, and we will be happy to answer any questions.

Further, I would appreciate you forwarding this e-mail to colleagues or other potential interviewees you might know.

Your participation in this interview will be of immense value, therefore we will be looking forward to your positive reply.

Best wishes

Elene Samukashvili & Christine Falta

Christine Falta:  
christinefalta@gmx.de  
(German) phone number/WhatsApp: +49 \*\*\*\*\*60

#### **4) Research project description provided to potential interview partners**

##### **Background**

The project is funded by the German Corporation for International Cooperation (GIZ) and implemented in collaboration with the Global Initiative for Disaster Risk Management (GIDRM), a division of the GIZ. The researcher conducts this research project as an independent consultant for the GIZ and as a part of her master's degree in Disaster Risk Management and Climate Change Adaptation at Lund University, Sweden. The project started in March 2022 and will end in August 2022.

##### **Aim and objectives**

The purpose of this research project is to understand approaches to implementing risk-informed development<sup>17</sup> in the health sector in Georgia. Specifically, the aim is to explore what factors enable or hamper risk-informed development in the Georgian health sector and to identify entry points to integrating risk-informed development in the health sector, using the example of Georgia.

##### **Methods**

The procedure of the research project is a qualitative case study. Data is collected through semi-structured interviews with relevant stakeholders in the Georgian health sector.

I invite you to participate in this research project by participating in a semi-structured interview. The interview will take approximately 60 minutes to complete. It is important to emphasise that neither the overall study nor this interview in particular are in any way an evaluation or carry any value judgement of the organisation, its structure, personnel, or the way it operates.

The purpose is to further our understanding of how your agency frames risk-informed development, what barriers and enabling factors it encounters in its relevant programs and projects where entry points to integrating risk-informed development in the Georgian health sector could be.

##### **Overall value of research**

The people participating in the interviews get the option to express their opinion and help the project contribute to better understand risk-informed development in general. Whilst there are no other immediate benefits for those people participating in the project, it is hoped that the case of Georgia would provide a better understanding on what role risk-informed development could play in development cooperation. The results will be shared with all participants in order to inform their professional work.

Thank you for taking the time to assist me in this endeavour. If you require additional information or have questions, please contact Christine Falta, [ch8816fa-s@student.lu.se](mailto:ch8816fa-s@student.lu.se) or Elene Samukashvili, [Elene.samukashvili@giz.de](mailto:Elene.samukashvili@giz.de)

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<sup>17</sup> Risk-informed development refers to all decision-making processes that consider multiple and simultaneous risks. Such risks may threaten development but may also be caused by development processes. Risk-informed development includes understanding these risks and then acting upon this knowledge. This means risk-informed development requires different sectors and actors to work together. The aim of risk-informed development is to make development more risk-informed and sustainable. Therefore, risk-informed development aims to protect development from potential risks while preventing the creation of risks through development processes.

## 5) Consent-to-participate form

Dear Participant,

The following information is given to you so that you can decide whether you wish to participate in this study: Risk-informed development in the health sector in Georgia. Before you decide whether to participate or not, it is important you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information.

You have been chosen because of your role in your organization and its association with the Georgian health sector as well as development cooperation (projects) operating in the Georgian health sector, especially regarding risk-informed development which the research project aims to explore.

You can keep a copy of this information sheet and indicate your agreement on the consent form. You have the right to withdraw at any time and without giving a reason, and that will not affect your relationship with the German Corporation for International Cooperation (GIZ GmbH) or the researcher.

You will be asked to participate in an interview to explore your perspectives about barriers and enabling factors to risk-informed development in the Georgian health sector. The interview will take approximately 60 minutes and will be audio-recorded only with your consent. If you prefer not to be audio-recorded, the interviewer will take notes instead. Feel free to ask any questions about the study either before or during taking part in the interview.

There are no known risks or inconveniences that are associated with the interviews. The benefits of your participation are the information about your experience and knowledge, and the opportunity to contribute to a field study for the GIZ and for the researcher's master thesis.

Any personal information that I collect about you during the course of the research will be kept strictly safe and confidential. You and your organisation will not be able to be identified in the thesis or case study report without explicit permission being gained from you and your organisation.

Data collected may be shared in an anonymised form to allow reuse by the research team and the GIZ. These anonymised data will not allow any individuals or their agencies to be identified. Results of the research will be published in the form of a case study report and the researcher's master's thesis. The thesis will be publicly available at Lund University Library and shared with you. The case study report will be published by the GIDRM (GIZ). If you wish to be given a copy of any results resulting from the research, please ask us to put you on our circulation list. Please sign the consent with full knowledge of the nature and purpose of the procedures. A copy of this form will be given to you to keep.

Insert your name and affiliation here:



**Participant ID [to be filled by researcher]:**

**Title of Project:** Risk-informed development cooperation in the health sector in Georgia

**Name of interviewer:** Christine Falta

**Location:** Tbilisi, Georgia

<b>Please indicate your consent by ticking the respective boxes on the right</b>	
1. I confirm that I have read and understood the <i>Participant Information Sheet</i> and the <i>Project description</i> provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	
3. I consent:	
• to audio recording	
• to be quoted verbatim with reference to my name and affiliation	
• to be quoted anonymously with no reference to my name or affiliation	
• not to be quoted at all	
4. I understand that my data will be securely stored in line with the Lund University's Data Protection Management Policy.	
5. I agree to take part in the above research project.	

\_\_\_\_\_  
Name of Participant    Date                      Signature

\_\_\_\_\_  
Name of Researcher    Date                      Signature

## 6) Generic interview guide

<b>Date</b>		<b>Time</b>		<b>Place</b>	
<b>Interviewee</b>		<b>Organisation/Sector</b>		<b>Function</b>	
<b>Phone number</b>		<b>E-mail</b>		<b>Interviewer</b>	Christine Falta

**Note:** The following interview guide is intended to support the collection of data using a semi-structured approach to interviews. Given the different type and background of key informants interviewed, the questions can be adapted as suited. Thus, the questions included in the interview guide may be used partly or fully in an adaptable order, depending on the interviewee and the respective context.

## Preparation

- Preparation of the location and setting
- Test of technological devices needed (Functioning? Battery?)
- Check of documents needed:
  - Interview guide
    - Protocol/memo
- Extra paper & pen
- 2 printed consent-to-participate forms per interview
- Printed definitions and clarifications on RID
- Folder

## Introduction

- Time to arrive, small talk
- Thank you for participating in this interview
- Presentation of the interviewer and the research topic
  - In the function of an external consultant for the GIZ, I am investigating on risk-informed development in the health sector in Georgia
  - Show/hand out (again) the description and consent-to-participate form (*see above*)
- Introduction to the structure/process of the interview
  - The interview will take about 60 minutes
  - Participation is voluntary, not financially compensated and they have the right to terminate the interview at any time. When that happens, all data will be discarded and not used.

- Your name will not be included in the thesis unless you agree to that in the consent-to-participate form
- Recording: I would like to record the interview for analysis. The audio will not be shared with anyone (and stored in a manner that guarantees protection of personal data), unless you agree to that.
- After the interviews, the audio files will be complemented by a written record.
- Structure of the interviews: the interviews are semi-structured. That means, that the questions are categorized into thematic blocks (with follow-up questions), although not every question needs to be (or will be) asked
- If any question is not relevant to you or your work or if you do not want to answer, that is perfectly fine. There is no obligation to answer anything. Also, there are no wrong or right answers.

- Questions so far?
- Signing of consent-to-participate form (see above)
- **Inform the participant that the recording starts now -> start recording**

Topic	Questions	Memo	Probes/Questions to keep the conversation flowing
General information	<ul style="list-style-type: none"> <li>• Please describe the main activities/tasks of your organization/sector</li> </ul>		<ul style="list-style-type: none"> <li>• Can you tell me more about this?</li> <li>• Please walk me through that in a bit more detail</li> </ul>

	<ul style="list-style-type: none"> <li>• Please describe your role/function in your organization/sector</li> <li>• Please name ongoing development cooperation projects/activities you are involved in</li> </ul>		<ul style="list-style-type: none"> <li>• Could you elaborate on your last/... point a bit more?</li> </ul>
<p>Definition/ Framing/ Understanding of RID</p> <p><b>RQ3 (part 1)</b> What are <del>the</del> <del>problems arising</del> <del>from</del> <b>differences</b> <b>in definitions</b> <b>and framing</b> in a development context?</p>	<ul style="list-style-type: none"> <li>• Are you familiar with the term “risk-informed development”?</li> <li>• <i>If yes:</i> what is your understanding of RID? How would you define RID?</li> <li>• <i>If not:</i> I would like to provide you with the most common definition based on a literature scoping conducted beforehand.</li> </ul>		<ul style="list-style-type: none"> <li>• Can you tell me more about this?</li> <li>• Please walk me through that in a bit more detail</li> <li>• Could you elaborate on your last/... point a bit more?</li> </ul>

<p>Definition of RID/ Input</p> <p>Framing of RID</p> <p><b>RQ3 (part 2)</b></p> <p>What are the <b>problems</b> arising from differences in definitions and framing in a development context?</p>	<p><i>Risk-informed development refers to all decision-making processes that consider multiple and concurrent risks which may threaten or be caused by development processes. The aim is to make development more risk-informed and sustainable</i></p> <ul style="list-style-type: none"> <li>• <i>If the interviewee was not familiar with RID:</i> What do you think about this definition? Can you think of any problems arising from the way risk-informed development is framed?</li> <li>• <i>If the interviewee was familiar with RID:</i> What differences/similarities do you perceive when comparing your understanding with the definition in literature?</li> </ul>		
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	<p><i>If the interviewee was familiar with RID: Can you think of any problems linked to the (different) understanding/framing?</i></p>		
<p>Now we have talked about your understanding/framing concerning risk-informed development. We have also looked at how the understanding might differ and whether/how that could be problematic.</p> <p>Next, I would like to talk about implementing risk-informed development cooperation projects in Georgia</p>			
<p>Implementation of RID in current (or past) development cooperation projects</p> <p><b>RQ2</b> How do key stakeholders in the health sector in Georgia interpret and apply risk-</p>	<ul style="list-style-type: none"> <li>- Have you participated in development cooperation projects (or other) that were risk-informed?</li> <li>- <i>If yes: Please describe the project, related activities, partners/organisations involved and your role/ your organisation's role in them (steps, spheres of action, processes, stakeholders)</i></li> </ul>		<p>Follow-up questions/probes linked to possible steps:</p> <p><u>Scoping</u></p> <ul style="list-style-type: none"> <li>- Did/does any type of pre-assessment of the problem take place?</li> <li>- Were/Are decision-criteria (such as constraints and/or parameters) applied?</li> </ul> <p><u>Appraisal</u></p> <ul style="list-style-type: none"> <li>- Were/are risk assessments conducted? (Complex risks? What threats? Exposure and vulnerabilities? Initial M&amp;E?)</li> </ul>

<p>informed development?</p>	<ul style="list-style-type: none"> <li>- <i>If no:</i> Do you (think you) already integrate risk-informed development in your project? (If so, how?)</li> <li>- <i>If yes:</i> Please describe... <ul style="list-style-type: none"> <li>• the project</li> <li>• related activities</li> <li>• your role/your organisation's role in them</li> <li>• partners/organisations involved (their role)</li> </ul> </li> <li>- <i>If no:</i> What would risk informed development approaches in projects change or add to your organisation's work?</li> </ul>		<ul style="list-style-type: none"> <li>- Were/are risks evaluated (for seriousness)? And need for action?</li> </ul> <p><u>Decision-making</u></p> <ul style="list-style-type: none"> <li>- Based on the previous steps, were/are development options assessed (resilience/trade-offs)?</li> <li>- Did/does implementation happen based on the assessments?</li> </ul> <p><u>Risk management</u> (reduce, avoid, transfer, accept)</p> <ul style="list-style-type: none"> <li>- Did/do M&amp;E systems exist? Is feedback/are learnings shared?</li> </ul>
<p>Processes</p>	<ul style="list-style-type: none"> <li>- Are there any (general) processes/activities that you or your organisation are/is</li> </ul>		<ul style="list-style-type: none"> <li>• Risk assessments?</li> <li>• Project management/approval (Organisation)</li> </ul>



	<p>involved in that are linked to risk-informed development/in the health sector?</p> <ul style="list-style-type: none"> <li>- <i>If yes:</i> Which ones?</li> <li>- <i>If yes:</i> Do you think they could be more risk-informed? If so, how? <ul style="list-style-type: none"> <li>- <i>If no:</i> In your opinion, is there any process that could be more risk-informed? If so, how?</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li>• Finance? <ul style="list-style-type: none"> <li>○ Budgeting</li> <li>○ Investments</li> <li>○ Risk financing/transfers</li> <li>○ Resource mobilization</li> </ul> </li> <li>• Rules/laws/policies <ul style="list-style-type: none"> <li>○ Legislation/regulations</li> <li>○ Standards</li> <li>○ Policies, strategy &amp; planning</li> <li>○ Leadership &amp; advocacy</li> </ul> </li> <li>• Knowledge <ul style="list-style-type: none"> <li>○ Research &amp; knowledge</li> <li>○ Awareness &amp; education</li> <li>○ M&amp;E, compliance, reporting</li> <li>○ Assessment &amp; analysis</li> </ul> </li> <li>• Stakeholders (involvement of...) <ul style="list-style-type: none"> <li>○ Government</li> <li>○ Civil society</li> <li>○ Partnerships</li> <li>○ Private sector</li> </ul> </li> <li>• Organisation <ul style="list-style-type: none"> <li>○ Coordination &amp; responsibilities</li> <li>○ procedures, tools &amp; management</li> </ul> </li> </ul>
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			<ul style="list-style-type: none"> <li>○ Capacity</li> <li>○ Programmes and projects</li> </ul>
Interdependencies	<ul style="list-style-type: none"> <li>- What type of interdependencies with other (critical infrastructure) sectors can you think of concerning the health sector in Georgia?</li> <li>- Are you involved in activities/projects linked to the health sector and (min. one) other critical infrastructure sectors?</li> <li>- Which critical infrastructure sectors does your work depend upon?</li> <li>- Which critical infrastructure sectors depend on your work?</li> </ul> <p>(Make sure “interdependency” is clear: Interdependence is the condition of a group of people or</p>		<p>Probes:</p> <p>What about the...</p> <ul style="list-style-type: none"> <li>● Water</li> <li>● Energy</li> <li>● Nutrition/food supply</li> <li>● Transport</li> <li>● Telecommunication/IT</li> <li>● Finance/Insurance</li> <li>● Waste management</li> </ul> <p>What about indirect/secondary impacts?</p> <p><u>Types of interdependencies</u></p> <ul style="list-style-type: none"> <li>● <b>Functional</b>, e.g. hospitals dependence on power supply or IT systems, railway on power supply, etc.</li> <li>● <b>Geographical</b>, e.g. bridges with co-location of transportation, water and electricity</li> <li>● <b>Logical</b>, e.g. increased utilization of telecom during disasters or people</li> </ul>

	<p>things that all depend on each other. Here, it means the dependence of one critical sector on another, e.g.: you need electricity to be able to use the technology with access to the internet/telecommunication)</p> <p><u>Interdependencies types:</u></p> <ul style="list-style-type: none"> <li>• functional</li> <li>• logical</li> <li>• geographical</li> <li>• and/or cyber-dependent</li> </ul> <p><u>Strengths:</u></p> <ul style="list-style-type: none"> <li>• temporal</li> <li>• magnitude of impacts</li> </ul>		<p>changing transport modes when one infrastructure is affected (e.g. Railway x Road)</p> <ul style="list-style-type: none"> <li>• <b>Cyber dependencies</b> among infrastructure assets characterise the connections at control levels relating to the transfer of information or data.</li> </ul> <p><u>Strength of a dependency</u></p> <ul style="list-style-type: none"> <li>• Temporal aspects: How does the dependency change over time? What is most critical for different length of disruptions, c.f. Water and Telecom and a four-day disruption. Available buffers?</li> <li>• Magnitude of impact: What consequences arise when losing what the infrastructure is dependent upon?</li> </ul>
Evaluation/ Assessment of ongoing/past	<i>For interviewees with actual experience concerning risk-</i>		For specific phases/steps of projects:

<p>projects concerning RID</p>	<p><i>informed development cooperation projects:</i></p> <ul style="list-style-type: none"> <li>- Please describe– in your opinion – how the project went/goes: What worked/works well? What did not work/ does not work well?</li> </ul> <p>Please tell me more concerning your project’s/organisation’s approach to:</p> <ul style="list-style-type: none"> <li>- Scoping</li> <li>- Appraisal</li> <li>- Decision-making</li> <li>- Risk management</li> </ul>		<p><u>Scoping</u></p> <ul style="list-style-type: none"> <li>- Did/does any type of pre-assessment of the problem take place?</li> <li>- Were/Are decision-criteria (such as constraints and/or parameters) applied?</li> </ul> <p><u>Appraisal</u></p> <ul style="list-style-type: none"> <li>- Were/are risk assessments conducted? (Complex risks? What threats? Exposure and vulnerabilities? Initial M&amp;E?)</li> <li>- Were/are risks evaluated (for seriousness)? And need for action?</li> </ul> <p><u>Decision-making</u></p> <ul style="list-style-type: none"> <li>- Based on the previous steps, were/are development options assessed (resilience/trade-offs)?</li> <li>- Did/does implementation happen based on the assessments?</li> </ul>
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			<p><u>Risk management</u> (reduce, avoid, transfer, accept)</p> <ul style="list-style-type: none"> <li>• Did/do M&amp;E systems exist?</li> <li>• Is feedback/are learnings shared?</li> </ul> <p>General follow-ups/probes:</p> <ul style="list-style-type: none"> <li>- And why would you say that was?</li> <li>- Do you think your assessment of the project (positive/negative) is linked to RID (absence/presence)?</li> </ul>
<p>Inject: After having talked about the implementation of risk-informed development concerning your position/organisation, I would like to dive deeper into those factors, that were (or could be) a potential barrier or a so-called enabling factor to risk-informed development in the Georgian health sector.</p>			
<p>Barriers and enabling factors to RID</p> <p><b>RQ4</b> What are the <b>barriers</b> and enabling factors</p>	<p>What do you think is hindering/problematic when aiming to make development cooperation in the health sector in Georgia more risk-informed?</p> <p>Steps or dimension, otherwise wait for interviewee</p>		<p>Probes concerning <b>steps</b>:</p> <p>Anything that comes to your mind linked to:</p> <ul style="list-style-type: none"> <li>- Scoping or context analysis</li> <li>- Risk appraisal/risk assessment</li> <li>- Evaluation of options, decision-making, and implementation</li> <li>- Monitoring and evaluation</li> <li>- Communication and iteration?</li> </ul> <p>Probes concerning <b>spheres</b></p>

<p>to risk-informed development in Georgia?</p>	<ul style="list-style-type: none"> <li>• <b>Knowledge:</b> joint data collection, risk assessments, research, knowledge and M&amp;E covering all hazards are regularly carried out to inform development decision-making</li> <li>• <b>Policy:</b> DRR and CCA legislation, policies and plans are better linked; ideally included in new or updated development legislation, policies and plans, with joint and cohesive implementation</li> <li>• <b>Finance:</b> joint expenditure analysis, budgeting, funding and risk financing opportunities for both DRR/CCA are established to more explicitly allocate and monitor resources for more cohesive DRR/CCA as part of overall national financing for development</li> </ul>		<p>Anything that comes to your mind linked to...</p> <p>potential spheres:</p> <ul style="list-style-type: none"> <li>- Policy and law</li> <li>- Organization,</li> <li>- Stakeholders</li> <li>- Knowledge</li> <li>- Finance?</li> </ul>
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	<ul style="list-style-type: none"> <li>• <b>Capacity:</b> joint capacity is available for both DRR and CCA focal points in key development ministries (e.g. planning, finance, sectors) and at the subnational level, in-house identification of opportunities for mainstreaming (e.g. development policies, planning and implementation) are allowed; there is a high level of coordination on poverty/DRR/CCA with clearly defined joint roles, responsibilities, procedures, tools, programmes and projects within the development sphere</li> <li>• <b>Stakeholders:</b> development practitioners take the lead to mainstream from within the development sphere, with</li> </ul>		
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	<p>technical DRM/CCA practitioners providing guidance (rather than leading these separate issues)</p>		
<p>Solutions/ Recommendations</p> <p><b>RQ4</b> What are the barriers and <b>enabling factors</b> to risk-informed development in Georgia? &amp; Recommendations</p>	<ul style="list-style-type: none"> <li>• In your opinion, what can be done/changed/improved concerning the application of RID in development cooperation projects in the health sector in Georgia?</li> <li>• Are there other stakeholders that should be included? Who?</li> <li>• Are there any processes you would change? Which? How?</li> <li>• Are there any laws or policies you think should change?</li> </ul>		





sector (in Georgia)?			
Closure	<ul style="list-style-type: none"> <li>• This was the last question, thank you very much for your participation.</li> <li>• Are there any questions you would like to ask me?</li> <li>• I will transcribe the recorded interview and create a written record of the interview. If you would like to receive these, please let me know via e-mail until 15.05.2022.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<p>If time is short and/or important questions remain unanswered:</p> <p>Would you be available for a follow-up session/second conversation?</p>
<b>Post interview</b>			
- Write down general impressions, including descriptions of the settings, the impression of the participant, other observations			

## **7) Rationale for the interview guide**

The interview guide includes three main sections (introduction, interview questions, wrap-up/conclusion) with the main part being structured in four columns: (i) topic (and link to the respective research question), (ii) actual questions for the interview, (iii) “memo” (space for taking notes) and iv) probes/follow-ups, where necessary (adapted from Gerson & Damaske, 2021:76; Vogt & Werner, 2014:25-26,33 and Kvale, 2007:62). The questions are structured in thematic blocks, each of which including nested questions and possible probes (Gerson & Damaske, 2021:87,114). The structure aims to follow a logical flow, starting with easy questions to enable a trustful and positive setting and subsequently moving on to more in-depth/evaluative questions with the objective to make the interviewees feel more at ease (Vogt & Werner, 2014:31). Broadly, the guide aims to allow for a balance between flexibility and structure (Gerson & Damaske, 2021:68). To enable quick navigation between the questions and to facilitate the interview, the guide includes different follow-up questions depending on whether a participant answered with “yes” or “no” to the previous questions.

Content-wise, the questions and probes are closely linked to the research questions, the framework provided by Opitz-Stapleton et al., 2019 (adapted from IRGC’s Risk Governance Framework) and the UNDP’s spheres of action as well as the WHO Operational Framework for building climate resilient health systems and the WHO Health Emergency and Disaster Risk Management Framework (cf. [section 3](#)). The questions are straightforward as the interviewees were expected to be conducted with experts in their field (cf. Döringer 2016:266). Thus, there is chosen proximity of the questions asked to the actual research questions (which are in fact listed under the thematic block).

The questions are formulated clearly, in simple language and direct as possible with no closed questions (with “yes” or “no” as answers), including only invitations to talk and open-ended questions. All questions are formulated as neutral as possible with no judgemental and/or leading questions (cf. Gerson & Damaske, 2021:77,79; Vogt & Werner, 2014:28-30). The structure of the interview guide is clear and visually neat (Vogt & Werner, 2014:33).

## 18) A changing understanding of risks

As mentioned above (cf. [section 3.1](#)) *risks* are defined as “the combination of probability of an event and its negative consequences” (UNISDR, 2009:25). The United Nations Office for Disaster Risk Reduction (UNDRR) and the International Science Council (ISC) presents the following conceptualisations of *hazards, vulnerability and exposure*:

*Hazard*: “A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation” (UNDRR & ISC, 2020:53).

*Exposure*: “The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas” (UNDRR & ISC, 2020:55).

*Vulnerability*: “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 & ISC, 2020:55).

However, this rather narrow framing of risks has shifted. The 21st century is characterised by several, unprecedented challenges that humanity faces. According to the UNDRR, the human civilization has turned into a “super-organism” that – by inducing new hazards and changing the environment from which it evolved - finds itself confronted with dynamic and non-linear changes that can lead to unforeseen, cascading consequences (UNDRR, 2019:iv). Because of their interconnected and complex nature, these changes are often related to path-dependencies, difficult if not impossible to anticipate, and have increasingly become systemic (UNDRR, 2019:54; Becker, 2014:258). Climate change impacts and risks are no exemption: increasingly complex and difficult to manage, they may occur simultaneously and result in compounding or cascading risks (IPCC, 2022:18). Moreover, responses to climate change can create new impacts and risks with yet different potential impacts (IPCC, 2022:19).

Consequently, the impacts of climate change and changing risk environments are threatening development progress where development gains are not resilient to shocks (Flood Resilience, 2021; UNDP, 2020a:8; WB & GFDRR, 2018:1). At the same time, non-resilient and non-sustainable development can lead to social, political, economic, and environmental conditions that increase vulnerability to the impacts of different risks (Opitz-Stapleton et al., 2019:11).

Among the most significant of these risks are global economic and financial instability; transnational organized crime and terrorism; severe environmental change including climate and oceanic change; cyber fragility and technological disruption; geopolitical volatility; and

growing antibiotic resistance and pandemics (Saja et al., 2021:234; Opitz-Stapleton et al., 2019:12; UNDRR; 2019:40,50). The SFDRR further distinguishes between so-called underlying risk drivers (the consequences of poverty and inequality, climate change and variability, unplanned and rapid urbanisation, poor land management) and compounding factors<sup>18</sup> (demographic change, weak institutional arrangements, non-risk-informed policies, lack of regulation and incentives for private disaster risk reduction investment, complex supply chains, limited availability of technology, unsustainable uses of natural resources, declining ecosystems, pandemics and epidemics (Annex II pmb1.6).

However, the current approaches to manage risks are ill-equipped to successfully manage these type of risks (Ranger et al., 2021: 1375,1379; Rieger, 2021:14; Opitz-Stapleton et al., 2019:9; Wetterwald & Kjaergaard, 2016:90, Wilkinson et al., 2016:10). As introduced above, risk is traditionally defined as the pairing of probability and severity of adverse effects (Aven, 2013:136). Assessing the likelihood and the consequences of scenarios is operationalized in various ways (Tehler, 2020:59), expressed as frequencies or probabilities and usually built on historical data, expert judgements and/or computational models (Coppola, 2011:140,152-153). Typically, consequences are expressed as effects on humans, built structures, and the environment with deaths/fatalities, injuries, and damages being the factors assessed (Coppola, 2011:141). The severity of the consequences depends not only on the hazard itself but also on the vulnerability. This narrow and probability-focused perspective has the explicit goal to describe risk as objectively as possible (Tehler, 2020:44), and therefore has been questioned (cf. Pescaroli & Alexander, 2018:2).

In a broader sense, risks are considered as the “uncertainty about and severity of the events and consequences of an activity with respect to something that humans value” (SRA, 2018:4). Probabilities are recognized as only one possible way to describe uncertainty about future events (Aven, 2013:142). Nevertheless, current approaches to risk management often continue to pursue a hazard-by-hazard approach, ignoring systemic interactions and failing to provide a comprehensive management of risks (Rieger, 2021:14; Opitz-Stapleton et al., 2019:9; UNDRR, 2019:38). Especially concerning climate change-related risks, historical data and extractions from the past will not suffice to assess future climate-change induced and -related risks, much less the potentially triggered catastrophic cascading impacts (UNDRR, 2019:55; Zscheischler et al., 2018:470; Becker, 2014:149).

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<sup>18</sup> For a comprehensive review differentiating between compound, interconnected, interacting and cascading risks, cf. Pescaroli & Alexander, 2018.

According to this shifting understanding of risks, risk management should be based on knowledge of systems including their interdependencies and decision-makers should understand these underlying systemic interactions and risk drivers to build societal resilience and enable sustainable development (Costa, 2021:40-41; UN ESCAP, 2020:26; Sardi et al., 2019:603; UNDRR, 2019:40; Opitz-Stapleton et al., 2017:20; Gupta et al., 2016:37). A joint publication by the International Science Council (ISC), UNDRR and the IRDR (Integrated Research on Disaster Risk) provides further insights into systemic risks as well as opportunities for research, policy and practice (ISC, UNDRR & IRDR, 2021). By making all types of risks (including climate risks) part of development decisions, the creation of new risks can be prevented; underlying vulnerabilities tackled, climate change adaptation supported – and ideally, opportunities arising from changes can be harnessed (Issar, 2020:32; UNDP, 2020a:9, Opitz-Stapleton et al., 2019:19,33). This is where risk-informed development gains momentum.

### **9) The development-CCA-DRM-nexus: International agreements**

Currently, three major yet separate agreements shape policy and implementation strategies at the global level for climate change, disaster risk reduction (DRR) and development: the Paris Agreement; the Sendai Framework for Disaster Risk Reduction and the Agenda 2030. A comprehensive analysis concerning their coherence would go beyond the scope of this section<sup>19</sup>. However, the search for coherence between these frameworks has contributed strongly to the increasing attention paid to risk-informed development: most publications found via the literature scoping were published after 2015<sup>20</sup>. Therefore, the emergence of risk-informed development shall be examined in the light of these global agreements.

The three post-2015 agreements all include elements of resilience and DRR in their scope (UNDRR, 2019:29-30; Paris Agreement, Article 7; SFDRR, Art. IV., 20 cl.4). Building societal resilience is a shared objective by (sustainable) development, CCA and DRM (GIZ, 2021:4; Yumagulova & Vertinsky, 2021:2; UNDP, 2020a:10; Abe et al., 2019:2). These frameworks represent an opportunity to consider many risks simultaneously and to break up silo-thinking – as long as they are considered together (GIZ, 2021:25; Issar, 2020:33; UNDP, 2020a:10; Gupta

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<sup>19</sup> For more information concerning the coherence between the three global frameworks, cf. the Global Assessment Report on Disaster Risk Reduction (GAR) 2019 (pp. 25ff), Issar (2020:33-34), and GIZ (2021).

<sup>20</sup> From the 136 publications analysed, only eight were published before 2015 and four had no year of publication. Of these, none was considered for the in-depth analysis.

et al., 2016:37). According to the UNDRR, they are “mutually dependent in achieving their objectives”, namely risk-informed sustainable development (2019:31).

The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 reflects the aforementioned shift of understanding risk and reflects the perceived need for a transformation of growth and development, holistic risk management and the consideration and understanding of underlying risk factors (UNDRR, 2019:28). In fact, the SFDRR states that sustainable development needs to be risk-informed and address so-called underlying risk factors through both plans, programs and policies and private and public investments on all administrative levels and concerning all sectors of society (UNDRR, 2019:339). This perspective has been mirrored by several other post-2015 publications (GIZ, 2021:4; UNDP, 2020a:8,10; ADB, 2020:viii,3; McCullough et al., 2019:68; Srivastava et al., 2018:107). Subsequently, risk-informed development is considered one of the guiding principles of the SDGs (Issar, 2020:33). Opitz-Stapleton et al. (2019:32) even go as far as to state that a more risk-informed approach to development is required to successfully implement not only the Agenda 2030, but also the Paris Agreement, the Sendai Framework and the New Deal. This has been visualised by Opitz-Stapleton et al. (2019:39, cf. [figure 11](#)) who integrate the three frameworks into a nested model similar to representations of sustainability as nested circles (cf. Gallopín, Herrero & Rocuts, 2014:308). For more information concerning the coherence between the three global frameworks, cf. the Global Assessment Report on Disaster Risk Reduction (GAR) (2019), Issar (2020), and GIZ (2021).



Source: © The authors, drawing from the frameworks.

11 Nested model of the development – climate change -adaptation – disaster risk management-nexus, Opitz-Stapleton et al., 2019:39



## 10) Result of literature scoping: Publications sorted by academic and grey literature

	<b>Academic (including books, conference papers and Master theses)</b>	<b>Grey Literature</b>
<b>Number of publications</b>	52	84
<b>Total</b>	136	

## 11) Case study: Georgia

### *Geography*

Georgia is a country located in the south-eastern part of Europe, positioned between the Great Caucasus mountains in the north and the Black and Caspian Seas in the south (MEPA, 2019:8; UNDP, 2014:10). The country is a direct neighbour to Russia (in the North), Turkey (South-west), Armenia (South) and Azerbaijan (South-East) (Chanturidze et al., 2009:1). Georgia's geography is characterised by a broad variety ranging from mountains to lowland plains and from glaciers to semi-deserts with almost all climate zones being represented (MEPA, 2021:20; MEPA, 2019:8). Forests cover roughly 40% of the country's territory and more than 54% of the country is located at an altitude above 1,000m (MENRP, 2015:17). The Lesser Caucasus Mountains in the south and the higher Greater Caucasus Mountain Range in the North are caused by the collision of the Arabian and Eurasian Plates with the latter one exhibiting an active thrust belt (Gaprindashvili & Westen, 2016:72). Further, the Likhi Range not only divides the country by west and east but represents a climatic division, too: While the Western part is characterised by humid and subtropical climate, the East is drier with subtropical lowlands and Alpine Mountain regions (MEPA, 2019:8; Gaprindashvili & Van Westen, 2016:72).

In 2020, there were 3.7 million inhabitants (World Bank, 2021; GoG, 2021b:40). Georgia exhibits one of the highest total fertility rates in Europe (2.1 in 2018, cf. UNFPA, 2021:2). However, the country has been confronted with negative population growth rates since 1990, caused by emigration and declining birth rates (MEPA, 2019:17; Bertelsmann Stiftung, 2018:28). Around 0.75 million Georgians, i.e. about 16% of the total population, emigrated since 1992 (Richardson & Berdzuli, 2017:2). 32% of the population are under the age of 24 and 15% are over 65 (UNFPA, 2021:2). More than half of the population lives in urban areas, mostly in the capital, Tbilisi (MEPA, 2021:40; MEPA, 2019:17). The life expectancy in

Georgia is currently at 73.3 years at birth (World Bank, 2021) and as of 2020, Georgia is ranks 61<sup>st</sup> with an overall score of 0.812 in the Human Development Index (HDI) (UNDP, 2020b).

### *Politics*

Georgia is a parliamentary, representative democratic republic with a multi-party system in which the President of Georgia functions as the head of state and the Prime Minister as the head of government (Freedom House, 2021; BPB, 2020). The country is divided into nine regions and two autonomous republics, Adjara and Abkhazia (Gaprindashvili, 2011:4).

The country underwent a significant change of the political, legal, administrative and economic system after the collapse of the former Soviet Union in April 1991 and the subsequent independence of Georgia (MEPA, 2019:15; Chanturidze et al., 2009:5). Due to this disruption accompanied by an increase of energy prices, Georgia faced severe difficulties in the energy sector, leading to the collapse of the industrial sector in the 1990s (MEPA, 2019:15; Bertelsmann Stiftung, 2020:4). Moreover, the 1990s were characterised by a civil war with the separatist regions of Abkhazia and South Ossetia (Bertelsmann Stiftung, 2020:28). In 2008, a brief war broke out between Georgia and South Ossetia, in which Russia intervened in support of South Ossetia (BBC, 2021). According to UNHCR, these conflicts resulted in roughly 288,000 Internally Displaced Persons (IDPs) (UNHCR, 2021). Further, roughly 3,000 refugees and asylum-seekers (most of them from Iraq, Iran, the Ukraine, the Russian Federation and Egypt) as well as roughly 500 stateless persons were reported (UNHCR, 2021). Politically, the country has established stable relations with the neighbouring countries in the west, south and east, whereas the relationship with Russia remains tense due to the separatist territories Abkhazia and South Ossetia (Bertelsmann Stiftung, 2018:4; Chanturidze et al., 2009:2) and most recently due to Russian invasion in Ukraine (Beard, 2022). The country is generally closely aligned to the Western world, holding strong relations with the USA, NATO and the EU (BBC, 2021). The geographic position further makes the country a strategic crossroad for Europe and Asia. As mentioned above, the country signed the EU Georgia Association Agreement in 2014, offering alignment with standards and principles of the EU and a possible window of opportunity for transformative political changes (Bertelsmann Stiftung, 2018:28). However, an “operational gap” in implementing the necessary reforms has been observed (European Commission, 2021; Bertelsmann Stiftung, 2020:31). Amidst the Russian invasion in Ukraine in February 2022, Georgia has joined Ukraine along with Moldova in formally applying for EU membership after “overwhelming public protests” (Beard, 2022).

Despite the country holding regular and competitive elections, Georgia has recently experienced regressions concerning democracy: According to the Freedom House Index,

Georgia (excl. Abkhazia and South Ossetia) is categorised as “partly free” (60/100), mainly due to oligarchic influence (linked to the billionaire Bidsina Ivanishvili, founder of the Georgian Dream Party and former Prime Minister) on political affairs, decision-making, and media environment (Freedom House, 2021). In October 2020, the parliamentary elections were won for the third time by the ruling Georgian Dream, although the elections were accompanied by vote buying and partly violent turbulences and with only 26% voter participation, i.e. the lowest since independence (Freedom House, 2021). The country ranks 45<sup>th</sup> out of 180 countries on the Corruption Perceptions Index 2021 (Transparency International, 2021).

The Georgian constitution guarantees freedom of religion, however religious minorities (especially Muslims, Jehovah’s Witnesses, Baptists and Pentecostals) have been subject to hostility and discrimination. Reportedly, the powerful Georgian Orthodox Church that enjoys protection and unique privileges<sup>21</sup> from the state played a role in these discriminatory acts (Freedom House, 2021).

### *Economy*

Ever since the early 1990s, Georgia has faced economic reforms aiming at a transition towards a market economy (GoG, 2021b:15; MEPA, 2019:15). Georgia was recently moved from being classified as a lower-middle income country to an upper middle-income country (SSDGS, ICG & AGoG, 2020:39). During the pre-COVID period, Georgia exhibited a steady annual growth rate of 5% from 2005 to 2019 (World Bank, 2021; GoG, 2021b:15). As of December 2021, the economy grew faster than expected and the GDP returned to pre-COVID levels reaching 15.846 billion USD in 2020 (World Bank, 2021). The Georgian government has adopted a general debt management strategy (2019-2021), however, during the COVID-19 crisis, the net external debt of Georgia grew significantly, reaching 11.6 billion GEL (71.3% of the GDP) as of 30 September 2020 (AGoG’s PPGCD, 2021:10) with an inflation rate of 7.3% (World Bank, 2021). The country’s currency is the Georgian Lari (GEL).

The key sectors of Georgia’s economy are industry, trade, construction, transport and communication, and agriculture (including forestry and fishing) (MEPA, 2019:17). Despite the growing economy, a high share of employment opportunities is still in agriculture and the informal sector (World Bank, 2021). However, the country aims to transform towards the service sectors, mainly through the tourism sector that grew steadily with annual growth rates

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<sup>21</sup> The Georgian constitution explicitly grants the Orthodox church a special role (Boden, 2018:162). Due to an agreement from the year 2000, the church draws circa 10 million Euro from the national budget annually (Boden, 2018:162).

of 10% from 2015-2019 (SSDGS, ICG & AGoG, 2020:40) Although economic inequality, poverty and unemployment are still areas of concern, the country has made significant improvements in the last decade (MEPA, 2019:16; Bertelsmann Stiftung, 2018:16,24; Richardson & Berdzuli, 2017:4).

However, COVID-19 had a significant economic impact on the country, especially concerning the tourism sector (SSDGS, ICG & AGoG, 2020:49). As of 2021, unemployment remained high (at 22%) compared to 17.3% in 2019 (World Bank, 2021). Projections expect pandemic-related higher poverty levels to fall back to pre-crisis levels by 2022 (World Bank, 2021). In 2020, 46.6% of the Georgian population earned less than \$5,50 a day (World Bank, 2021).

## **12) Risk Landscape in Georgia**

Georgia is confronted with various types of risks, both natural and man-made. Earthquakes, landslides, floods and storms represent potential hazards although their occurrence depends on the location and climatic zone of the country (MEPA, 2019:7). Subsequently, significant threats to human development and various sectors of the economy arise (UNDP, 2014:6); making the country one of the most affected mountainous regions in the world (Chelidze et al., 2021 a:430). Due to the exposure and susceptibility of settlements, buildings, roads, oil and gas pipelines and high voltage power lines to the manifold hazards, the potential for disaster risks and subsequent losses of life and property is high (Gaprindashvili et al., 2021:265).

Climate change is expected to influence the Georgian risk landscape in the future. The country's Third and Fourth National Communications to the UNFCCC provide an extensive overview of climate change trends and projections as well as potential impacts on key sectors. Moreover, the IPCC's Sixth Assessment report includes a chapter concerning observed and projected climate change impacts on a regional level, including Georgia as a part of West Asia (Shaw et al., 2022). In short, Georgia has already and will continue to experience increasing annual temperatures on the whole territory (MENRP, 2015:15). Moreover, the occurrence of extreme natural hazards is expected to increase in Georgia (UNDP, 2014:10). Other than extreme temperatures, these hazards include changes in precipitation patterns as well as more intense flood risks, flash floods, landslides and mudflows (MEPA, 2019:7; GoG & MENRP, 2017:5). Further, reduced water availability, forest fires, droughts, increasing occurrence of hot days, pests and diseases, erosion of agricultural land, sea level rise and shrinkage of glaciers have been identified as climate-change related risks (MEPA, 2019:7; GoG & MENRP, 2017:5).

### *Potential health impacts*

Broadly, the potential impacts of risks in Georgia may affect human life and health, critical infrastructure (including health facilities such as hospitals) as well as other valuable assets (Gaprindashvili et al., 2021:265). Direct effects on health include injuries of all kinds, the loss of life and mental disorders/trauma (MENRP, 2015:164).

However, some health impacts may result from indirect effects<sup>22</sup>. For example, outbreaks of infectious diseases linked to flooding as well as flood-related damages to the water supply system are possible (WB & ADB, 2021:23). Further, hazards such as landslides/mudslides/avalanches or seismic hazards can destroy health facilities, cause interruption to the delivery of health systems (due to loss or overburdening of staff/services) and negatively affect other critical functions needed to deal with health impacts throughout and after emergencies or disasters (WHO, 2019:2,14). The health sector depends on other sectors for a functioning health system (WHO, 2019:15). If the transport sector, the telecommunication sector, electricity supply as well as the aforementioned water supply (i.e. critical societal functions) were impacted by any given hazard, the health sector could be impaired, or even interrupted (WHO, 2019:11).

Two examples with potentially catastrophic impacts in Georgia are the Enguri Hydroelectric Facility (susceptible to geo- and (hydro)meteorological hazards) as well as the natural oil and gas transportation and pipeline corridor running through seismically active zones of Georgia (Chelidze et al., 2021b:185; Mariotto et al., 2021:242-243). Moreover, the Enguri Hydroelectric facility is located at the border between Abkhazia (cf. [figure 8](#)) and Georgia. On the one hand, the shared maintenance and use of energy can be considered a role model for future rapprochement (Boden, 2018:75). On the other hand, this creates further risks linked to the relationship between Georgia, Abkhazia and Russia, especially in the light of the recent Russian invasion of Ukraine. In a similar manner, the pipelines are of strategic importance in terms of consolidating Georgia's connection to the West (Boden, 2018:150-151). At the same time, Georgia still depends on Russia in terms of electricity generation and distribution (Boden, 2018:150-151). In winter 2006, a leak occurred for unknown reasons in the stream providing both Georgia and Armenia with Russian gas which led to a diplomatic flare-up between Russia and Georgia (Boden, 2018:113; Chivers, 2006). Therefore, both the Enguri dam and the gas and oil transportation corridors and pipelines are susceptible to both accidental and intentional

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<sup>22</sup> The WHO differentiates between direct, and indirect impacts on health systems, whereas mediated impacts can be socially mediated or mediated through environmental systems (WHO, 2015:2).

disruptions with severe direct and indirect health impacts as likely consequences. With regards to this dependency on energy imports, however, the Georgian government has passed legislation to reform the energy sector in order to utilise local renewable energy resources (AGOG's PPGCD, 2021:17).

Similarly, man-made hazards such as biological/chemical hazards, environmental degradation, terrorism/violent conflict, cyber fragility/technological disruption or (global) economic and financial stability may translate into or directly cause health impacts.

As of 2021, negative impacts related to climate change have already been observed both globally (cf. IPCC, 2022: 9-11) and in Georgia (MEPA, 2021:30-31). Health impacts due to cascading and compounding risks such as extreme weather events have been observed in all inhabited regions (Cissé et al., 2022:3). Human health and well-being, coping capacities and response infrastructures are already severely affected and the number of socially, economically and/or psychologically vulnerable groups is increasing globally (Shaw et al., 2022:14).

Concerning future climate change projections, significant future impact on human health, healthcare and social security systems are expected in Georgia (MEPA, 2021:37; GoG, 2021b:33). The sixth IPCC Assessment reports differentiates between four dimensions of climate-change related impact in health and well-being, namely (i) infectious diseases, (ii) heat, malnutrition and other, (iii) mental health and (iv) displacement (IPCC, 2022:9).

Negative impacts on the health and well-being of Georgian citizens are expected to occur due to heat waves, disasters linked to natural hazards and a changing environment of infectious diseases (World Bank & ADB, 2021:23; MEPA, 2021:44,309). Especially the high share of the Georgian population suffering from cardiovascular and respiratory diseases will further be affected negatively due to heatwaves (MEPA, 2021:19; WB & ADB, 2021:23). Cascading effects such as reduced labour productivity and a subsequent reduction of the GDP may occur, too (Cissé et. al., 2022:67). However, the expected impacts are not evenly distributed but depend on the respective local conditions (including exposure, vulnerability and adaptive capacity) and on the type of manifestation of climate change (MENRP, 2015:17-18).

Moreover, impacts on key infrastructure (with potential health consequences) are expected to increase with climate change due to higher susceptibility to damage (under unchanged design standards) (IPCC, 2022:12-13). Especially settlements and key infrastructure exposed to high temperatures, along coastlines and with high vulnerabilities will be affected and subsequently face maintenance and reconstruction costs for buildings, transportation and energy (IPCC, 2022:15). Further, the latest communication to the UNFCCC by the GoG states:

Given the current economic progress and the climate change trend, in 2030-2050 we should annually expect an additional 250,000 deaths due to climate change. Of these 38,000 deaths (mainly in the elderly population) will be associated with heatwaves, 48,000 may be caused by diarrhoea, and 60,000 – by malaria, while 95,000 may be linked to a nutritional deficiency in children, which is also associated with negative impacts of climate change” (GoG, 2021b:309)

### *Vulnerabilities of the Georgian population*

Generally, persistent health challenges and few financial resources are associated with higher levels of vulnerability and less means to cope with (disaster) risks (Kuran et al., 2020:5). Therefore, high unemployment rates and a generally insecure economic situation in Georgia further exacerbate the general susceptibility to various hazards, especially because of the high out-of-pocket spending described above. As pointed out above, persistently low vaccination rates concerning the COVID-19 pandemic represent another vulnerability-increasing factor (World Bank, 2021). However, vulnerability is dynamic and intersectional<sup>23</sup> and an in-depth vulnerability analysis would go beyond the scope of this degree project<sup>24</sup>.

Nonetheless, several population groups have been identified to be especially vulnerable to the impacts of (disaster) risks in Georgia. Among these are marginalised groups and discriminated groups such as religious minorities (e.g. Muslims and Jehovah’s witnesses), Georgians living in poverty, IDPs resulting from the violent conflicts in the 1990s and the 2008 Georgian-Russian conflict (roughly 288,000 IDPs as of 2021, cf. UNHCR, 2021). Moreover, many Georgian mountain villages face virtual isolation from the country in winter due to their geographic position and poorly developed transportation infrastructure, resulting in higher levels of vulnerability (cf. Gaprindashvili & Van Westen, 2016:72). Concerning climate change-specific vulnerabilities in Georgia, the IPCC explicitly names children, adolescents

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<sup>23</sup> According to De Silva, intersectionality “refers to an approach that foregrounds how the experiences of individuals and groups are shaped by multiple axes of difference such as, inter alia, gender, race, age, sexuality, disability, class, ethnicity, and religion. The simultaneous influence of these social identities can lead to opportunities, constraints, and oppressive experiences that shift according to a given situation. Intersectionality approaches critique analyses of social identities that focus on a single axis of difference; it attends to the mutually constitutive nature of multiple identities instead. Intersectionality was conceived through black feminists’ work that drew attention to the simultaneity of racist and sexist oppressions. Presently, the approach has been transplanted to diverse academic contexts and mainstream debates” (De Silva, 2020:397).

<sup>24</sup> Further information concerning other vulnerability-increasing factors such as social networks and (individual) ability to cope with stress would be necessary for a comprehensive vulnerability assessment reflecting dynamics and intersectional factors (cf. Kuran et al., 2020:5).

(particularly girls), elderly people and those with existing mental, physical and/or medical challenges as those most vulnerable to climate change impacts (Cissé et al., 2022:6). Similarly, the updated version of Georgia`s Nationally Determined Contributions (NDCs) explicitly mentions children, adolescents, elderly persons, women, eco-migrants (displaced persons due to actual or potential climate disasters), people with disabilities and those with chronic diseases as “the most vulnerable population groups” in need of “urgent adaptation measures” (GoG, 2021:11<sup>25</sup>). Further, people living in poverty will be susceptible to volatile food prices (WB & ADB, 2021:22). Despite the urban-rural divide in Georgia including a dominance of health services and facilities in the capital (Richardson & Berdzuli, 2017:xvi), the so-called urban heat island effect (UHI) is expected to put the capital at higher risk due to a high population density and an ageing population (World Bank & ADB, 2021:23).

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<sup>25</sup> There are no recent numbers concerning institutions for people with disabilities. However, a WHO report from 2017 reports that in 2016, four overcrowded state institutions were hosting 205 people (Richardson & Berdzuli, 2017:63). Clearly, such precarious conditions increase the vulnerability of the residents towards any risks.