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Title: **Running waters: barriers to urban disaster risk management and climate change adaptation in Hargeisa, Somaliland**

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Summary

This thesis aims at understanding what is hindering the city of Hargeisa from effectively dealing with floods and droughts. The country is strongly reliant on natural resources and rainfall for livestock and agriculture activities but climate change impacts are compounding the existing problems of lack of development and weak, under-resourced institutions. In an arid environment already prone to extreme climate events and temperatures, measures for disaster risk management can go hand in hand with adaptation to climate change, as also explicitly recognised by national policies. In 2007 a decentralised and multilevel national authority for disaster preparedness was established by law. However, its lowest level has so far not been implemented, and the district disaster management committees (DDMCs) remained only on paper. As the UN recently launched a project for creating a DDMC in Hargeisa, it is of crucial importance to understand how barriers, their interactions and the relations among the different levels of the DRM governance system affect the implementation of DDMC as a measure of DRM and adaptation to climate change. The literature on governance frameworks and barriers to local planned adaptation support the efforts towards understanding not only which barriers occur, but also their origin and the influence that actors can have on them, considering their position in time and on the jurisdictional scale.

The single case study research methods include fieldwork, semi-structured interviews and a qualitative secondary data research on Somaliland's DRM and adaptation governance situation. Respondents are all local actors directly involved in the governance of DRM of Somaliland, from international, national and urban level governmental institutions and NGOs. Informants are local experts in public administration, academics and experienced development practitioners rooted in Hargeisa.

In line with literature, institutional deficits are found to be crucial obstacles to the implementation of this adaptation and DRM measure, in addition to those arising from constrained human, financial and information resources that affect all levels of the governance system in their interplay. Limited awareness among stakeholders and decision-makers, a dysfunctional and fuzzy distribution of political and administrative competences and little vertical and horizontal coordination strongly affect the adaptation process's costs, resources, efficiency and incentives to implement the action.

Mayor findings acknowledge that the barriers to effective adaptation to climate change in Hargeisa are systemic in terms of their origin. The wide majority of problems stems from either the human-environmental system of concern of floods and droughts management or from the wider governance and socio-economic context rather than from specific behaviour of the actors of local governance. In fact, more than half of the barriers are located above the jurisdictional sphere of competence of urban institutional stakeholders, mostly belong to the recent past. For this reason, international aid has the potential to play a big role in Hargeisa not only because of its additional resources, but especially because it can address the institutional disconnection between the national and urban levels of the governance system for droughts and flood management that is currently cause and effect of the occurring barrier dynamics.

In current conditions in fact, changes in urban disaster management can occur only if the whole governance system for DRM and not only actors of a single level address the barriers. This implies a need for upper levels in pushing decentralisation not as 'passing the buck' but as creating a more smooth structure for all actors, including the local government ones, to be empowered to act at their level and contribute to DRM for the city of Hargeisa.

Keywords

Climate change adaptation; Disaster Risk Management; Governance; Barriers; Somaliland

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Col kaa badan iyo biyo kaa badanba way ku hafiyaan.

You will be drowned by two things: plenty of water and plenty of enemies

(Somali proverb)

Abbreviations

CC	Climate Change
DDMC	District Disaster Management Committee
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
FAO	Food and Agriculture Organisation
FAOSWALIM	FAO- Somalia Water and Land Information Management
FSNAU	Food Security and Nutrition Analysis Unit
HLC	Hargeisa Local Council
HWA	Hargeisa Water Agency
IHS	Institute for Housing and Urban Development
JPLG	UN Joint Programme for Local Governance
MOERD	Ministry of Environment and Rural Development
MOP	Ministry of Planning and Development
NAPA	National Action Programme for Adaptation
NERAD	National Environment Research and Disaster Preparedness Agency
SDF	Somaliland Development Fund
NGO	Non Governmental Organisation
UNDP	United Nations Development Programme
UN-HABITAT	United Nations Human Settlement Programme
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs

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Chapter 1: Introduction

Among the epistemic community it is no longer questionable to assert that climate change is a reality. Its impacts on the social and environmental system are already visible, hence demanding increased attention to policies and actions that aim at adapting society to the uncertain climatic conditions that await. In the arid lands of Somaliland, high mean temperatures and water scarcity already are a traditional problem. Furthermore, an increase in the frequency and severity of future climate extreme events like droughts and flash floods is expected in the future of the Horn of Africa (IPCC 2007, 2012; NAPA, 2013).
Given the current socio-environmental conditions in Hargeisa, addressing the risk of disasters such as droughts and floods can also mean increasing adaptation to climate change. In order to develop sustainably, adaptation measures can be enacted by institutions to increase resilience and contribute to reducing vulnerability (Adger 2006; Miller et al. 2010; Engle 2011; Tyler and Moench 2012). Adaptation is linked to Disaster Risk Management by the common goal of reducing the impacts of extreme events and increasing resilience to disasters, as argued in a wide literature (Paton and Johnston 2006; Schipper and Pelling 2006; O'Brien et al. 2006; Klinke et al. 2011; Solecki et al 2011). This perspective is also integrated in the internationally standardised process for the formulation of national adaptation programmes of action, as also occurred for Somalia, under which the UN position Somaliland's institutions.
Given the urgency of the commonly perceived threats posed by climate change, after the Policy of Disaster Risk Management, Somaliland has taken part to the broad Mogadishu-based consultation process towards the creation in 2013 of the National Adaptation Action Plan (NAPA), with procedures following the guidelines set out by the UNFCCC in decision 28/CP.7. The ministry of Environment is mentioned as the implementing partner for Somaliland. Droughts and floods emerged during the community consultations as the most threatening impacts of climate change, as the major underlying cause of poverty and as the leading hazard faced by all zones of the country, hence the focus of the NAPA on adaptation to these types of natural hazards. Droughts, floods and natural disasters were one of the sectors through which the NAPA tried to observe vulnerability as a function of exposure, sensitivity and adaptive capacity in the country. The need of integrating climate change impacts in all development policies is explicit, together with the connection between disaster management and climate change impacts, but the need to redistribute capacities and resources for the implementation at all levels is not clearly addressed (NAPA 2013).

In the case of Somaliland, national policy for disaster management in 2007 confirmed the Presidential initiative of 4 years before to set the structure of the National environment research and disaster preparedness authority (NERAD) to work with other ministries and actors on the issue. The policy includes the description of NERAD's branches at the district level, District Disaster Management Committees (DDMCs), as composed by community volunteers, which should interact with local government authorities and the upper levels of NERAD on disaster preparedness issues and plans. This will include training of DDMCs in disaster risk reduction and climate adaptation and supporting them in the creation of the training material aimed at the local CBOs, which will be also trained in DRM and early warnings. The DDMCs will develop locally owned plans to address the identified Climate Change (CC) and natural risks with CC projections and scenarios. UNDP will also assist the DDMCs and CBOs in establishing a transparent and accountable resilience fund, to be co-financed by contributions and district budgets, to be used to finance operation and maintenance costs for community-based infrastructure and disaster preparedness measures. The DDMCs will also be responsible for stockpiling emergency supplies and disseminating early warnings to the village level. These committees would also aim at ensuring linkages and communication systems between the local, district level with the regional and national offices at the NERAD. They would be hence clearly located in the national hierarchy that albeit already structured throughout all levels has a weak capacity and little resources. International involvement through aid for the implementation of policies

for community adaptive capacity affects the institutions of the local level both in terms of capacity for adaptation to climate change impacts and in terms of their multi-level governance dynamics. With the cooperation between UNDP and the local community, the international organisation will be redistributing resources and capacities across levels of a scale. However, given the scarcity of funds, both for Somaliland in general and for the specific topic of disaster risk management in the city, and a long series of factors, these were never implemented.

In line with an abundant scholarship on urban adaptation (Wilbanks et al. 2007; Carmin et al. 2009; Corfee-Morlot et al. 2009; Moser 2009; Birkmann et al. 2010) we shall analyse those factors hindering the governance of droughts and floods among the institutions for the city of Hargeisa. Commonly in fact, the research on adaptation is focused on those actors involved in the governance of adaptation responses (Moser and Ekstrom 2012). In the context of a developing country –who if considered as a national state, would rank 4th lowest GDP pro capita of the continent (WB, 2013) – the lack of resources for development and socio-economic context strongly dependent on the direct use of natural resources on natural resources puts mounting pressure on the institutions. Hence, this research aims at understanding what are the barriers in the eyes of those governance actors directly involved in DRM for Hargeisa.

Especially in developing countries, governments and institutions are in the position to guide towards more sustainability and development and support those structures that enable an effective use of resources (Chen and He 2013). Hence we here focus on those barriers that are hindering the institutional capacity for the city in the governance of floods and droughts. Barriers and constraints to adaptation are increasingly observed and examined as impediments to adaptation (Moser and Ekstrom, 2010; Biesbroek et al., 2013). For this reason, this study looks at the urban governance of disasters among the mandated institutions for Somaliland and aims at identifying which barriers hinder it, how they affect it and why these barriers emerge. As Moser and Ekstrom do (2010, 2012), we can use their framework to go beyond the mere formulation of a list of problems. Their work shows the possibility of tracing the barriers back to which structural element has generated them: either to people's behaviours, or to the human-environmental system of concern for urban disaster risk management -thereby including also the mandated institution system and their policies- or to the wider governance system socio-political context. Aiming at the explanation of what is hindering the governance system and, beyond that, working in the direction of overcoming barriers, Moser and Ekstrom analyse the scales of influence on barriers. As the capacity of an actor to overcome a problem depends not only on his capacities but also on the source of the problem, these authors underline how barriers vary in their positions on the jurisdictional and the temporal scales. These provide a good lens to describe when and who can attempt at altering barriers, depending on how close to the urban actors the origin of barriers and assist in considering the roles played by actors at other levels of the jurisdictional scale of the governance system.

In April 2015, in fact, the United Nations Development Programme officially launched the 'Environment and Energy Programme for Somalia', once again including thereby Somaliland in Somalia. Among this programme's components, one is specifically dedicated to implementing a DDMC in Hargeisa District as a measure of increasing community resilience, through trainings of community volunteers by an environmental NGO. Several international aid agencies and non-governmental organisations are already involved in the wider governance process of disaster risk management and adaptation for the country as a whole but the implementation of such a project has not started yet at the time of the fieldwork.
Despite our focus is hence not on the involvement of international cooperation as a mean to alleviate barriers to urban adaptation to climate change, as it is too early for its involvement to be shaped, we still will use elements from the framework by Oberlack and Eisenack (2014). Their work allows observing the positive and negative effects barriers and aids can have on the costs, resource use and incentives in the process towards adaptation to climate change in cities and hence on the implementation of DDMCs as a measure of disaster risk management and adaptation to climate change.

Figure 1 Somalia, Somaliland and Puntland. (Source: Hoehne, 2015)

Background

Somaliland –which covers the northern area of the Horn of Africa facing the Gulf of Aden– has an estimated population of about 3.5 million, of which 45% live in urban centres and 25% is nomadic, for an area of 137600 km2 with 850 km of coast (UNPO, 2008). However, its borders are far from clearly defined and accepted.

Somaliland declared its independence from Somalia in May 1991. The latter had spiralled into a state of constant and spread civil war that has since then crushed the development opportunities of its people. Almost a decade of civil war was needed to oust the military regime but the 90s were followed by clan contrasts and warlordism, which have made stabilisation and peaceful reconciliation dialogue process impossible. Unsurprisingly, Somalia has been the par excellence example of failed, weak, collapsed state. In contrast to this context, Somaliland has managed to emerge as a peaceful and democratic authority and exercise legitimate power in its territory, creating a de facto state built on both traditional authorities and democratic elections. Through this structure Somaliland was able to maintain law and order and collect fiscal resources, albeit below the half of the average of Sub-Saharan African states, a relatively accepted currency and a Central Bank.

However, the international community has still not recognised Somaliland as an independent sovereign state for political reasons of regional convenience and not to threaten the Mogadishu-based process of state-building (Renders and Terlinden 2010) to which Somaliland has in fact not participated. In Mogadishu –which legally still counts as national capital city of Somalia – regional military interventions have created an ad-hoc political space for a Federal Government of Somalia (FGS) ending in 2012 the series of "transitional" governments but producing a weak government in a struggling fight for power over territory with opposing militant groups like Al-Shabaab. However, due to its international non-state status and to the prioritized role of Mogadishu, Somaliland is limited in its access to international resources as it is considered an autonomous region of Somalia, even if it can enjoy a less informal and more stable economy, especially in its urban centres (African Development Bank Group 2014). Nonetheless, Somaliland is still to be considered a poor and fragile country.

Its estimates for per capita GDP would make it the fourth last of the world bank rankings, whereas the UN Statistical division reports the GDP of Somalia as a whole as much lower than the 347 US$ estimated by the World Bank in Somaliland. However, statistical estimates differ as the African Development Bank group estimated for 2010 a GDP procapita of 600 US$ for Somalia as a whole. Service provision and infrastructure are still strongly deficient and reliant on private sector, community self-organisation, NGOs, UN agencies and international development partners (DFID 2012). The heritage of the civil war is still visible not only in the institutions' lack of capacity but also in the urban patterns –where settlements emerged when no planning or effective administration was in place to ensure adequate services and infrastructures. An example of this is the low percentage of households (about one-fifth) having access to tap water in their homes, whereas the others rely on water deliverers or public kiosks (King 2003). Water scarcity is already a recognised problem and infrastructures in the city are generally inadequate. (UNHABITAT, 2010).
Somaliland's arid and semi-arid lands are typically prone to extreme weather conditions such as high mean surface temperatures, periods of extended drought, highly erratic rainfall and strong winds. The models for the Horn of Africa forecast increasing temperatures and increasing variation of rainfall patterns away from the known seasonal scheme (Niang, Ruppel et al. 2014). Agriculture and livestock, together with underground water, being here dependent on rainfall, feel the impact of the unpredictability of weather patterns and the increasing recurrence of droughts. Traditionally, in fact, Somaliland's whole economy strongly relies on its natural resources. Livestock, which is the biggest source of income for the country as its production contributes to 60% of the GDP and about 85% of the foreign export earnings (Somaliland Ministry of Finance 2013). Even the attempt of diversification would be hampered as the impacts would reach the rain-fed farming sector, which accounts for 90% of the total agricultural output. In other terms, the ecosystem services of Somaliland have hence a crucial use value (Carpenter et al. 2006), but there is no kind of infrastructure to protect it.

The institutions appear to be aware of their role for environmental protection, however, the national legal framework for the issues is weak and only ad-hoc and general policies on environment and disaster risk management have been issued (ADBG, 2013). The policies do not go to the depth of detail required for smooth operationalization and implementation: besides the Somaliland Vision 2030 document, the Somaliland National Development Plan (2012-2016) highlights Environment as one of the five pillars and discusses the concerns emerged from the consultation of various stakeholders: scarcity of water resources, soil erosion, loss of biodiversity and natural resource depletion. Despite generally recognising the crucial role of local government this document fails to detail the way climate change issues will be addressed, nor it allocates any budget for adaptation activities (Somaliland Government, 2012).
Somaliland regions and districts have the constitutional right to develop their own development agenda but often lack in capacities and resources. Even at higher levels, both the MERD and the Ministry of Planning and Development, the coordinator of the national over-all development, suffer from a fundamental lack of technical and financial resource capacities to analyse, plan for and manage the impacts of climate change (UNDP 2013).
Hence, Somaliland planned specific adaptation to climate change activities to be implemented with the funding from the Global Environment Facility (GEF); UNDP supported an Environment Sector Coordination Platform with an agenda on challenges including disaster response and institutional mapping of organisations with activities for environment and energy improvements. UNDP is working on enhancing capacity for improved disaster risks mitigation of the Somaliland institutions, in partnership with NERAD. This body suffers from a serious gap in staff, infrastructure and technological capacities both with specific regards to the topic of climate change impacts and in particular with regard to disasters such as droughts and floods.
Besides the difficulty posed by the scarcity of official reporting on Somaliland, the peaceful setting of the country is an important strength, which however is not enough to counterbalance the backlog in development that hampers the economy and the institutions of the country, limiting their chances of effectively tackling climate change adaptation.

Problem statement

In addition to the already harsh development challenges, the vulnerability brought about by climate change threatens to worsen the situation, as in the case of many in east African cities (Kithiia 2011). The impacts of climate change are widening the scope of vulnerability and compounding the already existing problems of the lack of development and human security. Environment in Somaliland and in Hargeisa is being destroyed at alarming rate and poor land-use planning and deforestation are combined with urbanization and desertification. This keeps resulting in loss of soil, which in turn worsens droughts, further lowering the water resources available and lowering the ability to respond to extreme weather events or slow onset hazards. Furthermore, as the country's economy is strongly based on livestock and rain-fed agriculture, the direct use of natural resources is crucial for the accumulation of resources but also in extreme danger because of climate change's impact.

To cope with these threats, there are no district or community level disaster management capacities and, unsurprisingly, local government is in need of assistance, hampered by inefficiencies, clan pressure, corruption and tight budgets. The lack of awareness, of institutional coordination and effectiveness, the presence of other priorities and a series of limits on financial means are affecting the implementation of urban DRM measures such as the DDMCs. The interaction between UNDP and the Somaliland governance system for disasters bring international funding to the table but could also well affect the local adaptation capacity. Nonetheless, building local community capacity at district level would necessarily reverberate on the national government institutions in charge at the same level. Nonetheless, given the initial stages to which UNDP is involved in urban DRM in Hargeisa, we will look at the DDMCs as a measure for local adaptation to climate change carried out through international funding. Furthermore, the effect of this cooperation across the different levels of the jurisdictional scale in the case of an unrecognised state such as Somaliland is unknown. The political

stability of Hargeisa has positively contributed to development, but *per se* it is not able to offset the lack of human, physical and financial capitals available for the implementation of disaster risk management in the city of Hargeisa. As highlighted by studies of local NGO Candlelight and by the Somaliland Disaster Risk Management Capacity Needs Assessment carried out by the MERD, the population and the institutions have extremely limited adaptation capacities to prepare for climate extremes such as the already recurring droughts and floods (Hartmann et alia 2009).

Research objective

In light of the extremely scarce literature available on Somaliland, the thesis will have to gather information on how the governance system for disaster risk management is structured, with which actors, roles, interests and resources. We aim here at understanding what has prevented the governance system from an effective disaster risk management for the case of the city of Hargeisa. We aim at understanding what are the specific problems that are being faced in the process of implementing DDMC both in light of the implementation gap left from the 2007 NERAD policy, and in light of the recent engagement of UNDP with urban DRM in Hargeisa. Comprehending the dynamics behind the issues that limit DRM at the urban level requires however a deeper analysis of the barrier's origin and their effects on the costs, incentives and resources that actors have access to for urban DRM. In order to go beyond the mere description of problems and build towards an requires understanding of the potential scale of influence that local governance actors and stakeholders have on the causes of barriers,

Research questions

1. What is hindering the implementation of urban Disaster Risk Management as part of the process of adaptation to climate change in the city of Hargeisa?

    1.1. How is the governance of urban Disaster Risk Management structured in Hargeisa?

    1.2. Which barriers are affecting Disaster Risk Management at city level and why are they occurring?

    1.3. What are the influences of barriers on the implementation process of District Disaster Management Committees as a measure of urban disaster risk management and adaptation to climate change?

Significance, scope and limitations

In light of the case of Hargeisa, understanding what problems hinder the implementation of actions of disaster risk management and climate change adaptation by the institutions of the city adds to the literature on barriers to urban climate change adaptation and to the literature on Somaliland's institutions for environmental issues. Identifying which barriers prevented the autonomous implementation of local DRM would meet the scholarship on the need to "improve understanding of what builds adaptive capacity and/or functions as barriers or limits to adaptation through more systematic empirical evaluations (Lemos et al. 2011). However, this research could provide useful insights to those the actors involved in the governance of disaster risk management of the city, to

overcome the obstacles in the process of implementing adaptation to climate change. Analysing the origin of barriers through the framework by Moser and Ekstrom (2010) would contribute both to the international and local policy-makers future capacity of avoiding barrier legacies in Somaliland and to the wider scholarship on Climate Change adaptation barriers (Adger et al. 2009; Engle 2011). Furthermore, given the relevant involvement of international and non-state actors in the provision of services and in policy-making in Somaliland in general, such an analysis could shed light on how institutions at one decision-making level interact with capacity development implementation at another and which processes affect the resources, costs and incentives for adaptive or maladaptive behaviours. The analysis of incentives and barriers brought about by international cooperation and non-state actors like UNDP represents a field with need for further research (Barnett 2008; Oberlack and Eisenack 2013; Blackburn 2014). Furthermore, as the fragile scenario of Somaliland's statehood denotes a specific context in need of particular attention to power dynamics, this analysis proves useful in shedding light on the political content of the scales structured in this governance system (Brown and Purcell 2005; Lawhon and Patel 2013).
Official development assistance can be seen as a phenomenon of redistribution between the global North and the South. For this reason it understandably raises issues of justice and responsibility, which in order to be deeply tackled would however require a considerably bigger amount of time, resources and access to decision-making at the highest levels. This topic remains hence aside of our scope, as in the case of disaster risk management the actual involvement of international cooperation is still in the process of being defined.

Our choice to focus on the local, urban actors is not in name of a presupposed moral fit of the local as a scale level closer to implementation, but rather as one among the most vulnerable actors involved, and one with a crucial role in perspectives of good governance, state fragility and human development. On the other hand, as will be clear in the next chapter, all actors interact in the adaptation process and the numerous and relevant relations that involve the Local Council of Hargeisa require a place in the analysis for a clear explanation of how the UNDP's project can affect the environmental governance of Hargeisa.

A further limitation of this study regards the evaluation of the adaptive capacity of the Local Council. Given the constrained time and the lack of detailed information on Hargeisa local government, we cannot attempt at giving an evaluation of its adaptive capacity. Hence, we shall maintain and action-centred approach, using the task of the implementation of DDMCs to orientate the evaluation of barriers and their effects. With a qualitative in-depth research we aim at observing those issues specifically preventing the implementation of DDMCs as a measure that assists Hargeisa in the process of planned adaptation to climate change.

Chapter 2: Theory

As Somaliland is already experiencing the adverse impacts of climate change, variability and extremes, the city of Hargeisa as an institution and as a community needs to ensure that its system can prevent and moderate the potential damages, to cope with consequences and take advantage of the opportunities for a stronger, more sustainable development. More uncertainty in rainfall patterns will come with a more unpredictable pattern as a result of climate change in the Horn of Africa (Schreck and Semazzi 2004). Their impact will hit hard on this society, which is strongly dependent on environmental resources and suffers from the difficulties of little wealth, partial isolation and poor organisation in case of disasters. For this reason we shall address topics of adaptation and adaptive capacity, in their relation to disaster risk management and development and re-tracing some theoretical passages relevant to Somaliland's case.

Adaptation and disasters

As it is scientifically proven that even if we stopped emitting today, we still would have to face altered impacts of the climate, it is unsurprising how the concept of a*daptation* is becoming more and more known and used in the academic world and outside (Pielke et al. 2007; Brooks et al. 2011; Engle 2011; Eakin et al. 2014). The fifth and latest assessment of the IPCC, defines adaptation as the process of adjusting to actual or expected climate and its effects. It also specifies how in human systems, it seeks to moderate or avoid destruction or exploit beneficial opportunities. It highlights how in some natural systems, human interventions that aim at adaptation can facilitate adjustments to the expected climate and its effects. (2014).
With its multi-disciplinary origins, adaptation has spread in the climate change discourse since more than a decade, and has been theoretically embedded in discourses of sustainability, resilience and vulnerability (Engle 2011; Adger 2006; Miller et al. 2010; Tyler and Moench 2012). In the vulnerability literature, it is presented together with exposure and sensitivity to hazards as factors composing vulnerability, where all of them are seen to be highly context specific (Kelly and Adger 2000; Brooks et al. 2005). For example, adaptation can be characterised depending on its timing as reactive or anticipatory, if it takes place after or before the impacts of climate change. Depending on the spontaneity of adaptation, it has been labelled as autonomous– as triggered by ecological changes in natural systems and by market or welfare changes in human systems – or planned/ institutional – which is the result of a deliberate policy decision. There are also increasing perspectives on integrating adaptation with mitigation (Landauer et al. 2015) but not without conflicts and critiques (Hamin and Gurran 2009). Adaptation can target specific kinds of threats, like droughts, floods, fires, or can be focused on who is actually adapting, if individual households, communities or institutions (Smit et al. 2000). Adaptation can tend to focus on current climate hazards and has hence been criticised for not always incorporating longer timescales in which uncertainty and risk could produce unexpected transformative changes to which current practises would not allow effective adaptation (Brooks et al. 2011). The same critique is made against existing disaster response strategies, as an argument for the need of integration between discourses of disaster risk management and climate change (Solecki et al 2011).

Disasters are becoming more intricate and uncertain due to the complex interactions between climate change and increasing populations, poorly planned urbanisation processes and economic development, environmental degradation (UNEP 2007; UNISDR 2011; WEF 2012). Whereas meanwhile, increasing population and urbanisation have led to a higher density of population in risky areas, while increasing economic development has increased economic and population exposure to disasters (World Bank and United Nations 2010; Djalante et al. 2013). There is a strong rationale for considering issues of local disaster management structures implementation in their relation to the adaptation to climate change at the urban level of Hargeisa. Disaster risk reduction and climate

change are more and more seen as normatively connected by academics involved in humanitarian assistance, in disaster risk management (DRM) and in climate change literature. It is recognised as crucial for disaster risk reduction that local governments engage in a meaningful way with citizens and that the importance of interactions between local governments and national governments is recognised. Risk is in fact created by processes that take place at local, city-regional, national and global scales and in order to reach a comprehensive risk reduction, activities must also take place at different levels (Adger 2001; Bulkeley 2005; Corfee-Morlot et al. 2011; Dodman et al. 2013). Scholars such as Paton and Johnston (2006), O'Brien and others (2006), Klinke and others (2011) have examined and advocated for more integrated approaches to DRR. Calls to increase system adaptiveness within the DRR literature are much more recent and most are theoretical and normative in nature (e.g. Tompkins et al. 2008; Wamsler and Lawson 2011 in: Djalante et al. 2013). Disaster risk management and adaptation are linked by the common goal of reducing the impacts of extreme events and increasing urban resilience to disasters. The climatic uncertainty brought about by climate change affects DRM possibility of relying on past experience and knowledge to enhance resilience and the increasing exposure due to urbanisation in LDC on coastal areas generates effects for both the implementation of Climate Change Adaptation (CCA) and DRM (Schipper and Pelling 2006; Solecki et al 2011). DRR is said to provide valuable lessons in relation to extreme events whereas adaptation and transformation are seen as more appropriate to address slow-onset changes in addition to the political ecologies of exposure (Birkmann and von Teichman 2010; Simon 2010; Adelekan et al 2015).

In order to find the most context-suitable ways to integrate CCA and DRR, Djalante and others have based a framework on the connection between resilience, adaptation, disaster risk reduction and adaptive governance (2013). The latter is meant as governance that is more flexible and innovative and that encourages learning to better deal with uncertainties and system complexities (Dietz et al.2003; Brunner et al. 2005; Folke et al. 2005). This concept originates from three areas: adaptive management (Holling 1978; Lee 1993), cooperative management (Olsson et al. 2004) and collaborative governance (Holley et al. 2011; Ostrom 1990, 2000). They also illustrated pathways to strengthen the two principles of integration and adaptiveness as basis of the concept of Adaptive Integrated Disaster Resilience (AIDR). After reviewing numerous ways in which theory has attempted to integrate the abovementioned concepts, they defined AIDR as the capacity of communities or nations to build resilience to disasters in an integrated, systematic and adaptive manner, by developing institutional mechanisms within socio-ecological systems that can face uncertainties and complexities of current and future disasters.

As the discourse on the integration of adaptation and disaster risk in urban governance has showed, one cannot tackle solutions to climate change without taking into consideration the gaps left by poor development, and what both entail for the management of disasters in urban areas that present such difficulties. In light of the case of Somaliland, it is hence clear how the issues of development, adaptation to CC and disaster management are intertwined in both their problematic consequences and in their response efforts.

In the broad scholarship regarding the governance of environment and sustainability, the concept of adaptive capacity is seen as one of the internal factors affecting the vulnerability of a subject and its resilience, and has managed to bridge the two often competing literatures (Engle 2011; Haque et al. 2014). Increasing adaptive capacity is thought to improve the chances of successfully managing varying ranges and amounts of climate impacts, as having a higher adaptive capacity should prepare to better deal with climate's consequences, allows for more flexibility and learning (Parsons 1964; Chakravarthy 1982, as cited in Lemos 2011). However, adaptive capacity does not automatically translate into successful adaptation and research shows that the link between capacity and actual, long-term adaptation is far from direct (Engle 2011; O'Brien et al. 2011; Lemos et al. 2011). As a matter of fact, determinants to adaptive capacity vary from natural, material, technological, economic, institutional, human, social, political, and cognitive factors present within populations (Yohe and Tol 2002; Smit and Pilifosova 2003; Brooks and Adger 2005; Eakin and Lemos 2006). Adaptive capacity is closely tied to risk perception (Romero-Lankao et al. 2014; Lopez-Marrero and Yarnal 2010) and to access to assets and institutions and entitlements (Moser and Satterthwaite 2008). It is hence

particularly relevant and interesting to understand how adaptive capacity works in urban environments in low-income countries, where negative climate impacts will likely come to exacerbate those stressors already increasing vulnerability related to the lack of development (Eakin and Lemos 2006; Wilbanks and Kates 2010; Lemos et al. 2011). The urban agglomerations with the highest growth rates are in fact located in Asia and Africa, where 90% of the increase of urban population before 2050 will likely take place (UN-ESA, 2014).

In addition to the increased exposure brought by urbanization and densification in low quality housing, there are scientific projections asserting that the immediate and most severe impacts will be faced by urban areas in the Global South (Carmin et al. 2011). The Global South hosts hence the dwellers that are most vulnerable to the increased intensity and/or frequency of natural hazards such as floods, landslides, storms, heatwaves and constraints on water resources due to changing climate (Satterthwaite et al. 2007; Romero-Lankao et al. 2007). These dwellers suffer mostly from the 'adaptation deficit' due to substantive backlogs for Least Developed Countries in protective infrastructure, services and urban government (Moser and Satterthwaite 2008; Dodman et al. 2013). These cities in fact are typically deprived of quality water management, quality roads, healthcare, emergency services and lack detailed data on vulnerability (Mitlin and Satterthwaite 2012; Dodman et al. 2013), furthering the obstacles to an effective adaptation for all. Climate change hazards come hence to exacerbate inequalities that are rooted in the socio-economic and political systems, which must be addressed in order to build solid adaptive capacity and avoid perpetuation of structural causes of vulnerability (Lemos et al. 2011). Recent studies show the links in the most poor countries between human vulnerability and exposure to multiple stressors acting across scales together with climate change in what is termed 'double exposure' (Leichenko and O'Brien 2008).

In order to address this recognised link between development and adaptation, the integration of action for addressing climate change adaptation and development issues is encouraged in different ways across literature, where their interactions and effects of long term sustainability are studied. (Mitchell 2003; Klein, Schipper et al. 2005; LaTrobe and Davis 2005; Benson et al. 2007; Bizikova, Robinson et al. 2007; Eriksen, Aldunce et al. 2007; Klein, Eriksen et al. 2007; Lemos 2007; Lemos, Boyd et al. 2007; Dodman and Satterthwaite 2008; Jerneck and Olsson 2008; Birkmann et al. 2010; Brown 2011).

Among others, Leakin, Emos and Nelson argue that in order to work synergistically on the factors that undergird vulnerability and towards sustainable development, adaptive capacity is to be seen as the combination of two distinct aspects: specific adaptive capacity and generic adaptive capacity, and these two should be addressed simultaneously (2014). Working on the latter implies acting for universal access to education and healthcare, for more capable, for more democratic, transparent and accountable institutions and all those factors pertaining basic human development; whereas working on specific adaptive capacity means implementing risk management measures, social and technical innovations in light of preparedness to specific climate hazards. High generic capacity does not necessarily translate into specific capacities for risk management at all levels of decision-making and these two capacities emerge in different non-homogeneous nuances at different levels and scales, with consequent possibilities of negative interactions (Eriksen et al., 2011) but also synergies that need to be explored contextually. To do this, the framework of Lemos and others proposes to analyse interrelations between the two dimensions of adaptive capacity across time, space and scales to ensure the ambitious objective of a sustainable adaptation suitable for the political and institutional specific contexts. This reminds us of how the expected outcomes of adaptive capacity building measures should take into consideration the dimensions of development while tackling climate change, and hence shed light on how to effectively tackle adaptation.

Given the conditions of hardship in which the population and institutions of Hargeisa find themselves and the abovementioned theories, it appears reasonable to talk about District Disaster Management Committees as an institutional measure for adaptation to climate change and not only for. An integrated perspective ensures that all measures for adaptation are considered in light of a realistic vision of the context with all its challenges both in terms of sustainable development and disaster risk management.

Governance of Adaptation

Cities are playing and will play a crucial role for the adaptation of all to the impacts of climate change in light of the strong urbanization trend. Literature has highlighted many reasons for which a focus on such level gives purpose to the study of adaptation to climate change. Cities are in fact the locus of implementation of those measures that often are planned at national level (Moser 2009), but also enjoy a closer position to other crucial local stakeholders and the centres of urban planning and managing (Carmin et al. 2009). In addition, there is their comparative advantage in experimentation given their jurisdiction on and experience with local transport, building regulations and land use planning (Corfee-Morlot et al. 2009). Other authors underline that cities enjoy the possibility of creating new spaces for policy making, where knowledge from the experts can meet the local one and can reap the most benefits from innovation and integration with other sectors (Wilbanks et al. 2007; Moser 2009a; Carmin et al. 2009; Kamal-Chaoui and Robert 2009). It can actually be said that the direct impact of the effects of climate change affect the immediate availability of resources at city level (Kern and Alber, 2008). A big part of adaptation governance literature now focuses on a city-level perspective, but it is crucial to recognise how the urban governance indeed is tied the other tiers of government, in addition to the non-governmental networks are important (Leck and Simon 2013).

For this reason, we believe there is a need to adopt politically informed approaches that explicitly examine the role of power relations (Haque et al. 2014) and of what being a multi-level governance system entails, as the traditional distinctions between local, national and international level have been evolving (Bulkeley and Betsill 2013). Governance has been defined as a concept wider than 'government' and broadly encompasses the whole framework of social control, stewardship and regulation, which exerts power over and within society (Batterbury and Fernando 2006, as cited in Blackburne 2014). In a growing body of literature on the role of governance, one of the foci was set on the increasing multiplicity of actors and institutions who are involved in the governing of public (Jessop, 1997; Bulkeley and Mol, 2003; Williams and Mawdsley, 2006; Hysing, 2009 as cited in Lawhon and Patel 2013). In this broad and often contested scholarship, attention has also turned to which actors are or are not involved in governance; with which purposes and to what impact; and to the institutions, both formal and informal, through which this is pursued.

There is a generalized consensus that the success of planned adaptation is closely related to the commitment and leadership showed by local authorities and their interactions with other stakeholders regarding urban management (Wamsler 2013; Scott and Storper 2014), hence the absence of these factors can impede the process of adaptation. While the autonomous actions of individuals, households and firms are influential in adapting, their decisions are indeed taken in the context of governance arrangements and institutional environments that both compel and enable decision-making, and their interaction ultimately draws the trajectory towards adaptation in the long-term (Eakin et al 2014). As Dodman and Satterthwaite suggest, the damages occurring in cities from climate change impacts can be viewed as failure in urban management, supporting prescriptively the role of governance and institutions in setting a direction towards adaptation (2008). Adaptation is composed of actions throughout society, by individuals, groups and governments, and by an increasing number of actors, including elements from the private sector (Adger 2005; Agrawal et al. 2009; Mees 2012;).

In the perspective of environmental governance, along with recognising the existence and consequences of scales of time and space, the socio-political institutionalized decision making for environmental governance is documented at local, subnational, national, and transnational levels (Lemos and Agrawal 2006). In addition to this, the role in shaping governance by non-state actors, transnational environmental organizations, intergovernmental and multilateral organizations, aid organisations and epistemic communities is also considered (Ibidem). This consideration results clearly relevant in contexts such as in the governance of low income countries where the aid channelled has a significant weight on which actions (both of operationalisation and of building of adaptive capacity) planned and taken. It is however to be noticed how in a jurisdictional scale, those actors which classify as international organisations are indeed on a level above on nation-states.

However, the legitimacy of international actors themselves, despite being built on that of nation-states, takes place independently of the recognition of the national level, as in the case of Somaliland, and can be implemented directly at lower levels such as regional and urban.

Tyler and Moench (2012) analyse the different actors involved in adaptation –individuals, households and public and private organisations (including the various government levels) –as purposive decision-makers whose behaviours reflect their location in the social system with their own perceptions and interests. The role of governance as decision-making process is described here as a link between actors and systems, enhancing or constraining their ability to be resilient.

A crucial role set for governance, highlighted by the neoclassical economic theory, is its effect on enabling the private initiatives for adaptation by creating a conducive environment. Furthermore, the same school recognises how governments enact direct adaptation policies on behalf of its citizens, always with a rationale for the comparative efficiency of their intervention. However, even reasoning in terms of normative values, justice and fairness have pointed to a role for governmental actors in ensuring protection for the most vulnerable in cases of market failures (Berkhout 2005; Stern 2006).

Governments across all levels (from international to local), can influence adaptation in three broadly defined ways: by enabling it at other levels, by stimulating it or by constraining it (Biesbroek et al. 2013). As suggested by Oberlack and Neumarker (2013) it is necessary to calculate the importance of the institutional, political framework issues such as multi-level coordination, free-rider problems, the link between science and policy, institutional inertia, institutional path-dependence and power distribution for effective work towards adaptation. To do so they set a diagnostic framework that positions the governance system characteristics – such as vertical and horizontal coordination, path dependency, and market/network/hierarchy organisation style (Mendelsohn 2006) –together with the actors attributes (such as private or public nature), climatic stressors and resources –as variables explaining interactions and outcomes of the adaptation process. Sattherthwaite and Dodman also recognise that beyond the necessity for flexible responsive and technically and financially resourced arrangements of governance, the political dimension to resilience is to be focused (2013). In addition to this, the ability of governance systems to deal with uncertainty and surprise is a requirement that will become more and more essential for their sustainability in face of the increasing uncertainty due to climate and global change (Pahlwostl 2009). For all these reasons, far from disregarding the abovementioned theories but rather taking from them in establishing a clear focus on the governance framework role, in this paper we will focus on the governance system and on governing institutions as actors with their own adaptive capacity incentives, limitations and relations.

Retracing these contributions helps us never to assume that the government can be considered as one and only actor, but rather showing how in the landscape of governance relations between levels are crucial but far from perfectly smooth and balanced, creating a process hampered by a number of challenges to adaptation that are inherently political. Another problem tied to this perspective is the so-called ‘local trap’ in which research falls when assuming that the a priori suitable level for dealing with environmental sustainability, justice and democracy is the local one (Brown and Purcell 2005). Despite recognising as abovementioned the crucial role of local, institutional actors, ignoring the incentives and barriers that come from their interaction with other levels would give a partial account of reality.

Multi-level, networked, polycentric, complex, scaled: governance

Elaborating on how cities and their governance institutions are embedded in a system that sees more actors and differentiated capacities, we shall here analyse literature referring to multi-level, networked and polycentric governance. These contributions build a case for a governance system that goes beyond the hierarchy between levels, as in the case of Somaliland there are clear vertical disconnects, such as that of the missing recognition of national sovereignty and the missing local level of the national DRM structure.

The governance of adaptation is recognised to be an inherently multi-level challenge that necessitates action from the global to the local level (Adger et al. 2005, Urwin and Jordan 2008; Mees 2012). Recognition of the presence of different levels in decision-making is common, entailing an emphasized interconnection of constraining and facilitating effects that each governance level has on other decision-making and actions (Leck and Simon 2013). Identifying these levels

The phenomenon of ‘‘multi-level governance’’ has been dealt with in the analyses of political sciences much earlier, as the influence of different levels has always been present among themes of international relations studies (Welch and Kennedy-Pipe, cited in Pahl-Wostl 2009). However, the literature that refers to multi-level systems does not evade recognising how the interconnections can have both vertical and horizontal directions, the latter of which takes place within the same level but among different sectors (Young et al. 2006; Kern and Alber 2008; Bai 2008; Urwin and Jordan 2008; Leck and Simon 2013). Urban climate governance in the context of a multi-level system has also been analysed in terms of modes of governance. Kern and Alber’s highlights for the OECD on competitive cities and climate change list different modes with which vertical collaboration between levels of government can work on climate policies (2008). National governments, in their framework, can govern through enabling action on the ground, or provide governing by provision of further services at local authority level, such as with local project funding programmes. As a third option for the organisation of local-state relations, the authors record governing by - setting further- regulation. They admit that there is space for complementation and overlap among the modes for national governments, whereas international organisations, like UNDP in our case, tend to focus on enabling local actors.

As a matter of fact, different actors have different interests and hence different strategies and objectives guiding them towards action. If the abovementioned case of theoretical illustration is based on relatively developed countries, the authors nonetheless explicitly refer to the lack of adaptive capacity in middle-income and low-income countries as a call for assistance, both in terms of capacity building and in investments for infrastructures and services at the local level.

Another way of internalizing the horizontal and vertical dynamics of governance has been the distinction of two types of multi-level governance by Hooghe and Marks where type II where jurisdictions are function-specific and operate at different territorial scales also crossing borders, as that of international aid organisations. It depicts a system that has no longer vertical and horizontal distinctions, but various structures of systemic cooperation and subsystemic conflict for different regions, countries and issues. On the contrary, type I resembles the traditional scale concept of multi-task nested jurisdictions that are not overlapping, are limited in number and scale levels and has a tendency to stability (2001).

Despite our case being in a widely different context from that of the European integration process, we shall note how, as policy travels from one level to another, the institutions of corresponding levels define themselves in relation to other levels (Radaelli 2003). This process is however certainly not immune from political conflict, nor in the global South or in the North. Hence it is not only a matter of vertical and horizontal coordination and to grasp these dynamics, neither a top-down or a bottom-up approach can be helpful if taken singularly. However, comparing and contrasting the results of both approaches can give a fuller description of the interplay between levels of the jurisdictional scale, which can occur both within and across sectors (Urwin and Jordan 2008).

Recognising the complication that arises from a multiplicity of actor at multiple levels entails a ‘global’ problem of collective action; this led Nobel Prize Elinor Ostrom to import the concept of polycentricity at all levels to the discourse of environmental change governance. Given the collective action needed to combat CC, theorised as a setting in which decisions on costly actions are made independently but the outcomes affect everyone involved, Ostrom (2010)suggests how taking such perspective at multiple levels would allow for advantages in mutual monitoring, learning, and adaptation of better strategies through the mechanisms of polycentricity. Her research has taken from the literature of safety as a public good of Vincent Ostrom, who defined the polycentric order as “one where many elements are capable of making mutual adjustments for ordering their relationships with one another within a general system of rules where each element acts with independence of other

elements." (1999, p. 57). This framework would resound with the ideas of resilience and adaptive capacity, where there is an evolutionary nature of constantly evolving relations, and would also encourage experimentation from a multiplicity of actors and reap the related benefits at different levels (Ostrom 2010).

Another direction of research that has however much in common with polycentricity, is that of *networked* forms of governance. The network governance theory is built on several decades where political science, public administration and organisation management have used the concept and analysed the practice entailed by network management. In the network model for decision-making the government is not the main, but one of the several inter-dependent actors involved in the governing process, each with different interests, visions of what is desirable, strategies and resources, which can change in time independently from the actions or will of other actors (Klein and Koppenjan 2012). The process of governance in networks highlights both the conflictual nature of asymmetrical distribution of resources, competencies and power, in addition to the need for trust and mutual learning, as no automatic coordination mechanisms necessarily exist, as in the polycentric model. The interdependence between actors is not automated and is filtered through the perceptions that each actor has of its positioning and the others', showing also that the outcome of governance is the fruit of (a not necessarily fair) negotiation. This literature mentions institutions as being the rules regulating behaviour within networks, and as influenced by power relations – such as the rule of nested hierarchies and competences in the different levels of government.

Besides highlighting advantages for network member such as access to resources, to shared knowledge and opportunities for exhibiting political leadership, networks appear to be operating within national and local institutional contexts, which shape their capacity to implement change. As original intention of the researches of the same authors in 2006 set out to understand how resources, competencies and power were distributed both 'vertically' between levels of government and 'horizontally' through other spheres of authority and the consequent effects on urban climate governance, which was then specifically analysed for the case of transnational climate networks (Bulkeley and Betsill 2013). The idea of many actors with varying degrees of power, resources and competences set at different levels resounds with Ostrom's polycentricity, corroborating the coexistence of networks and levels. After emphasising the complexity that unravels inside networks, the authors comment how the uncertainty and risk that emerge when dealing with climate change puts the role of knowledge institutions and research at the centre, allowing access to the knowledge required to reduce risk. Understanding the role of the interface between science and policy and the role of individual and social learning brings additional value to adaptation when an international organisation works in training local individuals and hence redistributes knowledge and human capital.

In light of the interrelations mentioned, Healey elaborates on the 'openness' of the city system and on the variety of 'relational webs' and how they develop through various scales of space and time to the point of questioning the 'systemness' of a city and redefining it as a mental organisational tool (2007). In doing so Healey refers to the complexity theory, which elaborated the concept of complex adaptive system. As mentioned abundantly across its literature, complexity theory is not a unified body of science. It has rather evolved through the analyses of complex adaptive systems across different disciplines such as computer science, biology and organisational studies. This model has been used by some to describe cities, but not without debate. Comunian (2011), while focusing on a distinct issue of creative cities, summarises the characters of a city as a CAS and lists how both are never fully stable in an equilibrium because interactions among actors are non-linear and there are no fixed boundaries and actors are –albeit not equally- able to connect to others. The city is also path-dependent and single behaviours can be reactive to others, however the chain of events in the system is not forecastable as its dynamics transcend a direct chain of causality between single behaviours, which can however promote some self-organisation into the emergence of new structures. The openness of the city, its non-linear interactions, the differentiated distribution of connectivity between actors and its being dependent on its history as characteristics of the cross-level and network dynamics between the urban and the other levels of the jurisdictional scale, which make up the governance system.

In order to unpack the complexity of the reality of governance, Ostrom elaborated a multi-tier framework for understanding the dynamics of socio-ecological systems (2005, 2007). At the highest

tier, it is conceptualized how characteristics of (i) a resource system (e.g., a lake, a grazing area), (ii) it's resource units (e.g., fish, water, fodder), (iii) the users of this system, and (iv) the governance system are both affected by and affect interactions and the outcomes, which are achieved at a particular moment in time and space. This decomposable framework also provides the contextualization in other related socio-economic, political and ecological systems and contexts. In each lower tier, every variable can be further analysed. Ostrom collected through literature several variables in which governance systems unpacks at lower tiers: government organisations, non-government organisations; network structure; property-rights systems; operational rules; collective choice rules, constitutional rules and monitoring and sanctioning processes. In addition, the political context is broken down into variables of political stability and government settlement policies, and interaction effects are registered as occurring among variables at one or more tiers. Oberlack and Neumärker elaborate on this framework's first tier to formulate a version built specifically for adaptation to climate change where the interplay between variables of resources, climatic stresses, the governance system and actor attributes generate environmental outcomes through processes (2013). The figure below shows the second-tier variables that the authors identified in Governance systems and the references in literature adopted.

	Governance System [GS]	*References (example)*
GS1	Governance functions of the system of rules	*Gupta et al., 2010*
GS2	Properties of the rule system itself (e.g. inertia, path dependence)	*Gupta et al., 2010*
GS3	Interplay of Governance Levels (vertical/ horizontal)	*Keskitalo et al., 2010*
GS4	Attributes of Organisations	*Tompkins et al., 2008*
GS5	Modes of Organisation (e.g. market, hierarchy, network)	*Mendelsohn, 2006*

Figure 2 Second tier variables. Source: Oberlack and Neumärker 2013, p.13

In this perspective, the reasoning of governance system's components, plus Bulkeley's conceptualisation of a grammar of governance that includes scales and networks (2005) and the mention of 'multi-level networks' (Pahl-wostl 2009, p.356) appear coherent with a coexistence of the different levels of the jurisdictional scale with networks in an extremely differentiated variety of vertical and horizontal dynamics.

The complexity of the urban governance system highlighted by the extensive literature interpretations points to the need of considering the relationships between actors, rather than the actor in its singleness. Hence the need to enquire vertical and horizontal ties with other actors in the climate adaptation governance system, observing the directions of the redistribution of power, competencies and resources.

Across levels: Scalar politics

As the actors across levels have a will power, resources and objectives, we shall here address how interactions between levels systematically construct the scale itself by setting differentials of power in different ways. We shall here illustrate the intentionality of scale, and how the multiplicity of levels and of scales generate vertical and horizontal tensions that in turn produce challenges that affect adaptation responses through the contributions of different authors.

To elaborate on how governance is in fact a process, scholarship has developed the Foucauldian concept of governmentality as "concerned with the rationalities and techniques of the direction of conduct of different social and political actors by a variety of agencies and authorities" (Dean 2007,

pp. 36). As Bulkeley and Castan-Broto have shown, governmentality taken together with the political ecology tools show how the nature of urban climate governance is explicated not only in the formal institutions of climate policy-making and planning but rather in "manifold sites, techniques, and practices through which conduct is shaped" (2012). This shows there is a need to pay careful attention to the reasoning through which the actors reach alignments. In this direction works the debate around 'politics of scale'.

The debate regarding scalar politics – or politics of scale – has chiefly occurred within political economic and urban geography (Brown and Purcell 2005; Leitner et al. 2002; Marston 2000; Neumann 2009; Sheppard and McMaster 2004) with contributions from poststructuralist work (Mackinnon 2010; Lawhon and Patel 2013). This field of study focuses on multi-layered interactions, which redistribute power and responsibility with multiple directions between networked actors (Blackburne 2014). In the literature of politics of scale, the latter is not taken as an innate element of reality and should be considered not among the methods but rather as objects of the study of political ecology (eg, Smith 1992; 1993; Cox 1998; Swyngedouw 1997; 2004; Marston 2000) which nonetheless has no undebated epistemology (Manson 2009). Taking from the literature of geographers working in the radical tradition of political economy, Brown and Purcell in fact highlight how scale is not an independent variable but rather a political strategy stroke up by actors to reach precise objectives of power in line with the actor's agenda and with social and ecological outcomes (2005). The relations between different levels, such as that between UNDP and the Hargeisa community, or the national government and the city administration, become strategies in which the different levels affirm themselves in relation to one another.

As the scale is hence produced throughout the process of political struggle, scales would be at least in part, or temporarily fluid, while they can however be routinized into hegemonic structures perceived as fixed. Furthermore, scales require the consideration of links among different levels and hence assumes a relational character, which becomes political as its actors role. In human-environment systems, as Cash, Adger and others underline, the difficulties in addressing problems whose origins lay in cross-scale and cross-level interactions are well known (2006). These two authors also clearly state that a number of scales critical for understanding the relationships in human-environment systems co-exist with most analysed spatial scale: the jurisdictional scale, the temporal scale, the scale of institutions (from basic norms up to constitutional processes), that of management, of knowledge and a scale of coexisting networks at different levels.

Links between levels and scales can pose threats to the sustainability of a system, and hamper its ability to adapt to climate change. For instance, as when there is a mismatch between the levels involved, as e.g. when an authority at a certain level is called to respond to an environmental problem that transcends its spatial borders or when short-term adaptation undermines long-term resilience (Adger et al. 2011). Beyond mismatch problems, Cash and others (2006) highlight two other challenges related to scales: the ignorance of cross-level interactions that often leads to underestimation of future, bigger problems, and the challenge posed by the actual plurality of interacting scales, which generate different benefits for the different actors that pursue them. An example of this challenge is the potential ineffectiveness of solutions set following only the interests of one scale- or level-bound group of actors. As it becomes clear by analysing scale as a strategy, its relational nature and its multiplicity shows the stretches of vertical and horizontal coordination difficulties, and is inherently tied to the emergence of barriers to the adaptation process, which will be analysed in the following section. In relation to this, it is highlighted how vertical interplay between institutions, the practice of sharing power and responsibilities between government and community (co-management) and the creation of boundary organisations are all responses to these challenges, especially in terms of knowledge and resource issues, albeit still containing issues of asymmetry of power and legitimacy still occur. Fairly along these lines, literature on system innovation towards sustainability argues that all levels need to be connected through robust mechanisms in order to channel positive momentum from one level to others in a synergy towards sustainable transformation (Bai et al. 2009). Taking from Young and colleagues, we shall also consider the vertical direction of coordination as located along the dimension of jurisdictional scope in order to internalize those hierarchical characters of the power structures of the state and of government (2006). Besides

analysing the horizontal dimension and that of the time scale, they identify several modalities of vertical interplay between the macro- meso- and micro-level, whilst recognising the vagueness of this tripartite distinction. These modalities describe the possible evolution of institutional arrangements between two institutions located at different levels of the jurisdictional scale. They are de jure/de facto dominance; separation; merger; negotiated agreement and system change. Whenever scalar frictions take place among different levels managing the human uses of resources, some interactions create a patterns of dominance. This can happen through the formal allocation of authority by constitutive rules, or by a hegemonic position through the control of resources or of the discourses in a Gramscian form of de facto hegemony. Separation, on the other hand, counts on the precise delineation of the competence boundaries of each actors in the attempt to distinguish spheres of influence, which can however prove to be a slippery response to vertical interplay needs when environmental issues often transcend jurisdictions and borders. The merger option, definitely more common in the private sector with vertical integration, is of rather limited relevance in the context of governance, where states resist ceding sovereignty to transnational networks for environmental management and instead of attempting to internalize the issues of cross-level frictions, they often delegate to lower levels competences through processes of decentralisation.

The pattern of negotiated agreements shapes a variety of hybrid forms and degrees of consensual decision-making procedures and rules, sharing of responsibilities and recognition of actors at different levels. This type of institutional bargaining has also fed into the scholarship of comanagement, which has been recognised as an important but broad category of response to cross-level and cross-scale issues (Olsson, Folke and Berkes 2004) but has the tendency to take many years and can lead to stalemates. Finally, cross-level interaction in scale-dependent environmental regimes can be a part of and lead to a broader change in the institutional setting of the interactions. According to the authors, the actors in the cross-level relation will act following these patterns depending on a number of factors, such as their power differentials, the existence of dynamics of decentralization, of dueling discourses, cognitive transitions and the presence of blocking coalitions. The potential consequences of these scalar patterns can vary from positive to negative effects in terms of sustainability, equity, welfare and cultural autonomy and are differentiated among levels. As Young and colleagues realise, this analysis allows these consequences to be considered only as preliminary, as ultimately, considerations of power and of social norms are influential in explaining the outcomes occurring.
Along these lines, also Naess and others (2005) identify three types of power relations and interactions within the institutional structure determining the decision-making process: the degree of centralization, the conflicts of interests within and across management levels and the role of elites in shaping the agenda. Among the challenges identified in cross-scale governance of adaptive capacity, Hill and Engle talk instead about “tensions” that occur between levels of a scale when attempting to develop adaptation to climate variability and long term sustainability, such as local practises that harm sustainability in the long term while helping agriculture in the short term. This is certainly relevant when thinking of institutionalized responses to climate change impacts (Bulkeley and Tufts 2013). They also mention tensions while balancing across scales integration, flexibility, and certainty, as for instance, there are trade-offs to be balanced between the need of reacting quickly to unexpected impacts and the need of governance to be predictable and accountable for a solid system resilience (2013).

We aim here at stressing how not only consideration of scales of human actions, i.e. time and space, but also different interests and power levels actors shape the construction of scalar arrangements that in turn affect adaptation and adaptive capacity at the different levels. Examples of how it is important to be aware of the distinction between levels and between different scales when implementing adaptive measures, Blackburn’s analysis of the scale relations inside the Jamaican decentralized disaster risk management framework. Here, she shows how the scalar arrangements apparently implemented in name of decentralization actually reproduce asymmetries of power in the scaled risk governance system (2014). The application of politics of scale to disaster management has connected to the developmental call for ‘good governance’ in analysing decentralization in terms of how is it manipulated by DRM actors but, as much of the political ecology literature, underline the ‘mutual constitution’ of institutions, power and environmental outcomes. In the case of Portland, Jamaica, Blackburn identifies three specific processes of the strategy through which the scale is structured by

the national government to maintain its power gradient, similar to the form of dominance pattern of Young's categorisation. These are: incomplete decentralization – as lack of local empowerment both in terms of material and cultural resources; scale jumping –as a strategy of the national government level to connect with communities "jumping" the local authority, and the isolation of communities through reduced communication and representation. The identification of these phenomena was reached through qualitative research methods that dug through the non-structural and behavioural elements of scale interactions to identify: the relative strength of inter-actor relationships; relative empowerment of actors and the cross-scale processes of scale structuration's direction. Her analysis of the scalar limits of disaster governance in actuality confirms findings of literature that suggest how in DRM local actions are often inhibited by that of higher levels of government (Grove 2013) and her research details a specific form of scalar strategy of dominance by the national level.

The scalar politics approach assists in analysing the intentionality behind scale structuration, cross-level and cross-scale interactions and considerations. However, besides intentional strategies, the existence of scales also generates challenges such as those described by Cash et al (2006), which generate problems for the actors besides those deriving from their objectives and strategies. For this reason, considering them jointly with patterns of interrelation between levels (Young et al. 2006) could give us deeper explaining on why and how barriers to adaptation –which will be specifically discussed in the next section –are generated within the interrelatedness of governance actors in adaptation at the local level of Hargeisa.

In the connection of different levels of the jurisdictional scale of environmental politics, as Bulkeley and Betsill demonstrate, even in the Global North, capacity is built at the local scale through multiscalar networking (2006). The role explicitly played by aid appears however to be otherwise undertheorized as an overt scalar relation, but the role of international actors such as aid organisations is called in to relieve capacity and resources constraints in the global South (Adger et al. 2005; Moser and Satterthwaite 2008; Carmin et al. 2012). The local government has a range of possible tools for adapting to climate change, such as adjustments of building codes, infrastructure standards and land-use management. These, for instance, often require commitment, prioritisation, or institutional development and coordination more than big budgets (Satterthwaite, 2011). If Barnett highlights the tendency of aid supply to dictate agendas and terms of national policies in the extreme case of aid-dependent unrecognized island state of Niue (2008), international aid and the actors it involves, undeniably play a role in the process behind the political and legal environment in which adaptation decisions and actions take place in the global South. Furthermore, climate change is now one of the fastest growing areas of focus of foreign aid, although precise comparisons problematic, due to the nature of climate change typically covering a plurality of categories double counting would definitely occur (Victor, 2013).

It is a fact that almost all African states receive significant development assistance from Western donors, often amounting to more than 10 per cent of the gross national income (Grimm 2013). In addition to traditional western donor countries, aid funding now comes from numerous other development partners such as Turkey and China, and from an increasing number of international organisations and transnational networks (OECD, 2013). The implementation of the projects is in the hands of local offices of international aid agencies, such as in the case of UNDP and Somaliland in analysis. This generates links that go beyond the jurisdictional scale, not only as UNDP does not formally recognise the capital's sovereignty but also as its executive power does not follow each step of the top-down reading of the scale.

Also Oberlack and Eisenack analyse how international cooperation can alleviate barriers to urban adaptation to tackle a specific adaptation problem – that in the article's case was urban squatting (2013). After a wide review of cases and literature, they state distinct, but overlapping modes through which international cooperation works in assisting climate adaptation: finance, technology, learning, insurance and institutional development and organisation. In addition to these, there are the cross-cutting issues that affect all modes such as the implicit or explicit definition of adaptation, the relation to existing institutions and practises, monitoring and evaluation procedures and the organisation of

international decision making. These points could result as relevant in the case of Somaliland as it is formally not recognised as an actor with the sovereignty to negotiate with UNDP, but has however taken a role in the negotiations that have led to the NAPA of Somalia in which Somaliland measures are also addressed. The broad UNDP project of which we will analyse the DDMC task falls in the category of institutional development and organisation, as in its two separate components it tackles the two different but interrelated goals of institutional capacity for CCA and the organisation of community responses. However, it also introduces an institution, which was existing only on paper and pertains to institutional development.
The authors identify archetypes of barriers for municipal government, where the first hinders and the second aids adaptation at a variety of levels. The ways in which barriers operate are listed as: (1) by constraining the available means for adaptation; (2) by hampering the use of available means; (3) by increasing the costs of adaptation including transaction costs; (4) by reducing the incentives for adaptation; and (5) by increasing the incentives for mal-adaptation (ibidem, p. 354). The same authors explain how change factors can originate endogenously or from levels above the municipal. Among those they describe, the alteration of national and subnational policies, from a perspective of institutional development and adaptation finance, has the potential to foster more coordination and commitment, better learning and risk management. The expected effects of these would be to strengthen the sustainable adaptation process in the contrast to barriers's effects in five ways. (1) By enhancing available and/or used means of adaptation; (2) by making technically and economically available means more effectively used; (3) by reducing opportunity costs of adaptation; (4) by increasing the incentives for, and perceived benefits of, adaptation; and (5) by avoiding or reversing maladaptive trends (Oberlack and Eisenack 2013, p. 355). This theory hence provides us with the means to observe the effects of barriers on the outcome of the process towards adaptation to climate change.
Besides this example, literature on the international agreements has been barely connected to the development of local adaptation but numerous examples of policies pursued at higher scales that clash with attempts to adapt at more local scales have been registered (Urwin Jordan 2008; Carmin et al. 2011). Moser and Satterthwaite are few of the authors explicitly analysing the role of international donors as supporting developing nation-states in the creation of institutional adaptive capacity within the urban areas (2008). They see three different channels through which this is possible. By directly assisting the urban administration in working with all stakeholders to build local adaptive capacity; by creating the capacity to assist urban areas within the national government structure; or by increasing the funds devolved to the construction of infrastructure and services for resilience, addressing the backlog of LDCs in protective infrastructure and risk governance. The early stage of the UNDP project component for urban DRM allows only initial considerations on the role of aid in adaptation in this case. Nonetheless, interactions between UNDP and the actors already involved in DRM take place and are part of the governance system.

The variety of theories developed to explain and understand governance show a potential unlimited list of types of interactions among the different actors, being extremely context specific. Governance is not among the variables studied, nonetheless, for the purposes of this research, it is crucial to understand how institutional adaptation to climate change. Hence, we would here focus not on the governance system as itself, but rather use on the understanding on which actors, at which levels of the governance system, interact with which other levels and how. To do so, we shall leave the door open to recognise the types of interactions and issues that emerge in the specific case of Hargeisa.

Barriers to adaptation

As repeated across the chapter, there is evidence clearly showing how the governance system can affect the resources and capacities of local government actors and local level adaptation. However, not only the governance system can produce obstacles to the adaptation process of institutions.

The literature dedicated to these issues defines them as 'barriers to adaptation' in a quite broad but suggestive image of impediments that can be overcome. A most recent and shared definition of barriers is that of "(1) an impediment (2) to specified adaptations (3) for specified actors in their given context that (4) arise from a condition or set of conditions. A barrier can be (5) valued differently by different actors, and (6) can, in principle, be reduced or overcome. In this definition, conditions are the attributes of adaptations, actors, and their context" (Eisenack et al. 2014, p.868). Considering the sensitivity of barriers to who perceives them and in which context, our perspective will be that of the urban perspective of Hargeisa. The scholarship on barriers to climate adaptation has indeed observed the specific contexts of developing countries, where development backlogs have a big weight. Biesbroek et alia (2013) note in these cases the relevance of factors related to high vulnerability, little adaptive capacity, weak institutional environments, and the low priority of adaptation compared to other issues perceived as more pressing, in particular non-environmental issues of social and economic nature as inequality and poverty. National and international policies can also incentive adaptation at the local level, but the involvement of top-levels has also happened to discourage it (Harries and Penning-Rowsell 2011). This ambivalent relation prevents us from considering cross-level scale issues only as barriers, given that they have the potential for strengthening adaptation capacity of the city, e.g. through a redistribution of resources in favour of the local level. We can reasonably expect all of these factors to play a role in the case of Somaliland.

Moser and Ekstrom (2010) designed a framework to identify and analyse barriers that occur specifically in intentional and planned adaptation and characterise them depending on the different idealized stages of decision making in which they more often appear: the stage of understanding the problem, that of planning and that of managing, which includes implementation. This framework focusses on supporting adaptation at all the levels of decision-making, for a better allocation of resources and strategically designed processes to address the barriers found. It draws on socioecological system, as well as multi-level governance theories by paying attention to scale, contextual processes, structures, and by enabling a more flexible approach to the examination of barriers (Cash et al. 2006; Mukheibir et al. 2014).

The barriers specifically concerning the implementation phase the authors mention: the threshold of intent; authorization; sufficient resources (fiscal, technical, etc.); accountability; clarity/specificity of option; legality and procedural feasibility; sufficient momentum to overcome institutional stickiness; path dependency, and behavioural obstacles. The crosscutting issues they raise in the generation of barriers across the different phases are tied to resources, leadership, communication and coordination, and the values and beliefs that guide one's perspective.

A second interesting feature of Moser and Ekstrom's work (2010) is how they attempt at tracing the origin of the barriers to build coherent strategies to overcome them, they start by identifying if the source of the problem is the actors behaviours, or the human-environmental system of concern to urban DRM, or to the wider governance and socio-political context. As seen in the previous paragraph, these factors are affected by scale issues. Furthermore, barriers could be connected to more than one of the ideal phases and might origin from both actors, their context and the human-natural system on which they aim at working. In fact, some barriers are also impossible to consider in isolation and relate to one another (Burch 2010; Eisenack et al. 2014; Lehmann et al 2015). All of them vary in time (Hallegatte 2009; Burch 2010; Ekstrom and Moser 2014) as do the actors involved, the context and the system of concern –in our case, the governance of adaptation to climate change - that originate them

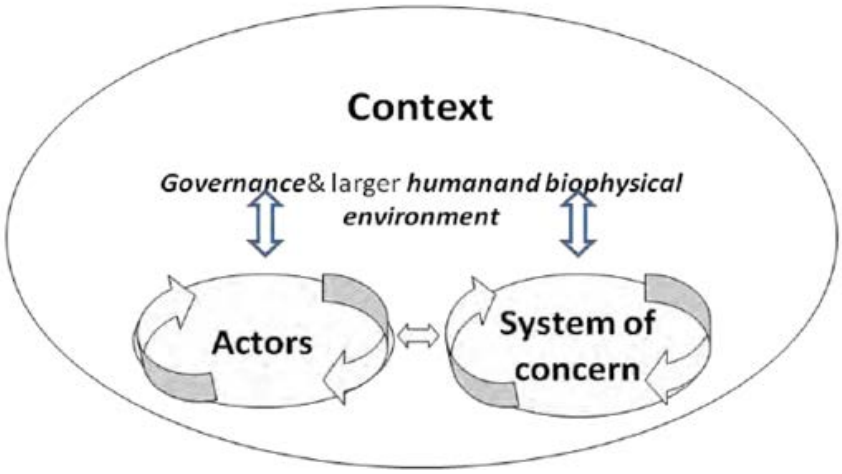


Figure 3 Sources of barriers, structural elements. Source: Moser and Ekstrom 2010, p. 3

Moser and Ekstrom's work provide a diagnostic framework for characterising and organising barriers across space and time and locates possible points of intervention to overcome a given barrier. The scale of influence actors can have on the barriers is the third characteristic of Moser and Ekstrom's analysis: they distinguish the temporal and the spatial/jurisdictional scale and observe how each barrier positions itself –if close or far- from the current, local level actor involved in institutional adaptation to climate change. Barriers who are more recent and close to the jurisdictional competence of the actor are seen as potentially easier to overcome as they fall under the power of local government. On the other hand, the further the barrier is positioned both in time and on the jurisdictional scale, the more difficult it would be for local actors alone to overcome it.

		Temporal	
		Contemporary	Legacy
Spatial/Jurisdictional	Proximate	A	C
	Remote	B	D

Figure 4 Opportunities for influence on barriers. Source: Moser and Ekstrom 2010, p.5

This passage is crucial as it connects the reasoning on scales and the reasoning on barriers and provides empirical means to analyse real cases in this perspective, as highlighted by their case study in the San Francisco Bay area (2014). As mentioned by all authors, however, the literature on barrier is in its infancy, and much is given for granted – such as the fact that barriers have to overcome- and the concept of barrier itself appears elusive (Biesbroek et al. 2013). Nonetheless, as highlighted before, barriers results as an interesting tool to shed light on the factual (dis)connections between adaptive capacity (or the lack thereof), governance scales and adaptive actions. Since the challenges intrinsic to governance can constrain the vertical and horizontal coordination needed for effective

adaptation measures, we shall consider them on the same level of barriers as the difficulties that emerge in cross-scale, cross-level and in networking hinder the possibilities of local government to dispose of all tools to implement adaptation hinder. In this sense, obstacles for the municipal actors can be originated in the interactions between different levels of the jurisdictional scale or by interactions with the spatial and temporal scale.

Besides Moser an Ekstrom, the types of taxonomies vary. Cochran and others, compiling from Moser and many other authors, distinguish barrier categories as jurisdictional/institutional; political; economic and budgetary and technical/scientific, further elaborating on the specific barriers in these broad categories (2011). As discussed throughout the theoretical review, scalar interrelations have shown to have impacts on the redistribution of power, information and resources strongly affecting the adaptive capacity of the municipal government level. Part of the literature has analysed specific barriers as tied to cross-scale interactions.

With the research on international cooperation mentioned in the scalar politics section, Oberlack and Eisenack (2013) compiled a different taxonomy of barriers, also including those generated by mismatches on the time scale between the human and the environmental system (ID5 and ID6). They also connect barriers to certain effects on municipal adaptation to climate change. As their study is based on a compilation of a variety of empirical case-study evidence, their connecting barriers and effects has a solid scientific foundation. For instance, the dysfunctional definition or distribution of political and administrative competences and responsibilities intensifies the transaction costs of municipal planning by increasing the need of time-consuming internal and external coordination and duplication of efforts. This sort of problem also allows municipal actors to be in a position where they can refuse responsibilities for cross-sectoral tasks of adaptation and hence points towards the reduced effectiveness of the use of technically and economically available means.

Barriers to climate adaptation by municipal governments and public administrations

Barrier	Effect	Barrier	Effect
Institutional deficits		**Limited awareness and understanding**	
ID1 Dysfunctional definition or distribution of political and administrative competences andresponsibilities[1,12]	c↑; um↓	AU1 Limited awareness and understanding of local vulnerabilities and adaptation options among public officials.[1,10,11,12]	um↓; ma↑
ID2 Lack of coordination between public agencies.[1]	c↑; um↓		
ID3 Deficient communication between policy makers, municipal agencies, scientists and practitioners; deficient integration of local knowledge into municipal decision making.[1]	um↓; ma↑	AU2 Limited awareness and understanding of local vulnerabilities and adaptation options among urban stakeholders.[10,11,12]	um↓; ma↑
ID4 Reliance and/or dependence upon national policies and regulations[12]	m↓; um↓; i↓		
ID5 Scale mismatch I: Long-term challenge vs. short-terminism of decision making[12]	c↑; ma↑		
ID6 Scale Mismatch II: Rapid environmental dynamics vs. slowreaction[12]	m↓	**Constrained resources**	
		CR1 Constrained financial resources.[1,10,11]	m↓
		CR2 Lack of reliable data and information about local climate change impacts and vulnerabilities.[10,11]	m↓
		CR3 Constraints on trained labour.[1]	m↓
		Non-climatic stressors and goals	
		NG1 Conflicting development goals and urbanisation pressure.[1,10,11,12]	c↑; ma↑

Source: authors' compilation.
Symbols for effects on adaptation processes: [m↓]: Constrained availability of means for public adaptation (e.g., financial, legal, organisational, technical, infrastructural means, knowledge and skills etc.); [um↓]: technically and economically available means are less effectively used; [c↑]: Increased costs of adaptation including transaction costs of public decision making; [i↓]: Reduced incentives for public adaptation; [ma↑]: Enhanced incentives for maladaptive activities.
References: (1) Ahammad (2011); (10) Carmin et al. (2012); (11) Roberts (2008); (12) Heinrichs et al. (2011) and (13) Ziervogel et al. (2010).

Figure 5 Barriers for municipal governments and their effects. Source: Oberlack and Eisenack 2013

Furthermore, many issues for the city are defined by upper levels of governance. This categorisation indeed includes consideration of both the temporal scale and the jurisdictional, and also specifies the expected effects barriers can have on the process of adaptation. Because of their consideration for time and jurisdictional scale issues in the barrier categorisation, we shall adopt their taxonomy for barriers and for their effects.
Their research factors in the not only the negative, but also the positive effects brought by cross-level interactions with international arrangements for adaptation on the costs, the resources, their use, and incentives for adaptive or maladaptive behaviours.

The effectiveness of international cooperation for adaptation is defined as the suitability of the international arrangement to alter adaptation problems (Young 2011), but we aim here not at an evaluation of effectiveness of UNDP's adaptation actions. Rather, our objective is to understand how the scalar relations in Hargeisa disaster management and barriers faced by the city work together in affecting the case of the managing of DDMCs.

In light of this reasoning, we shall adopt these elements for understanding how the barriers operate, together with Moser and Ekstrom's methods for locating origin and scale of influence of barriers to the implementation of urban adaptation.

Concept Framework

As mentioned above, climate change adaptation and the management of disasters have common goals that allow us to look at the implementation of district DRM committee in Hargeisa as an action that aims at contributing to both, as mentioned in the National Adaptation Programme of Action (2013). The governance of adaptation to climate change at urban level in the case of Hargeisa appears to coincide with that of urban disaster risk management, as the only measure planned for the urban level is that of establishing a DDMC. The process regarding district DRM committees can hence be the specific action through which the governance of DRM and climate change adaptation is observed for the city of Hargeisa. In order to understand what the obstacles to the actors involved in the governance of Hargeisa's floods and droughts are, we look hence at this action as the only currently existing institutionally planned measure for the municipal level.

Building on Moser and Ekstrom's framework analysis for barriers' origin and potential scale of influence, we aim at a deep analysis of the dynamics behind barriers, how they are generated and how they can be potentially overcome. Combining this with elements of Oberlack and Eisenack's meta-analysis allows us, as mentioned in the previous paragraph, to identify the ways in which barriers are obstructing the process of municipal adaptation and specifically the action of implementing a DDMC. Their tools give us a scientifically sound but simple framework to link the barriers to their influence on climate change adaptation processes, such as the process of implementing a DDMC in Hargeisa. Specifically, the available resources, their more or less effective use, the costs and the incentives for adaptive or maladaptive behaviours are the parameters chosen by the authors to describe the process of adaptation to climate change. These allow us to maintain an action-oriented framework that keeps the door open to potential positive influences but also to maintain the focus of the analysis on urban adaptation process in Hargeisa as it is currently facing an impasse around the only planned action for the city.

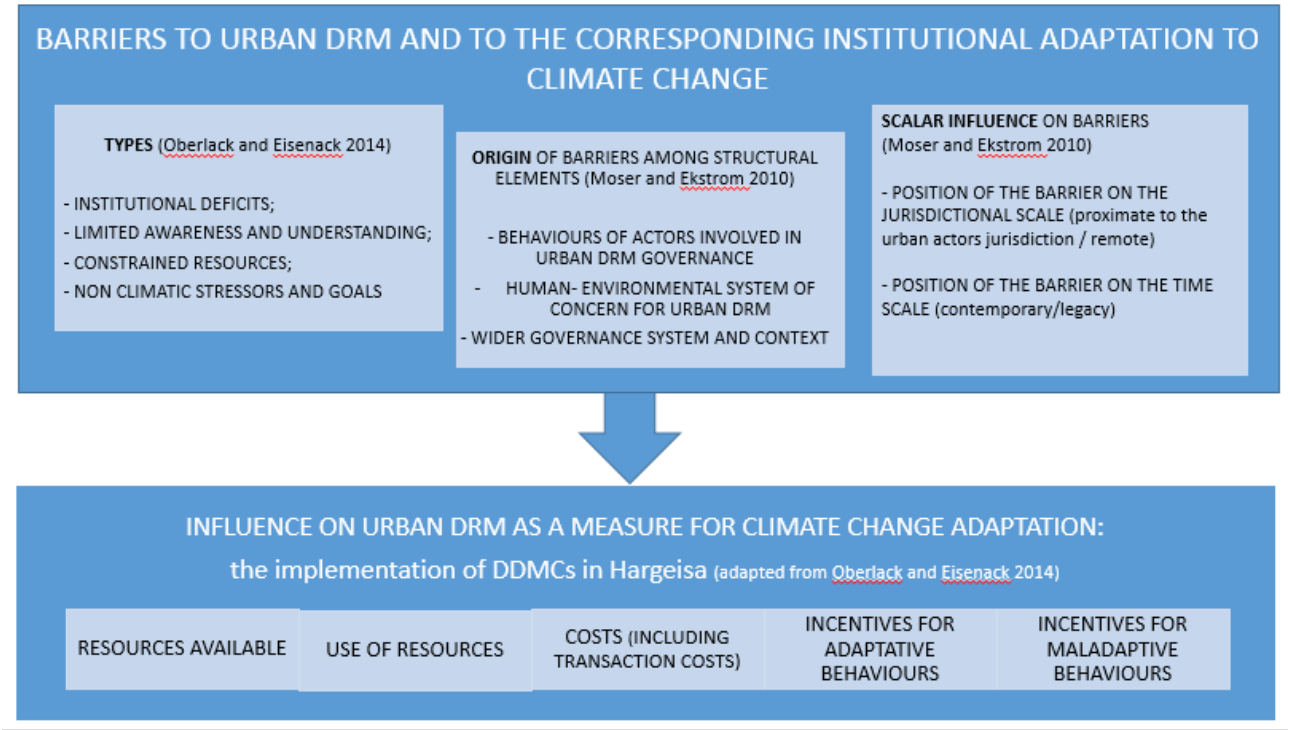


Figure 6 Concept framework, compiled by the author

Chapter 3: Methodology

Objectives for sub questions

1.1 To answer this sub-question we must identify the actors and stakeholders of all levels involved in flood and drought disaster management for the city of Hargeisa, their resources, mandates and their interactions.

1.2 To answer this sub-question we must understand which types of barriers are faced in the managing of DRM at city level. This entails understanding which issues have hampered the implementation of the DRM policy in the district of Hargeisa, for which actors and caused by which structural element.

1.3 To answer this sub-question we must uncover the effects that barriers have and have had on the resources, their use, the costs and incentives of implementing the measure of DDMCs in Hargeisa as a measure of both DRM and climate change adaptation.

Research operationalization

VARIABLE	SUB-VARIABLE		Indicators
1. BARRIERS to the implementation of urban DRM in Hargeisa	"an obstacle [to climate adaptation] that can be overcome […][that] make[s] adaptation less efficient or less effective or may require costly changes that lead to missed opportunities or higher costs." (Moser and Ekstrom 2010, p.2)		
	1.1 TYPES OF BARRIERS (Oberlack and Eisenack 2013)		
	Institutional barriers	Dysfunctional distribution of political and administrative competences and responsibilities	Reported existence of political and administrative competences crucial for operationalising urban DRM not attributed to HLC
		Lack of coordination between public agencies	Reported absence of vertical and horizontal coordination mechanisms or practises connecting HLC to other public actors
		Reliance and/or dependence upon national policies and regulations	Guidance from upper levels of government reported missing
		Long-term challenge vs. short-termism of decision making	Reported existence of mismatch between perspectives on existing commitment durability and commitment required for sustainable development
		Rapid environmental dynamics vs. slow reaction	Reported existence of excessive length of decision-making and managing process to keep up with environmental phenomena/
		Lack of leadership	Reported absence of a recognised leader in the governance process

		Conflicting development goals	Reported existence of a perceived conflict between other development priorities and DRM
	Limited awareness and understanding of local vulnerabilities and adaptation options	..among public Officials	Reported absence of previous dedicated training moment on DRM for public officials
		..among urban Stakeholders	Reported absence of forms of capacity building for DRM for non-governmental subjects
	Constrained resources	Constrained financial resources	Reported insufficient budget to cover expenses for implementation of DDMCs; perception of costs >benefits
		Lack of reliable data and information about local climate change impacts and vulnerabilities	Reported absence of scale-relevant quality vulnerability and impact assessments for Hargeisa
		Constraints on trained labour	Reported existence of skilled staffing gaps in HLC for DRM
	Non-climatic stressors and goals	Conflicting development goals	Reported existence of a perceived conflict between other development priorities and DRM
	1.2 ORIGIN OF BARRIERS AMONG THE STRUCTURAL ELEMENTS OF THE ADAPTATION PROCESS (Moser and Ekstrom 2010)	ACTORS	Barriers generated by behaviours of actors at the urban level of the jurisdictional scale
		WIDER GOVERNANCE AND CONTEXT	Barriers generated by the wider governance system and larger socio-economic context
		SYSTEM OF CONCERN	Barriers generated in the specific human-natural system of droughts and floods of Hargeisa
	1.3 SCALAR INFLUENCE ON BARRIERS (Moser and Ekstrom 2010)	CONTEMPORARY-PROXIMATE barriers	- Position of the barrier along the jurisdictional scale (which level of the jurisdictional scale has influence over the barrier considered? Proximate or remote to the urban level actors?) - Position of the barrier along the temporal scale (contemporary or legacy?)
		CONTEMPORARY –REMOTE barriers	
		LEGACY-PROXIMATE barriers	
		LEGACY-REMOTE barriers	

2. EFFECT OF BARRIERS (Oberlack and Eisenack 2013)	2.1 ON THE AVAILABLE MEANS FOR ADAPTATION (financial, legal, organisational, technical, infrastructural, skills..)	• Reported existence of a more/less/equally resourced available for adaptation by HLC • Expected effect: lower
	2.2 ON THE USE OF AVAILABLE RESOURCES	• Reported existence of a more/less/equally efficient and effective use by HLC of the available means Expected effect : lower
	2.3 ON THE COSTS OF ADAPTATION INCLUDING TRANSACTION COSTS	• Reported existence of a more/less/equal costs faced by HLC Expected effect : higher
	2.4 ON THE INCENTIVES FOR ADAPTATION	• Reported existence of conditions perceived as more/less/equally favourable for adaptation practises by HLC • Expected effect : lower
	2.5 ON THE INCENTIVES FOR MAL-ADAPTATION	• Reported existence of conditions perceived as more/less/equally favourable for maladaptation practises • Expected effect : higher

Research strategy

In light of the research objective and questions of this thesis, a case study research methodology will be adopted. The variables studied are intended to be investigated in their real-life current context and in their specific articulated connections rather than isolated from their context, which cannot be controlled by researchers, hence calling for this strategy (Van Thiel 2014). The case study strategy allows for the establishment of an operational link between the set of conditions posed by barriers and their effects on the urban disaster risk management, specifically in the case of Hargeisa's missing DDMCs.

Given the nature of barriers and of relationships across the jurisdictional scale, we shall adopt an actor-centered approach as both barriers and relationships are crucially related to the subjectivity of the actors of the governance system itself. This approach is increasingly undertaken in the barriers to adaptation research as it increases comparability (Eisenack et al. 2014; Klein and Juhola 2014; Moser and Ekstrom 2010); it takes the actions and decisions of identified relevant actors as base and positively –not normatively- explains why and with which conditions actions are taken, or as in our case, are not. We choose the specific perspective of the local government instrumentally to the wider scholarship on urban adaptation, barriers, to the interacting scales and institutional adaptive capacity. This will not imply the individuality of focus on the Hargeisa municipality, nor a disregard of its institutional system, but simply puts the city level at the centre of the analysis, whereas actors of all

levels, in their connections to it, will provide the necessary and complementary information on the dynamics regarding the variables at study.

This analysis is carried out in a deductive study where the expected barriers and effects are taken from literature and across theories. However, inductive elements will be required in the analysis of the qualitative data gathered, as the scholarship has not yet observed these phenomena for the specific case of Hargeisa. Measurements in such regards will be focused on which barriers occur in the managing of DRM policies at urban level and by who they are generated: whether urban actors, the human-environmental system of floods and droughts, or the wider context. This is done also in order to understand what are the challenges for those institutions that are key players in the climate change adaptation sector and their interrelationships in the governance system (Mukheibir et al. 2013).

We aim here at an in depth explanation of these correlations as to understand the adaptation process of the city Hargeisa in its urban disaster risk management component. Hence the single holistic case study typology is adopted as a mean of deepening the understanding of the single case in the attempt of gathering knowledge on the "how" and "why" behind barriers to climate change adaptation (Biesbroek et al. 2013). The choice of a single, embedded case study favours the intention of an in depth study of the barriers faced in the field of disaster risk management for the city of Hargeisa, as it interacts with other levels of the jurisdictional scale. Other actors in the governance system set at upper levels also are part of the unit of analysis in this context and can strongly affect the urban resources to cope with floods and droughts, nonetheless our perspective, as explained in the previous chapters, focuses on the urban level institutional actors. The focus on the jurisdiction of disaster risk management and not of the overall governance context should also assist in drawing the line of distinction between our case and the unit of analysis of local governance itself.

Research methods

In order to conduct this research, qualitative research techniques ranging from interviews to a plurality of subjects at different levels of the jurisdictional scale, in and outside the national government, to secondary data both on the field and as desk research, policy and reports analysis. Staff from different levels of the jurisdictional scale will be interviewed with the purpose of identifying which barriers and effects the actors involved in the urban DRM governance system directly perceive or indirectly describe.

Furthermore, individuals from several non-governmental organisations that have worked with the Hargeisa municipality on the topic have been contacted, both from local and international NGOs and UN agencies in Hargeisa. Besides obtaining the specific knowledge on the barriers that were faced on Hargeisa, recording the different perspectives allows a comparison of the information obtained from the Hargeisa Local Council and the other actors regarding their relationships with one another and with the UNDP DDMC implementation project. Furthermore, external opinions from local experts among journalists and public administration professors of Hargeisa University will be looked for, in an attempt to curb the issues of validity of the information gathered through the interviews process. Given the nature of case study research these methods are deemed compatible with the necessity of in depth analysis of the subjects involved and of their behaviour with one another in the field of disasters preparedness and management. Furthermore, they allow the in depth analysis into how the barriers have operated and were generated, as this information is not necessarily factual or directly observable.

Respondents for primary data collection have been selected among a limited number of possible candidates, as only those directly involved in institutional relations with the local government officials of Hargeisa and working in the disaster risk management for adaptation to climate change field could possibly know of the topics of this thesis' enquiry. Furthermore, no available record of these was accessible online or through official or unofficial channels. Given the small domain of knowledge-holders and the qualitative nature of data involved, purposive sampling process could be initiated

thanks to email communication with key contacts already present in Hargeisa, who in turn indicated the new contacts in a snowballing fashion (Black, 1993). The first key contacts were found in UNDP's staff, among journalists and the NGO Candelight, and they directed me to personnel in other offices. However, an unavoidable limitation is the coincidence of the fieldwork period with the Ramadan period, affecting the direct availability of interviewees.

As we set out to understand relationships between levels, the respondents will be stratified in three different quotas, whether they belong to

- the urban level of government;
- to upper levels of the national government or
- to the non-governmental sector, including both NGOs and international agencies.

This, in order to capture and cross-check not only vertical relations on the jurisdictional scale, but also potential power, resources or competencies distribution interactions taking place in the governance of disaster management for climate change adaptation. For every quota, at least five single interviews will be conducted, in order to bridge the gap between the individual sources of data collection and the institutional character of the units of analysis (Yin et al. 2003) and, in a cross-checking perspective, to reduce the subjectivity of the information acquired. The various Directors of the Ministries where the most easily accessed, as the international agencies communication resources have proved more actively engaged in being available as first entry contact.

In order to reduce risks of subjectivity and loss of validity throughout the research phases, fellow researchers have and were consulted throughout all phases. In order to balance the limitations generally set in terms of validity and reliability, multiple methods of data collection will be adopted, as both interviews and secondary data collection will be used in a triangulating and a cross-checking perspective, in addition to the purpose of gathering new knowledge.

Given the nature of single-holistic cases, we aimed at an in-depth exploration of the topic, hence conducting semi-structured interviews with respondents and unstructured interviews with key informants. The respondents were initially selected based on their role in the governance system for DRM in Hargeisa and their distribution along the levels of the jurisdictional scale, ranging from community level to international UN agencies, as reported in the quotas in the previous chapter. However, not all respondents that had been contacted beforehand managed to follow-up, as Ramadan working hours reduction strongly limited the availability of respondents, and meeting middle level staff was not always possible.

Furthermore, a rather informal standard of communications in the governance system suggested from the beginning of the fieldwork that email and telephone calls to set appointments could prove useless in actually obtaining them, strengthening the case for a snowball sample and scouting of respondents by key contacts in UNDP and in NGOs in touch with the institutions. Access to municipal actors was possible through the municipality's planning office, which was not available for interviews but provided us with a brief and partial summary of the municipality's structure and the contacts of other departments. The limitation due to Ramadan certainly affects the duplicability of this study. Anonymity was agreed before all interviews, thus the respondents list includes only the organisations from which respondents were selected.

Table 1 Respondent's organisations

1	UNDP – DRM office	Non- government quota (international)
2	UNDP – Joint Programme for Local Governance office	Non- government quota (international)
3	UNOCHA	Non- government quota (international)

4	FAO SWALIM (Somalia Water and Land Information Management)	Non- government quota (international)
5	OXFAM NGO	Non- government quota (international), 3 respondents
6	NAGAAD- TISQAAD NGO network	Non- government quota (local civil society), 2 respondents
7	CANDLELIGHT for Environment, Education and Health NGO	Non- government quota (local civil society), 2 respondents
8	HARGEISA WATER AGENCY	Urban government quota
9	HARGEISA LOCAL COUNCIL – department of Social Affairs	Urban government quota
10	HARGEISA LOCAL COUNCIL – department of Land Planning and Urban development	Urban government quota
11	HARGEISA LOCAL COUNCIL – department of planning	Urban government quota
12	MINISTRY OF PLANNING	National levels of government quota
13	MINISTRY OF WATER	National levels of government quota
14	MINISTRY OF ENVIRONMENT AND RURAL DEVELOPMENT	National levels of government quota, 2 respondents
15	MINISTRY OF PUBLIC WORKS AND TRANSPORT	National levels of government quota
16	NERAD	National levels of government quota

Twenty-one people were interviewed, eventually the quota for the urban government representation was not fully reached and only four interviews were conducted instead of five, with Hargeisa Water Agency, with the Social Affairs department, with the Land and Urban issues department and with the Planning department. Half of them lasted less than the scheduled one hour because of lack of available time in respondents. As far as the non-government sector is concerned, both international and local actors were involved. Representatives for international agencies involved in DRM issues were available only from those agencies standing in Hargeisa (many have offices in Nairobi, Kenya and travel in Somaliland only when needed) including UNOCHA and UNDP – where two officers, one for DRM issues and one for local governance were interviewed separately, in addition to the international NGO OXFAM. In addition to these actors, in order to address the risk of not obtaining sufficient or adequate information and to cross-check, local actors such as journalists and public administration professors in Hargeisa's university system were contacted as informants. Their contribution contributed to understand not only the direct problems of urban DRM but also in widening the scope to better understand the role of the context and the past steps of the processes for adaptation and DRM.

Despite all the interviewees from all quotas being Somalilanders or Somali ethnics, both from diaspora and not, only two local NGOs were found to be active on the topic of DRM in the city: Candlelight for Environment, Education& Health and NAGAAD, both of whose staff kindly shared their wide experience in dealing with local and national institutions on environmental topics. The latter is an NGO network of more than 35 local NGOs, from which TISQAAD spinned-off, as an

umbrella organisation for all environmental NGOs in Somaliland, but its activity status remains unclear.

Regarding the quota for those levels of national government above the urban, interviews were conducted with high-level personnel of: the Ministry of Planning and Development, Ministry of Environment and Rural Development, Ministry of Water Resources, Ministry of Public Works and Transport and NERAD, as they emerged as the relevant line actors mentioned in urban disaster prevention. In light of the lack of staff in NERAD's offices and the big role of its leadership in its overall activities, only top level personalities were available for being interviewed.

Limitations

The research suffered from several types of limitations. Firstly, budget issues limited the possibility of a longer stay. Furthermore, prudence in setting the departure date suggested avoiding the occurrence of the date on which the elections were planned for, before national institutions decided to postpone them. The postponing by national institutions of the election date did not seem to prove relevant at all in the rather high security perceivable in the city. The reduction in the time available on the field left less space for proper observation as data collection method. However, my previous work experience in the region and studies on the history and current affairs of the country proved useful in establishing an environment for critical and credible conversations and interviews, reaching beyond superficial arguments and socially acceptable answers.

A big limitation came from the occurrence of the available field time window with the month of Ramadan, which strongly reduced the availability from offices for interviews. The increased prayer time, fasting and reduced working hours proved a big obstacle in reaching out especially to the busiest actors such as the Hargeisa city Mayor, or the representatives of the ministry of Interior and from the ministry of Agriculture, or of the bustling private sector economy, which we hence did not manage to meet and interview.

A further limitation, as mentioned by other scholars, is the lack of accurate data when discussing numbers and percentages and when retrieving and referring policies, documents and written data in English. Inaccurate or missing information on years and authors are a problem to be found not only in researchers outputs but also in that of governmental and trans-national institutions.

As explained in the previous chapters, a series of conditions among which institutional weakness hampers the possibility of having accurate measures. In addition to this, the political meaning implied by the definition of a population under a *dominium* adds a layer to the criteria for interpretation of conflicting information. The different administrations, not only from Hargeisa or from Garowe - in Puntland- but also from borderland areas in between them like Khatumo, report different borders and areas under the national control, without necessarily exercising effective authority on the territories nor recognising neighbouring authorities' borders.

Thus this situation reflects on the availability of statistical data since 1981. That year is when the last national census data was collected in Somalia. However, that raw data was not analysed or published as it was found together with reported doubts on the general accuracy of the process (UNDOS, 1997). From there on, especially after the civil war, Somalia had no statistical machinery able to systematically compile data for the nation, showing once again the problematic legacy on Hargeisa from the central Somali state and prescribing a certain distance from all statistical data available (Hoehne 2015; Vaidyanathan, 1997).

Given the weak access to translated policy documents and to information on the institutional environment, secondary data will be researched within the availability of every quota of respondents and evaluated on the basis of time and space relevance, quality and accuracy of the information and relevance to case of Hargeisa's disaster management. The original purpose and audiences of these

documents will be kept in consideration, together with depth of coverage, the credentials of authors and of their sources, and their follow up in actions.

Given the little extent of theory available on the explicit interaction between barriers and multi-level scalar interactions, semi-structured interviews would allow us to obtain the case-specific qualitative knowledge and in-depth understanding not only of which barriers actually took place and which relationship occur, but also on the mechanisms behind their interactions, causation and effects of the adaptation process outcome. The same is valid for the governance system and relations on the jurisdictional scale, where the lack of specific scientific literature on environmental governance in Somaliland and the altogether weakness of available sources of information on institutional dynamics and legislative frameworks call for an analysis of the relevant actor's first-hand knowledge on the topics. In fact, not even the Official Government Gazette does not have its own website, nor are there legal-focused libraries, research traditions, or journals specific for Somaliland (Farah Hersi, 2009). The only large collection of legal resources, from which both local journalists and international organisations cite references, is the online portal of Somalilandlaw.com, which is in fact supervised only by the Somaliland diaspora and presents laws translated to English. For this reason, in order to further cross-check the accuracy of policy documents, to reduce possible bias in the selection of documentation and to increase internal validity, a second research on policy documents will take place on the field, in addition to the desk research conducted from the Netherlands. This should allow to overcome the barriers of permission to access and inaccuracy of online resources, in addition to updating the information available on governance structures.

Nonetheless, given the little existing literature and time available for the research, firm transferable conclusions will hardly be reached at this moment. This case is rather an opportunity to seize profounder understanding of barriers, their origin and potential space for influence over them, in the governance of urban disaster risk management. The history and current situation of Somaliland make it a rare and extreme case where the conditions typical of developing countries, such as little institutional capacity and big backlogs in terms of economic development and fiscal base are in combination with statehood fragility and the absence of formal bilateral cooperation possibilities. This highlights the potential role of cross-level interactions on the jurisdictional scale and of barriers in affecting adaptation. Furthermore, its absence of recognition, its extremely strategic geopolitical position and the complex regional dynamics in which it is embedded make Hargeisa a case difficult to compare to other cities. The current research on barriers and multi-level governance offers a wide and diverse empirical and conceptual base. However, only few studies explain the occurrence of barriers (Eisenack et al. 2014). Furthermore, the little extent of currently available knowledge on the specific combination of barriers, scale relations and international cooperation – as that applied in local multi-laterally funded projects –also suggests an increased value for in depth research of a single case at this moment in time. Despite going to the detriment of generality and external validity, a single case study seems appropriate as the wealth of empirical information brought about in principle will not allow generalizations for other cases, but could build the basis for new adjustments to the theory of barriers and scalar politics (Van Thiel 2007; Yin 2008).

Data analysis techniques

The interview transcripts were coded looking for explanations regarding the challenges faced by the city in the urban governance system of DRM. The challenges were identified based on Oberlack and Ekstrom's taxonomy (2013). However, as we took the perspective of institutions, we kept into consideration also some of those that Moser and Ekstrom consider cross-cutting issues - leadership and information and communication, to complement the taxonomy. For practical and logical reasons we slightly altered the categories when coding interview transcripts for barriers, introducing also a specific code category "other" for barriers that were not foreseen by research and for capturing the effects of barriers as described by respondents, which are reported in the paragraphs of the barriers to

which they are referred to. The interviews were transcribed in chronological order as soon as they were conducted, and coded in the same order looking for the abovementioned barriers.

Starting from barrier categories, considering these broader barrier categories as units, we measured their recurrence through the interviews. We will describe barriers both using the 'count' –which reveals the absolute number of times the code category has been assigned to segments of text, regardless of in how many interviews it appears – and the 'cases', showing the number of interviews in which the code is present at least one time, with no consideration for repeated occurrence of a code within the same interview. The difference between the two is that looking at the number of cases allows giving the appropriate relevance to a barrier in light of the very common occurrence among interviews of repeating more than once the same point. This was very common for instance when it came to the lack of funds, which in these times and especially in developing countries, is a very easy observation to make. Looking only at the count of codes might in fact overestimate the relevance of a barrier category, especially in comparison to other.
The same procedure was used to detect the respondents' indications on the effects the barriers have had on both urban DRM and adaptation to climate change, and specifically the implementation of DDMCs.

Chapter 4: Research Findings

As presented in the operationalisation framework in chapter three, we set out to understand what barriers take place, why they are there and how they affect the process of adaptation in Hargeisa, specifically in its action of implementing the district level of the Somaliland national DRM structure. As the situation of Somaliland represents a rare case of de facto state, a series of contextual factors to the governance system of the city are explained as to ease understanding of the dynamics around the institutional response to droughts and floods in Hargeisa.

Somaliland's context

The fieldwork in the Horn was preceded by a first stop in London, in one of the only two diplomatic missions that Somaliland has abroad. Besides an office in Addis Ababa, there is the office of the Somaliland Diplomatic Mission, which, if presented with the proper documentation, including contacts of a local reference person, releases single and multiple entry visas. The process resembles that of any other recognised country, besides the fact that Somaliland delivers a visa in a mere half an hour, which is weeks less than the average for other African states. The efficiency of Somaliland's bureaucratic system is to be extremely cherished, especially when in presence of a state not formally recognised. As another confirmation of the *de facto* nature of the state based in Hargeisa, with the XXI century Somaliland has undergone a number of democratic elections at all levels of governance, from presidential to local councils, that have been praised as transparent and democratic (Bradbury et al. 2003). Notwithstanding issues of media freedom and disputes with the neighbouring government of Puntland (a semi-autonomous region of federal Somalia) over border regions, the national institutions have here a more sound foundation compared to Mogadishu (Pijovic 2014). Municipal and district elected bodies that are mandated to respond to the local electorate fostered a precious bottom up recognition of state legitimacy crucial to enhanced security. In the urban context of Somaliland there are in fact three different legal institutions that are involved in conflict management: Shari'a courts applying Islamic law, state courts applying official law and traditional councils of elders ruling according to customary or informal law (Stockbrügger, Abdi et al. 2010), confirming the non-traditional nature of the Somaliland's nation-state.

Because of the peaceful context, unsurprisingly the capital city is attracting migration from diaspora, Internally Displaced Persons and from Somaliland's rural areas. Hargeisa is Somaliland's most populated city and is divided in five districts, each of which is sub divided into several sections/wards. Hargeisa is a distribution centre of light manufacturing industries and trade, but the main livelihood sources for the urbanites, besides remittances, are petty trade, construction and qat trading. Significant and deep levels of urban poverty persist, reaching 30% of the total urban population (WB, 2013). However, it must be kept into consideration that all reported measurements are only estimates, not necessarily updated or valid.

Hargeisa's social system reportedly has a peaceful multi-clan setting, in contrast to other cities like Burao, which still experience clan tensions. However, even in the capital city, during the reconstruction in the Nineties, water, electricity and telecommunication infrastructures as well as social services such as education and medical care could only be established through private individuals, communities and the growing Somaliland business class who provided most of the organization and financing given the weakness of the state. If this fostered a positive collaboration between the municipality and the private sector, civil society, despite its compared well-off position, Somaliland is in fact still to be considered poor and fragile.

The responsibilities for urban infrastructure and services are being pushed towards the competence of the local level governance institutions, in a process of decentralisation championed by the Vice President of Somaliland. Municipal authorities were delegated numerous responsibilities in the decentralization process that was central in Somaliland's democratisation, but have not been equipped with resources or skills to effectively carry them out. The call for decentralisation has hence not been

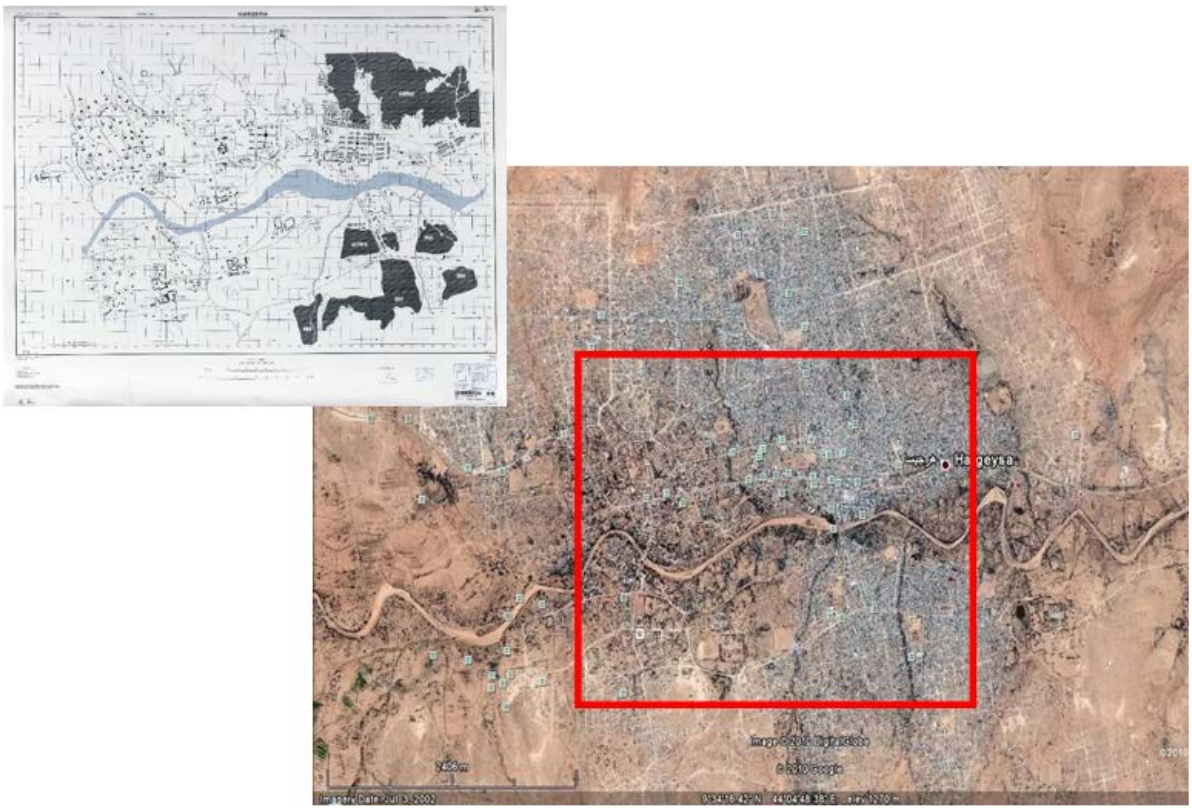
followed by the trickle down of resources the lower level of the scale leaving the urban level with lower capacities.
Despite not being recognised as an independent state, it is to be noticed how, with the wave of securitization after 9/11, traditional international donors realised the increased need for effective management and actual presence on the Somali territory. This led them to the opening of new channels of communications and funding with Somaliland, treating it as a state structure while not formally recognising its state legitimacy. This is the so called 'second track' strategy for which a number of states has begun a structured dialogue on development with Hargeisa and some UN agencies and international NGOs have opened offices in the capital city, regardless of the legal situation of the country. This evolution of the international community's position on Somaliland has given the national government structure new sources from which potentially redistribute to its lower levels. Somaliland is in fact entitled to the Somaliland Development Fund, set in cooperation with some western states in the past three years.
These and other reasons have driven Somaliland to join Somalia, with a Special Agreement, in taking part to the New Deal Partnership for fragile states. This aims at operationalizing the Peace- and State-building Goals under the Busan Framework, also in the attempt of re-organizing the inflow of Official Development Aid (UNDP, 2013). This partnership represents an exception to the usual separation, as Somaliland tends to never sit at the same table with Mogadishu's representatives because of the different visions the two have on the borders of Somalia.

Disaster Risk and Adaptation Governance system in Hargeisa

The trip to Hargeisa fell in the warm, dry and windy season of *xagaa*, which spans from July to August, but the arid ground was nonetheless hit by rain burst towards the end of July. As mentioned in the problem statement, the arid country is unsurprisingly vulnerable and exposed to flash floods and recurrent drought not only for geographic reality but also because its economy strongly relies on natural resources direct use value. Despite their extremely different nature, both the excess of rainfall in the short-term and the consistent lack of rainfall for a prolonged period hit the country of Somaliland and its cities, hampering water access and availability, damaging livelihoods and constraining general and climate specific adaptation capacity, for both individuals and institutions. In Hargeisa, which lays at around 1200 meters on the sea level, stagnating waters are not a problem, on the contrary, the occasional amount of rainfall can and has already, swept away and damaged properties and crucial means of development. As visible from aerial photography, the city of Hargeisa is divided by a dry, seasonal river, which is connected to Gee Deble region, where the natural water sources for the city are located and proceeds further outside the city into rural agriculture and pastoral areas. The city road infrastructures are poor, and only the most trafficked roads are paved in concrete. To worsen conditions in case of flooding, English colonisers reportedly built the drainage system when they moved the capital of their Protectorate from coastal port of Berbera to Hargeisa in 1941. Despite the lack of accurate data on the population fluctuations in Somalia, the inadequacy of such drainage infrastructure to the level of current days population can be swiftly showed by a graphic comparison of the built areas in time, comparing 2010 with a map of Hargeisa in 1968 in figures below. In addition to the drainage system, infrastructure for water is also extremely poor and dated. The water reservoir, from which the little public water is taken, was built by the Chinese government between the Sixties and the Seventies. Since then, little maintenance has been done by the national government. The only implemented measures that were recognised as urban DRM among those implemented in Hargeisa have been exactly those activities for flood protection of the water reservoir, which is the main source of water for Hargeisa, carried out by international organisations in conjunction with the national government and line ministries. Hence, only roughly 30% of the city has access to water through public infrastructures, again specifying how all statistics mentioned have to be taken with a grain of salt. The remaining 70% fulfils its needs through the private market, hence subjected to strong fluctuations in prices when floods or droughts come and potentially affect the quality and quantity of available potable water. This, as will be discussed later in more depth, is an initial sign of the weight recent *history* has on Somaliland's current situation.

Figure 7 Hargeisa city map. The Perry-Castañeda Library, online archives, Texas University, 1968.

Figure 8 Hargeisa, aerial image, Google satellites, 2010



As all respondents from all quotas underlined, the topic of urban management and preparedness for droughts and floods is new to the governance system as the most affected areas are those in the countryside where the bulk of the national economy is originated, through livestock trade and agriculture.

In the city the impact of droughts is felt rather indirectly, through the shortage and spike in prices of those goods imported from the rural areas such as vegetables, milk, meat and other goods, but also with the arrival of rural nomads displaced by the lack of water and deprived of their cattle. It is to be considered that Somali kinship ties imply that no one is only an urban dweller, and everybody has "family" in the rural areas, so in times of drought or flood the relatives come to stay together in the city, putting more pressure on urban households, which already are among the most active fundraisers when disasters hit. This was showed not only by the repetition of this concept by respondents from all quotas, inside and outside national institutions, but also by the specific example of 2005's floods in Hargeisa. At that time, the money for the first response was collected from voluntary contributions from the local communities, gathered through the mosques or through social contacts, or from private businesses contributions.

The last flood that was mentioned as a disaster hitting Hargeisa was in fact that of 2005, where the seasonal river overflowed, destroying a series of businesses and hotels in the city centre, houses and shacks and one of the two main bridges in the city and continuing the damage in the countryside. Many parts of the city, including United Nations and NGO offices were flooded but are nonetheless

areas where now, new construction development is occurring. The majority described the impact of floods as a minimal threat, explaining and justifying on the basis of this gap in awareness, the absence of international development agencies in the immediate response activities. Nonetheless, communities and voluntary contributions from families and businesses where mentioned as crucial also for the immediate response to the 2011 drought which hit the region of the Horn and turned into famine in many areas. Regional international institutions like IGAD have, since the latest drought, officially established spaces for regional communication and sharing across states of the Greater Horn of Africa states, but the average life of such organisations was reported by respondents to be rather short.

A secondary data research was repeated from the field in addition to the desk research from the Netherlands in order to deepen the answer to objective 1.1. Little additional material was found on urban DRM beyond that already presented and described in the first chapter. However, numerous policies for fighting desertification, droughts and famine are there, and despite not all of them reaching the implementation phase, still they show a general attention to the impact of climate change and natural disasters. The biggest impact of climate change and natural disaster in Somaliland is felt in the rural areas of the country, which hence take priority over the urban context not only in the number of projects but also in sector policies of environment, DRM and climate change adaptation, where rural problems are always explicitly mentioned. No reports of activities for such field in the urban landscape have been found, besides those involved in flood protection of the only usable water reservoir, 20 km far from Hargeisa, as a way to protect the already scarce source of water of the city.

When instead asking for a source of documentation on policies and regulation documents, all respondents, including some from ministerial positions, confirmed the online portal of somalilandlaw.com as the main reliable source for retrieving policy and official material translated in English. The topic of droughts has been far more mainstreamed in the past 15 years compared to floods in terms of fight against desertification or soil erosion, or of food security, agriculture and resilience. Floods are instead not yet fully on the map of the governance system or of society's attention, but nonetheless formally fall under the competence of NERAD.

The law institutionalising NERAD, law No. 35/2006 (cited by some international organisations as 35/2007 as it has been passed by both the Houses of Parliament in 2007) is as a matter of fact the most mentioned legal reference among the whole 16 interviews. This law absorbed the ruling of Presidential Decree 189/2003 with which NERAD was first conceived. Despite it formally covers the whole structure from district up to national level of the National Disaster Risk Management Authority (another name for NERAD) in the office of the President, not all of its other indications have been implemented.

Same destiny had Somaliland's National Policy on Disaster Risk Management of 2010, which also reiterates the focus on rural areas and drought impact, adding other type of disasters such as conflicts, livestock diseases, pest infestations, pollution, alcohol, drugs and qat (a recreational drug very common in the Horn and Yemen) to the list. This law clarifies how the only sources of revenue for NERAD, including all of its branches, are the funds allocated from the yearly government budget for NERAD authority, together with sectoral allocations from ministries departments. The policy adds a National Disaster Trust Fund, to which the public and the private sector, International development partners, Non-governmental and Civil Society Organization and the community at large can contribute. However, neither the personnel in NERAD, nor in other institutions ever mentioned this fund, casting reasonable doubts on its existence. The policy also specifies the need for preparedness, disaster mitigation measures, monitoring and the intention to establish a specific fund, easily accessible in case of disasters, whose absence was lamented by the respondents. It also shows a distinct tendency for centralised leadership as it mandates the national government and NERAD to enhance community coping mechanisms and disaster prevention instead of planning for a decentralised way of coping with local level DRM.

Both the documents refer as top line institution the National Disaster Risk Management Council or (also mentioned by respondents as consult or committee) chaired by the Vice-President, with Ministries of Planning, Health, Pastoral and Rural Development, Livestock, Water, Agriculture,

Family Affairs, Public Works, Interior and NERAD. This institution is called to act when a disaster hits and plays a strategic role in coordinating national response across the various interconnected sectors. Secondly, the Disaster Management Steering Committee is another institution that responds to the previous and is chaired by NERAD's general director, with again line ministries but especially the relevant addition of international organisations and NGOs as crucial resource mobilizers. Although these institutions are distinguished in the policy document, where no real details and explanations are available, multiple respondents confused one with the other or altered names, acting as if in practice the distinction was not really in place. The common distinguishing trait was the inclusion of international actors and the permanent nature of the steering committee, compared to the emergency nature of the National DRM Council. Nonetheless, the policy of 2010 itself reports that some duplication and overlap is occurring between the Steering Committee and the National Council.

Beneath the national level, the policy says there should be Regional Disaster Management committees (RDMCs), interacting with regional representatives of ministries and international organisations. Further closer to villages, the policy shows how District Disaster Management Committees (DDMCs) are meant to interact with local authorities and elders, but again no systematic organisation is given. Respondents from NERAD ensured that Terms of Reference had already been settled for these units, but no access to them was granted. District contingency funds are also among the measures of the policy. However, only several RDMCs have been implemented (one respondent mentioned that only three are in place out of 13 regions) and some consist of only one staff member, with no office or support. Nonetheless, is reported to be involved in the information sharing with Regional governors and with NERAD at the national level. Only a few DDMCs have been implemented throughout the country, only in rural areas and by hand of NGO as projects for community trainings and resilience. Regarding their integration in the system of concern of disaster risk management, the policy tries to establish links between the different levels by demanding that regional offices of NERAD collaborate with regional authorities such as the Region's governor and line ministry's regional offices. Throughout the interviews conducted, the only three implemented RDMCs appeared to be increasingly relevant in collecting and circulating information inside NERAD's structure.

Furthermore, the policy does not specifically describe competences distribution for disaster response in urban scenarios, as confirmed by respondents explaining that in cases of disasters in Hargeisa, the Mayor has been called by NERAD to participate in the emergency meetings as in the big floods of the 24th April 2005 in Hargeisa (UNICEF, 2005). Based on the responses from the interviews, half of the respondents associated responsibility with disasters in the city with the municipality, whereas the other half with NERAD. The directly involved actors however both confirmed that the official mandate would fall on the municipality's shoulders and NERAD would have only an advisory role, unlike what stated in the written policies.

A different institution, however not of national origin or instated by a national policy, is the DRM Forum, called by someone DRM Working Group. Chaired by NERAD and co-chaired by UN-Office for the Coordination of Humanitarian Affairs, it is the main reference point for sharing of disaster risk management practises and information, and seeds partnerships with FAO, including FAOSWALIM, WFP, UNDP and local NGOs for the line ministries.

Regarding secondary data, the role of FAO's SWALIM unit was confirmed in its mandate of collecting and sharing information on water and land management, including through a system of sensors across the city's dry river basin. SWALIM also installed a flooding alert system, which is connected directly to NERAD, functional to its leadership in emergency management. This data covers Somaliland but also Puntland and South-central Somalia, and allows access to a wide range of live data, reports, bulletins, that are shared timely with national (Hargeisa) level institutions. The DRM forum was in fact described as a decision-supporting tool for national institutions, although confusion arose as some of the respondents who mentioned the DRM forum did not mention the Steering Committee, some mentioned both as distinguished organs, some mixed the two names and competences, underlining how confusion reigns among the different actors institutional organisations perceptions.

Based on the policy review and interviews, the fragility of the existing legal framework for the urban context of floods and droughts was confirmed as presented in the first chapter. As showed, policies and institutions for drought and flood preparedness and management are formally there and structured from the national to the district level. However, as a respondent from top level management said: "sometimes, what is on paper is not always so in reality".

As evident from the analysis, the top levels of the jurisdictional scale appear to have structures for an organised interaction on topics of DRM both for decision making and decision support. The national level bodies defined by the policies are strongly reliant on international aid and they have no structure to allow urban local government to systematically interact or contribute to DRM in its competence. As the decentralisation process along the jurisdictional scale is yet to reach significant progress, local institutions are made even weaker, lacking resources and the capacity to feedback to upper levels of government, as shown by the mono-directional arrow between the city and the national level. While the international donors cooperate with line ministries and Nerad's top management in organised bodies such as the DRM Forum or the National Disaster Steering Committee, the city is left at the receiving end of the relationship on the national scale. As shown in figure with the shading of the colour of the arrows, if the regional level of the scale is enjoying a minimally implemented channel to NERAD through the few RDMCs, the local government in the city is in practice isolated from the DRM scale, which is missing its only structured entry point for urban actors inputs on DRM. The connection is there on paper, hence the arrow links the city and the DDMC, but as the policy is unsubstantiated, the arrow is empty of factual meaning and hence of colour. As the DDMCs are the only body planned to connect – although in an unspecified manner –NERAD with the local government, their absence implies that at the moment there is no actor specifically mandated for urban DRM in Hargeisa and no systematic way for any actor to discuss issues regarding floods and droughts specifically for the capital city.

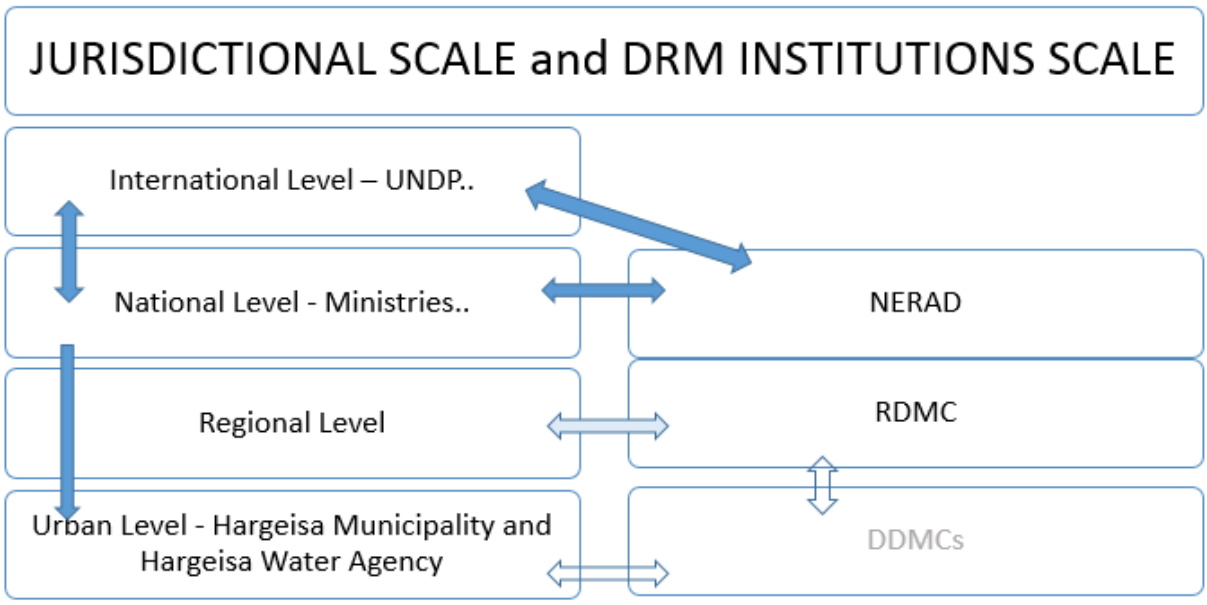
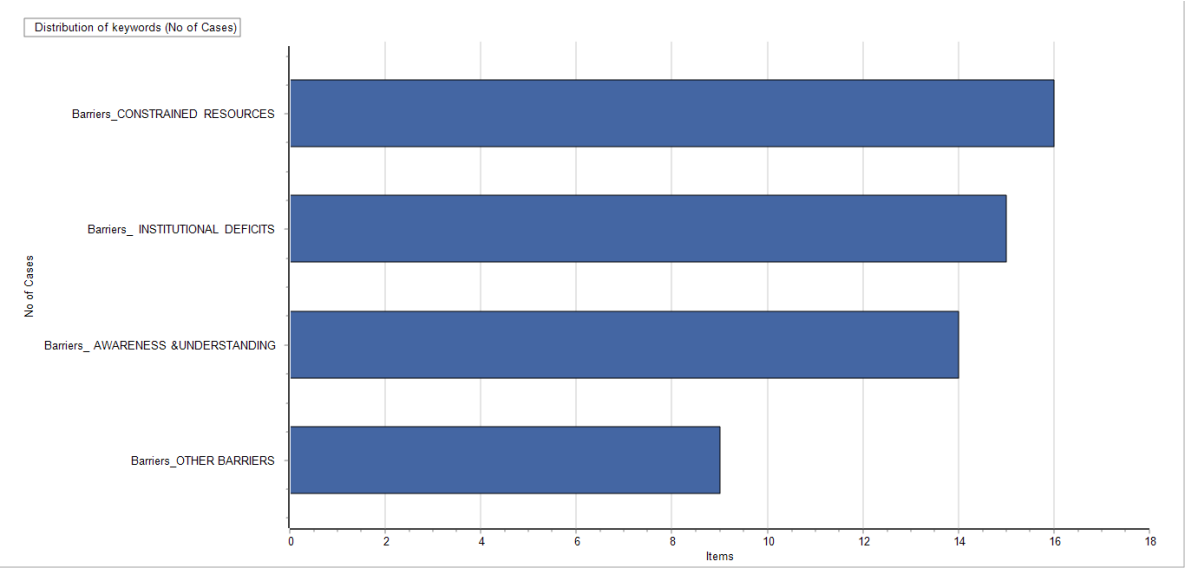


Figure 7 Governance in Hargeisa: the Jurisdictional and DRM scale

Barriers

As referring to objectives 1.2 and 1.3, in order to understand barriers, the interview transcripts were coded looking for explanations regarding the challenges faced by the city in the urban governance system of DRM and their effects. The categories used to group barrier were: institutional deficits, limited awareness and understanding, constrained resources and non-climatic stressors and goals (Oberlack and Eisenack 2013). However, the perspective of institutions is at the heart of this reasearch, some of those that Moser and Ekstrom consider cross-cutting issues - like leadership and information and communication, were used to complement the taxonomy. For practical and logical reasons we slightly altered the categories when coding interview transcripts for barriers, introducing also a specific code category “other” for barriers that were not foreseen by research and for capturing the effects of barriers as described by respondents. The interviews were transcribed in chronological order as soon as they were conducted, and coded in the same order looking for the abovementioned barriers. Starting from barrier categories, considering these broader barrier categories as units, we measured their recurrence through the interviews.

Chart 1 Barrier Categories occurrence (cases)



As expected and explained in the literature review, the issue of constrained resources is unsurprisingly the most mentioned. Institutional deficit barriers are not of secondary importance and as institutional issues are more elaborate and hence prone to longer descriptions, it should not surprise how their word count surpasses that of constrained resources despite the different ranking when observing cases numbers.

The categorisations proposed allowed for a simpler overview, but does not necessarily assist us in a deeper understanding of the issues challenging the urban adaptation process. For this reason, it is worth breaking down the data collected in single barrier typologies following the categorisation proposed in the operationalization and further explore the specific issues found in Hargeisa. The un-grouping shows how the category of constrained resources still tops the ranking for absolute number of counts- thereby including the times respondents repeated themselves - but it is to be highlighted how the institutional deficit of the absence of DRM among the priorities of the actors is also mentioned by the almost totality of respondents.

Table 2 Barrier types coverage

Category	Code	Count	Cases	Nb Words
Barriers_CONSTRAINED RESOURCES	Constrained financial resources	37	13	1543
Barriers_CONSTRAINED RESOURCES	Lack of reliable data and information	35	13	1159
Barriers_ INSTITUTIONAL DEFICITS	Conflicting development goals (other priorities)	20	13	682
Barriers_CONSTRAINED RESOURCES	Constraints on trained labour	31	12	1196
Barriers_ AWARENESS &UNDERSTANDING	Limited awareness among stakeholders	22	10	1100
Barriers_ INSTITUTIONAL DEFICITS	Dysfunctional distribution of political and administrative competences	28	10	1093
Barriers_ INSTITUTIONAL DEFICITS	Lack of coordination between public agencies	24	10	1079
Barriers_ AWARENESS &UNDERSTANDING	Limited awareness among decision-makers	18	9	920
Barriers_ INSTITUTIONAL DEFICITS	Short-termism	12	8	735
Barriers_ INSTITUTIONAL DEFICITS	Dependence upon national policies	10	7	418
Barriers_OTHER BARRIERS	other barriers	22	6	1208
Barriers_ INSTITUTIONAL DEFICITS	Slow reaction	10	5	536
Barriers_ INSTITUTIONAL DEFICITS	Leadership	5	4	175

Constrained resource barriers

Data and Information

Regarding the barrier of the absence of reliable data and information, our assumption was that of missing available and scale relevant data for climate change impacts and vulnerability of the city of Hargeisa as found in other cases of local planned adaptation (Amundsen et al. 2010; Carmin et al. 2012). These were reported to be in fact missing, but a wider situation was depicted. The majority of respondents held the two issues of data and planning very close. They repeatedly associated the lack of accessible means for weather forecast, affecting both preparation for droughts and for floods, with the lack of specific vulnerability assessments, strategies, contingency plans, or dedicated masterplans for the city of Hargeisa.

The quality of the town planning was also mentioned among these issues. Thanks to an interview conducted inside the municipality offices, we could observe how land planning tools available to city management include paper maps and geometry's tools, which could result in less straightforwardness in processing land management and less easy communication of outputs compared to computer software. The absence of available specific data and hence strategies for floods and droughts was mentioned as barrier both for the municipal level in the city's offices and in the actors in the water sector, and both at national ministerial level.

A main barrier is the lack of a general census, as the amount of population residing in the city remains unclear; four respondents mentioned to be between one and two million people. Whether this amount

of urban dwellers includes refugees from the rest of Somalia, Yemen, the Horn of Africa, or the regional nomadic populations is not clear.
The further problem with this general lack of accurate data, especially when population is concerned, is the political value and use of these numbers. As mentioned in the first chapter, borders of Somaliland are far from being undisputed, hence the political actors involved in pursuing authority have an interest in cooking the books in favour of their political unit, be it Somaliland, the autonomous region of Puntland, or actors from those contested borderlands seeking third autonomous positions. In our eyes, this represents a further motivation for investing in development at city level, where the political conflict is certainly not deleted but at least reduced in name of the unity of the city power, and where clan settlements have proved, at least in Hargeisa, to be able to grant a higher security level.

The lack of proper climatic record and of historical series was also registered as an obstacle to management in the city. The information management activities such as taking live records of rainfall, wind and temperature, in addition to the monitoring of sensors recording the gauge of the river inside and outside the city, are carried out by Faoswalim. Their outputs are available freely online at the website www.faoswalim.org , comprising also Puntland and south-central Somalia. The reported lack of data increases the perceived cost and reduces comprehension of the benefits of disaster preparedness, in addition to making the use of resources less efficient and increasing maladaptation incentives in the city. The relevance of the lack of quality information management, in addition to the problems in accessing existing information, showed to be closely perceived by respondents to capacity of institutions to plan ahead using such information, or to look for those information as planning is avoided.

Trained Labour

The barrier of constraints on trained labour is a critical issue in the governance system of Hargeisa and has proved to affect the implementation of the policy for urban DRM as cited in many cases of literature (Ahammad 2010; Hoornweg et al. 2011, Satterwaithe 2011). The main actors for which qualified and trained staff is missing are the Municipality and NERAD, according to the answers of respondents across the governance system.

“NERAD has very small offices for all regions, some are only made of one person, not all of the offices are working... it's important to decentralise but they don't have the expertise, the right people, they have very limited preparedness!”

The lack of staff capacity, both as number of staff available and in terms of specific technical skills affect NERAD as its personnel is assigned and paid by the central government budget, as all NERAD’s revenues are taken from the central government budget, which reportedly holds a certain freedom in staff decisions. A further problem is that if the older generation of staff received university level education in technical topics related to agriculture, water and engineering through the Somali National University system before the civil war, a gap is described by several respondents regarding skills in the new generation.

A similar problem is found in the municipality, where technical capacity for floods and droughts are low not only among the councillors elected by the population in the district elections, but also in staff, related once again to the lack of available funds and generating less institutional activity on the topic and increasing costs.

“You should talk to the municipality, but I don't know if the staff there is qualified to understand the problem, they aren't always put there because of competence”

Given the low level of salary offered by the government, furthermore, compared to international UN agencies or NGOs, less staff is attracted and those who do decide to work in NERAD usually take it as a second job. Furthermore, as a chain effect, given the low level of capacity in the staff, international donors are perceived to be less available to entrust responsibilities and funds in light of a perceived lack of transparency, caused again by the lack of skilled staff, further lowering the chances

of sustainable development and ownership. Therefore, such a barrier is embedded in a vicious cycle causing and being caused by the lack of funds and directly affecting the capacity for information understanding and management and hence regulation production, as showed by the six co-occurrences of the two barriers. This also further lowers awareness on DRM related topics in institutions and society, which should be guided by NERAD, and its capacity for an efficient use of the available resources.

Financial resources

The issue of the lack of financial resources is seen by the majority of respondents as the root cause and effect of all other barriers. Dwindling funds are reported not only from the central government to NERAD and the Municipality, in their two separate fiscal transfers, but also from specific donations from international donors. The two issues have different facets and interconnections with other barriers such as staff constraints in national institutions and short-termism in donor project planning, and are both strongly affected by the country's poverty backlog.

International aid is reported by the involved respondents from the quota of the upper levels to be in decline for humanitarian issues, and the preference of donors for 'pure' development or 'pure' humanitarian sectors is mentioned by two respondents in the international agencies as limiting investment in DRM, which potentially connects the two issues.

As regarding the flow of resources inside the national institutions, the problem of the lack of international recognition for the country of Somaliland implies the absence of access to the financial market of soft loans for developing countries and bilateral aid. Coupled with the tendency for designing short projects, this means that the bulk funds necessary for infrastructure projects such as an adequate drainage system are not available for the institutions. In addition to this, urban DRM is also strongly hampered by the lack of emergency fund rapidly accessible at local decisional levels, forcing further time loss in reconstruction and immediate institutional response when rapid onset disasters occur. This indeed puts further pressure on communities who therefore have to self-organise and mobilise resources from their private networks within families and the diaspora.

The lack of financial resources is in fact mentioned, together with the lack of technical know-how in the staff, as the main cause for the incomplete functionality of NERAD's structure for disaster management at local level and implementation of urban DRM measures set in national policies. The low level of financial resources available to Somaliland's national institutions - amounting to 150 million USD for 2015 for the whole national government budget according to official and non-official sources - is a clear sign of how the whole country is running on limited funds, affecting hence the performance in the field considered.

Awareness Barriers

Awareness issues were widely discussed by respondents in a variety of shapes, not only awareness of climate change impacts in the Horn of Africa or of disaster risk management practises in general, but also lack of knowledge of the contents of the specific national policies. For instance, at the moment of the research, actors inside the municipality's relevant departments were not aware of both the DDMC institution on paper, nor of UNDP's intention to implement one in Hargeisa. Considering how Hargeisa's municipal administration is the relevant district-level authority, this showed a lack of communication, coordination and participation across the local and the national levels of the jurisdictional scale of the system of concern. The problem of absent awareness is often reported as a big challenge making the process of adaptation to climate change slower and generally more difficult.

The barrier type distinguishes when awareness of DRM practises and concepts is lacking among institutional decision makers or other stakeholders. Almost the same number of respondents mentioned awareness lacking among communities and other stakeholders, compared to those mentioning awareness lacking across political decision-makers involved in disaster risk management.

Among national and urban level decision makers, awareness is reported to be missing in the sense that the actors involved do not have specific managerial and scientific skills necessary for effectively managing and preparing for disaster risks. This has been linked to the generational gap in technical competences that can be observed when comparing staff who received education before the civil war and those after. Respondents attributed the lack of understanding and specific technical knowledge found among newer generations of politicians and personnel to the end of the Somali national university system and the alleged lower quality of the current education locally offered. Actors such as those at the urban level of government are the most reported for suffering from this kind of deficit. Furthermore, often respondents used a general ‘us‘ as a subject for experiencing the barriers, regardless of the position in the jurisdictional scale they held, and when asked, explained how their intended subject was ‘the Somali people’, inclusive of decision makers and not, causing a relevant amount of co-occurrences of the two specific awareness barriers.

The private sector was explicitly mentioned as lacking awareness of disaster risk management practises, namely private developers who, harvesting sand from the bed of the seasonal dry river are increasing the unpredictability of flooding in the city, or communities polluting water and increasing pressure on the cities small and old drainage system. Community awareness of the risks of floods and droughts is also constrained by the issue of land grabbing and corruption. An interviewee in fact explained how informal settlers often can reasonably doubt the reasons for which they are being held away from certain areas of town, as power is often abused by authorities to mismanage land for private profits. Hence if communities are not aware of the risks posed by floods and droughts or of the institutions and policies in place for the topic, the institutional request to vacate risky areas has a weak follow-up.

The topic of awareness is often mentioned as a necessary step for the whole of society to be aware of disasters so that the necessary pressure on institutions can be applied. Droughts and flooding are in fact widely recognised as a problem, but the problem was often framed in terms like “you cannot just say 'oh there’s a drought' but there should be something systematic that you can read and know how to address the problem” linking directly awareness to the creation of policies and their implementation.

Regardless of policies, the wide existing awareness of droughts is tied to traditional fights among Somali clans for water, as water scarcity is a problem typical of this environment and local people have coping mechanisms that are known inside the institutions (water trucking, migration, networking with urban and abroad). In the city there is however generally less awareness for floods than for droughts, except many respondents mention how rural communities close to the river, suffering the most damages, have a perfectly clear picture of the impacts of both. However, the relative low frequency of flashfloods in the past has not allowed a widespread recognition for the importance of the risks brought on by flooding. Nonetheless all respondents connect the lack of specific awareness of disasters in institutions with the lack of adequate planning for disasters and consequently to the ‘fire-fighters approach” to disasters. Conversely, several trainings on environmental awareness seem to have taken place among communities and institutions, especially at national level.

Awareness is hence unequally distributed for the two types of disasters and is lacking, in terms of awareness of the existing disasters risks and impacts of climate change both in national and local institutions and among the community and the private sector. A lack of awareness of the specific policies and measures is also observed, especially in local institutions, as hampering the process of adaptation and the specific implementation of local DRM measures.

Institutional deficit barriers

Local level DRM actions often fail to reach their objectives because of the lack of support from institutions and governments (Wisner 2001; Blaikie 2006; Allen 2006; Blackburn 2014). However, because of the nature of our unit of analysis, this category is by no means intended to distinguish among all barrier presented those that specifically relate to institutions. With institutional deficit barriers we mean those problems that by nature are embedded in institutions. Nonetheless, since our focus is on a measure of adaptation thought by and for institutions, it is clear that also the other types of barriers refer to institutions as they impede institutions from implementing the DRM policy. For this reason, the presence of conflicting development goals is considered not by a category *per se* as mentioned in the theory (Oberlack and Eisenck 2014), but rather as referred to the political agenda of the different actors involved having other priorities than disaster risk management in Hargeisa city. Furthermore, as specified at the beginning of the chapter, it is necessary to break down the categories. This is to be done especially for the case of 'institutional deficit barriers', as they hide a variety of barrier types that are not only related to one another, but are also connected to other categories of barriers and present, within each barrier, more than one critical issue.

Table 3 Institutional Barriers Coverage

INSTITUTIONAL DEFICIT BARRIER	Count	Cases	Nb Words
Conflicting development goals (other priorities)	20	13	682
Lack of coordination between public agencies	24	10	1079
Dysfunctional distribution of political and administrative competences	28	10	1069
Short-termism	12	8	735
Dependence upon national policies	11	7	430
Slow reaction	10	5	536
Leadership	5	4	175

Conflicting development goals

"There are so many other priorities, *sooo* many other priorities! So one cannot allocate [resources] for everything, you know.. and everybody knows the problem is there, whether they are the central government or the local government, the problem [of floods and droughts] is not hidden, it's clear and everybody knows, but other problems are there"

The presence of conflicting goals and hence the low ranking of urban DRM in the agenda is mentioned in the majority of cases and by respondents across all levels of the jurisdictional scale, both because of the low attention disaster preparedness obtains, but specifically for its urban characterisation. If the impact of droughts and floods in the rural areas is seen by all respondents and institutions as a priority given the country's economic base, all agree that the urban dwellers are affected only indirectly and justify the lower priority of the case for the city's disasters in the eyes of most of the respondents. Still, the central government and ministries and hence the national level

governance, perceive the rural, rather than the urban, as the space most endangered by these natural disasters. If this reasoning is coherent with the issues of the country and does not by itself represent a hindrance to urban DRM, if combined with the absence of a mechanism for local actors to provide their input, the rural priority becomes the only direction of action as decided by the national level. This institutional situation that manages national priorities, and not the priority of rural vulnerability by itself, risks increasing the vulnerability in the city.

At present, meanwhile, the priorities of local government institutions are strongly for developing infrastructures, but as mentioned above, awareness on disaster preparation is not high enough to allow its mainstreaming in the management of infrastructure. Furthermore, respondents highlighted both directions of a causality link as the scarcity of funding explicitly limits the capacity of the municipality to opt for DRM priorities, but also how the little awareness on DRM is one of the reasons for which among the little funds available at the local level, few are ear-marked for the topic.

However, urban DRM is suffering from the competition of other priorities not only at the local level of the jurisdictional scale, but also at higher national and international actors. Regarding international donors, the sector of development is still perceived to suffer from the competition of the humanitarian sector, and a unite vision of the two concepts, as that depicted in the National Adaptation Plan of Action, is explicitly missing among the vast majority of respondents, with the only exception of respondents from international organisations. Furthermore, the difference in priorities with international donors was also referred to, in connection with the physical and political distance between Hargeisa and Nairobi, where many international agencies are still headquartered, affecting the possible range of actions of local NGOs.

This competition takes place not only against Mogadishu where the majority of donors is oriented especially in other humanitarian activities, but also in the same agenda of Somaliland's development. Here, despite the relevance generally recognised to droughts, disaster preparedness and management are still considered secondary with respect to traditional priorities such as the fight against poverty and security, increasingly tied to urban land conflicts.

Dysfunctional distribution of political and administrative competences and responsibilities
and
Lack of coordination between public agencies

Both the absence of competences allocated to the city and the lack of coordination between the city and other actors emerged as big constraints to local planned adaptation, in line with the literature expectations (Harries and Penning-Rowsell 2011; Lehman et al. 2013; Eisenack et. Al 2014). Furthermore, a respondent in a top-level management position in governmental institutions gave the following statement:

"We have a pretty centralised system for the topic, but it's fragmented, there is no direct link with the municipality, and Nerad is responsible for the national level while it's totally disconnected from the urban dimension... and we have some mandate related issues, like Water… You have the Ministry of water, you have that of agriculture, livestock… and NERAD cuts across these sectors, so usually there are some clashes.. like some say 'water is our responsibility' and the legal framework is not that much strong and we don't have clear mandates for institutions, and that sometimes creates arguments between NERAD and the Ministries when working together.." .

The absence of DRM competences explicitly allocated to the urban level is hence seen as tied to the weak legal framework for DRM, which is also mentioned as the cause for the absence of a clear definition of mandates and the lack of systematic and effective coordination measures to overcome the overlap of competences and duplication. A link between these two issues could be hence seen as in all the 10 interviews where they appeared, of which 10 are cases of codes overlapping on the same segment, whereas 16 times the two codes were applied to the same paragraph.

Regarding the barrier related to the existence of political and administrative competences crucial for operationalising urban DRM not being attributed to Hargeisa's local institutions, field research confirmed that the greater mandate for disaster risk management is perceived to be of NERAD's competence at national level, and only secondly descends on the municipality. The latter is however recognised to be in charge of managing the city, although not explicitly in case of disasters, where NERAD is the main official actor. Nonetheless, when disasters hit the city, NERAD claims to have only an advisory role to the figure of the Mayor.

" So the problem here is still that NERAD is not in connection with the municipality, unless when the disaster happens and they come together, I mean, the Mayor of Hargeisa is there, and the NERAD commissioner is there [*the respondent laughs*] ...but they are not really linked, so even in committees meetings, the municipality does not attend!"

Competences for disasters are hence not really decentralised to city level, whose participation to the management process is not consistent throughout phases and appears to occur mainly in emergency situations as NERAD's district level branches, who would have the formal competence on urban DRM but are not functional. Other competences like land planning and management have indeed been decentralised at city level, but not with an appropriate provision for disaster preparedness. Coordination issues are frequently mentioned as connected to the fuzzy distribution of responsibilities between the actors involved, causing uncertainty in actors interactions in light of a weak legal framework where coordination between the municipality and NERAD does not appear to go beyond the occasional presence of the mayor at ad-hoc meetings when emergencies hit. A common phrasing of the problem also revolves around the distinction of a national perspective and a local one, where coordination or communication is little despite the tendency of institutional actors to cooperate horizontally.

Even the regional level is under-resourced. In this sense, the mandate is allocated, but not executed in a systematic way. Furthermore, the distribution of competences and mandates between actors is unclear in its operationalisation both horizontally between NERAD and the Ministries, between the ministries themselves and especially between the municipality and NERAD, which result to be scarcely connected except for the role of the mayor in emergency situations. This situation has been mentioned to be correlated with not only a series of recurring tensions between actors, but also to a further hampering of the institutional capacity to organise a structure to proceed systematically with the implementation of policies.

Hence, coordination issues occur both horizontally and vertically across different levels on the jurisdictional scale, assisted by the lack of a clear definition of borders between separate competences. The national, central level appears to be more resourced and structured and still consolidates disaster management competences over the local level, concurrently shaping a fragmented governance structure that does not ease coordination among levels, especially with the district level, which results to be the most distant from NERAD and the whole field of disaster management. A symbolic phrasing by a respondent summarised these vertical and horizontal dysfunctionalities:

"There was one chap, he was a student, his father was fighting with his mother and I said to him 'don't blame your mother because they two know each other, you never know your mother, only mother and father know each other. You see, the city is the child and the central government and international organisations are the parents!"

Long-term environmental challenge vs. short-termism of decision making

With the barrier named "short-termism" we intend to point out the nature of the commitment required to effectively deal with environmental issues –that can be of slow onset but long lasting and for which preparedness may require a long term perspective- with the potential short cycles of politics. This barrier emerged as respondents complained about general lack of an attitude for preparedness in

institutions, together with the lack of action after the immediate post-disaster recovery. The commitment showed in decision-making by institutions has clashed with the necessities of DRM governance on a time scale wider than that considered by institutional actors at the moment as showed by the scholarship (Fankhauser et al. 1999; Heinrichs et al. 2011; Oberlack and Eisenack 2014).

As respondents put it: "they work like fire-fighters, without a plan.." "[…] and some assistance is given to the people hit by disasters, but after that intervention nothing else happens for preparedness"

These issues, especially in relation to the lack of what was referred to as "pre-planning", were problems reported especially at those levels suffering from resource and skills scarcity, like NERAD and the Municipality but not only for the system of concern of floods and droughts, but as related to the wider governance system approach. Two different respondents spontaneously hypothesised cultural aspects of the nomadic lifestyle, in addition to a tradition for hardship in such an unfriendly natural environment as explanation for the preference of political actors and people to focus on present rather than future benefits.

However, another form of barrier due to short-term perspective was reported by a minor group of ministerial and civil society representatives, from the side of international donors. International donors do plan ahead and generally have a long-term sustainability vision, but on the other hand, the majority of projects in DRM and in general in Somaliland are reported to last no more than a couple of years, allowing a mismatch of time-scale cross-relations where the actual challenges of managing floods and droughts require longer term action plans. This specific issue appears to be finding a compromise solution with increased local ownership of development projects thanks to the institution of the Somaliland Development Fund, a nationally owned donation basket, managed by Somaliland under the supervision of international donors and specialised advisors.

Another recurrent issue due to the mismatch of time perspectives that emerged analysing these barriers is the tendency for which local institutional staff is trained by international organisations, without consideration for electoral deadlines and turnovers. These not only affect the personnel in elected offices but, in order to maintain the principle of a balanced clan representation, several positions must not be covered by people from one same clan. For instance as new councillors are elected for the district of Hargeisa, and a new mayor nominated among them, the office of the executive officer, which is appointed by the central government, must not be of the same ethnic group of the mayor and must hence be replaced accordingly. Several informal conversations with key informants confirmed further that the tendency is to replace all staff according to these factors, with an inevitable penalisation for the criteria of competence in technical positions and less consistency among actors, which is reported as a big obstacle for international aid to actually carry out its beneficial impact.

Rapid environmental dynamics vs. slow reaction

Similarly to the above barrier, this barrier also falls under the category of time-scale related issues within Institutional deficit category and despite their opposite nature both issues co-exist in the governance system. However, unlike with short-termism, this barrier did not emerge homogeneously across quotas; it was not mentioned at all by respondents from the municipal level, while 60% of its occurrence occurred in ministry-level interviews, with the remaining 40% equally divided between international actors and civil society representation. Respondents from the ministerial quota also complained about the challenge of moving forward in committee works, which already can be time-consuming, when the resource allocation procedure is so lengthy.

" When we are alarmed of disasters we have a lot of meetings, so many.. everyday UNDP, OCHA, the government by itself.. we have all meetings with everybody, people have to fly in from Nairobi.. still we'll have no resource but meanwhile the rains come!"

The most mentioned issue is that of the excessive length of the decisional chain, this not only starting from the lack of adequate contingency plans from the government side, but especially asserted for the donor side. Given the absence of a national institution meant and capable of dealing with emergencies or of city level contingency plans, the itinerary to find resources has to pass through all steps of the national government to reach donors. To do this, donor representatives at the local level need to make assessments on the field to verify the information received from local actors before referring to their headquarters. However, if donors are not headquartered in Hargeisa, additional time is needed to fly someone in from Nairobi, but also for donors the resource flow requires approval from higher levels, which not only takes time to deal with information sharing and feedback system, but also needs to keep in consideration the further step of the interaction with Mogadishu's power.

"Some of the international organisations, they have no...they cannot decide at this [Hargeisa] level: their decisions depend on Nairobi, so they send an email to Nairobi and it may take some time to get response, for them to reach the decision makers.. while staying in Somaliland they can reply quickly, but those who are not, may not…"

"This information we give to international organisations has to go through ground-proofing and another assessment on the field, and then that field assessment cannot be quick! Because donors have to come from Nairobi, you know… then they collect information, then the assessment team, preparation of all this… and meanwhile people are lacking water and needing water trucking! Then, when you do the assessment, and after you do all of this, then the donors say 'ok, lets go and ask the money' so they have to go to the Italian cooperation, for example, and foreign embassies, and to the donors… And all these decisions are to be done, and the drought is still going on… That's a problem not only in Somaliland but in all developing countries… the man at the top level in the foreign capital cannot understand all these things"

A further issue that emerged as a problem is the lengthy process with which staff is assigned to the municipality, process which appears to be still centralised at national level and to hamper time-efficiency and –in the eyes of respondents- does not ensure the competence of the employees besides worsening staffing gaps. All these issues of slow reaction from the governance system can be seen as examples of institutional inertia brought about by bureaucracy which in many cases has hampered adaptation to climate change (Harries and Penning-Rowsell 2011).

Dependence upon national policies

As stated in the operationalisation section, the hypothesis for this barrier was that the challenges met would be due to the missing guidance from the upper levels. However, the fieldwork showed a more articulate situation where the relationship with the upper levels of governance results to be more complicated. Regarding DRM, there is the problem that the national entity, NERAD, is mandated to oversee DRM in the whole country, but not properly equipped to implement its local level structures and communicate with local institutions.

This sort of reliance on upper levels emerged, among the interviewees in association with the perceived lack of attention to the topic of DRM from the national government. Together, these are seen by the respondents as creating a vicious cycle with the lack of funding in creating a sort of stagnation. Hence, in seven cases emerged a picture where the local government strongly relies on NERAD, national institutions and international actors to carry out disaster response in the city of Hargeisa, unlike in other cities of the country, confirming the existence of a certain reliance. Nevertheless, in a number of respondents' answers only communities, families and people from the business community appeared to be the actors taking care of the phase of immediate disaster response and collecting funds for reconstruction purposes, as in 2005.

"..and when you look all these disasters in the urban area the majority of people who contributed and solved that problem was the community not the NGOs or UN agencies.[…] It was the community

who organised themselves including the diaspora and then they distributed some iron sheets and established the bridge [that had been washed out by the flood].. all the contributions came from the community including from the neighbouring countries."

Concurrently, the municipality actors claim the main responsibility when the floods hit the city is of their offices. NERAD's intervention appears to be following, in its role of coordination of other, more resourced actors from the international sphere, or in an advisory role to the municipality. The actual separation between the two levels is clear in the respondents' comments, which cite as cause the incomplete process of decentralisation that the country is explicitly pursuing. Three of the four respondents with the longest history of working with Somaliland institutions explained how the decentralisation process that the central government is an ambitious plan that is still has not reached the fiscal redistribution and that is constrained in its implementation by the general low level of funds available at government level. The decentralisation process has also to face the traditional conception of state as centralised, which, in light of the military recent past of Barre's regime, is still feared and passively resisted to, as explained by respondents.

On the other hand, having to cope with weak institutions with little service delivery capacity, the community, "the families" are by now used to the private management of services, like water distribution, which in theory traditionally belong to the sphere of public services.

"In the city it's definitely the families reacting first to disasters, not the government. Yes, and only after, after NERAD coordinates, the response comes from all the institutions depending on how they divide their roles. But this happens through NERAD, and then the regional coordinators of NERAD are made aware of the plans, and NERAD also contacts the ministries and they divide the roles for response, also with international organisations."

Respondents explain how in light of the past 25 years, households do not set their expectations on the government to carry out service delivery. In fact, respondents from strategic positions in NGOs highlighted how, in the absence of governmental institutions with sufficient capacity to structure national support, international aid will not be sustainable in the same way that DRM measures in the city will not be sustainable unless they integrated the local governance with NERAD's structure.

" Communities can start the process, but if there is no capacity to pick up the information and transform it into a way of national level support, even with international support it will still be a challenge because it would not be sustainable."

Leadership

Problems connected to leadership issues were the least reported. Despite NERAD's leadership on the topic was not framed by respondents as problematic, the confusion that emerged from the varying answers of respondents to questions on mandates for disaster response in the city prove unsettling. The formal leadership assigned by policies on topics of disasters to NERAD was undoubted by respondents, but when distinguishing the roles of actors for disaster management, the efficiency of NERAD's leadership appears to be extremely limited, because of the lack of resources that hampers its potential for action.

Furthermore, respondents also mentioned how the structures of committees and working groups, who are active only at national level, seem to be in need of a stronger leader, explaining how this strength is meant in terms of potential to actually implement actions, and of owning resources to ensure consistency and continuity in work. Leadership in action is mentioned as lacking also at municipal level for the same reason, in conjunction with coordination and competence definition issues, showing a pattern of unequal capacity distribution across levels and confirm theories that explain the lack of local leadership as due to the missing support from the top down (Tribbia and Moser 2008; Burch 2010; Eisenack 2014)

Other barriers

As mentioned in the introduction of the chapter, all barriers are here analysed in their interactions within and across categories. For this reason, even those barriers now categorised as 'other' are to be considered as integrated in the complex system of interrelations of actors and barriers.

The lack of accountability that is registered at different levels of the system can be seen as descending from the dysfunctional and vague distribution of competences, and as a case of mismanagement of information, together with the lack of awareness and that of coordination. However, the absence of a strong oversight on accountability is by itself reported to be affecting the actions of the locally elected government and the consistency in ministerial activities inside committees, where follow-up can be discontinuous in a void of checks and balances and create a further barrier to the process. However, accountability appears to be lacking also in donors, as a significant percentage of respondents, both involved in international and local institutions, complained about the impossibility of an authentic local ownership on internationally-funded projects, when the local level is not empowered to contribute to the process.

The lack of transparency is also mentioned as hindering implementation on the ground of the national DRM policy, as respondents highlighted how often neither the national government nor international agencies make sure the projects, policies and institutions developed are clearly integrated in the existing system or that their structured and organisation are clear to those actors involved in the follow-up. Contradictions in the regulation system, or absent regulation that emerge in these cases are again to be considered in connection with the lack of awareness, of technical capacity on the extensive links DRM has to other policy fields, the unclear division of competences and lack of vertical coordination. In the case of district DRM in Somaliland, this reasoning in fact brought a respondent to claim:

"[The problem] in NERAD it's not lack of funding, it's lack of organisation"

This, in fact, was mentioned just after discussing the clear separation that is perceived between the national level and the local level of government, in parallel to the disconnect between planning, or at least policy writing, and implementation mentioned by several other respondents. The separation between the national and the local level of the city, was also mentioned as a barrier by itself by respondents who drew a connection with the existence with this structural characteristic with the existence of so called "shelf policies". These are developed also with the assistance of international UN agencies or NGOs, but they exist only on paper and never see the light of day as their enforcement is not planned or provided for, not even allowing other stakeholders to feedback in the governance system to identify and report eventual gaps.

Among the barriers that had not been foreseen by the literature considered in chapter three, a big role emerged for land emerged as a cross-cutting issue undermining institutional capacity from a number of sides, as suggested by respondents in strategic managerial positions in the national governance structure. Poor land management practises, always tied to the lack of enforcement capacity of local institutions, worsen the impact floods have on the poor drainage system, but the extremely high value certain plots in the city have, can open the door to several corruption practises and conflicts. Land corruption occurs to the advantage of local government political figures who have the power to allocate land and oversee the definition of land uses. This issue was mentioned in a discourse regarding decentralisation, as a proof that central level institutions of Hargeisa are not necessarily the most powerful, as a plot of land in Hargeisa, under the city's control, could easily be worth half of an average ministerial budget. This creates a series of incentives to maladaptation besides reducing the resources available for sustainable development and decreasing the efficiency with which they are used. Secondly, the topic of land management is also experienced as a big security threat. Descending from the young history of the national institutions, born well after the establishment of private property practises in the area, the local institutions, which are responsible for enforcing land planning are found to be too weak to overrule society. Land conflicts spark from the absence of a national record for cadastral maps, burnt during the civil war or lost after that, leaving arbitrary definitions of borders between plots vulnerable to easy contestations among neighbours, attracted also by the high

value of land in the city. The judicial system, when not conniving with local corruption, has hence little recognised power to face the social pressure that condenses on private land management. In a society that is characterised by inter-tribal frictions, this social pressure can easily escalate to more organised forms of dissent against institutions, deviating resources from development back to security, increasing transaction costs between society and institutions and again decreasing the resources available for development.

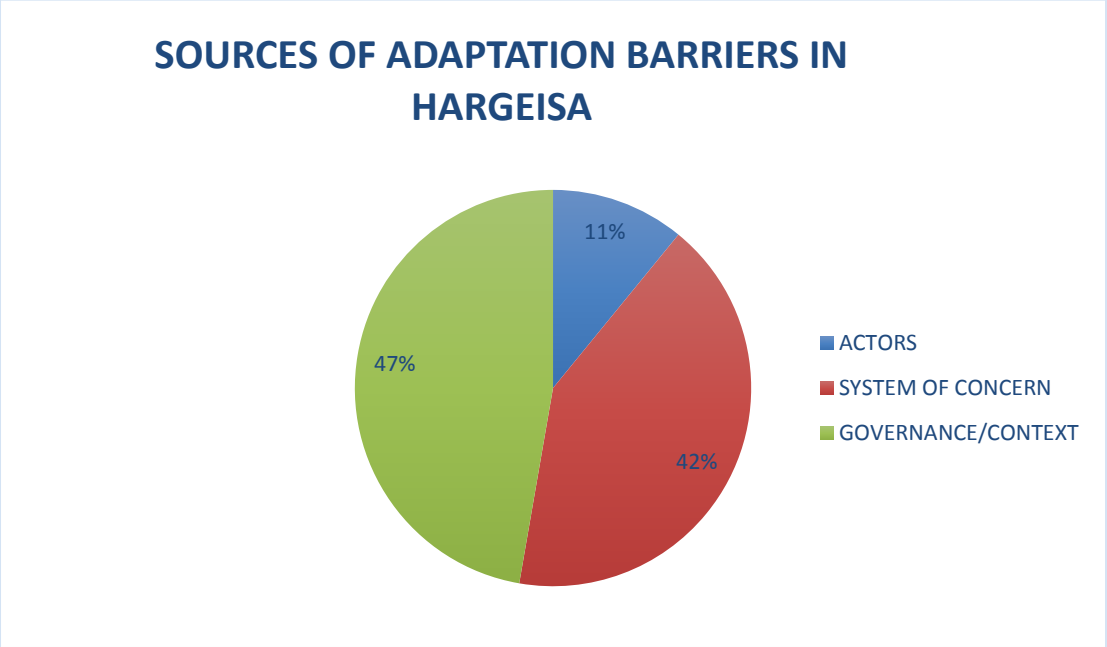
Barriers origin, Structural Elements

As discussed in the concept framework, we aim here at identifying how do actors, context, and the system of concern contribute to the creation of barriers. Following Moser and Ekstrom's model, we attempted at grasping the role of these three structural elements from the analysis of the respondents answers either directly or indirectly by interpreting the context of what was mentioned (Moser and Ekstrom 2010).

Chart 2 shows the results for the aggregate of all barriers mentioned grouped following the structural element that sources them. The barriers considered, as those cited in the examples in this section, are neither barrier categories or barrier types. In order to go in depth in the case studies, for example, we considered not 'the lack of resources', but the dwindling funds from international aid to DRM, or the reduced amount of funds that are distributed by the central Somaliland government for DRM purposes, or to the gap in funds allocated for DRM in the Municipality of Hargeisa. We aim here at a context-specific analysis not based just on the relatively abstract categories or types, but on the actual problems described in the previous sections. This also means that not all barriers of the same type are generated by the same structural element: for example, of the above examples of barriers for constrained financial resources, only the fact that the Municipality is not allocating part of its funds to DRM is a barrier that is originated by the local actors.

Thus transcending from the single interviews, we assigned each specific and occurring problem, not just the barrier type, to the structural element originating it, based both on explicit indication of informants and from other contextual factors elicited from the interview. No conflict was registered among respondents allocation of structural elements as the different interpretations of their role for a same barrier type were already factored in the distinct problems within each barrier type. Hence, on the total of 30 different problems that we analysed under the different barrier types, only the three mentioned are due to actors, while 15 are caused by either the wider governance system or the socio-political context, and 12 are generated in the system of concern.

Chart 2 Barriers origin among the structural elements of adaptation



Barriers signed as generated by actors are seen as caused by the behaviour and choices of single individuals in urban institutions, such as attitudes that lead to underestimating the risks arising from climate change, or such as the personality conflicts that emerge horizontally between actors involved in DRM with the municipality mentioned under the coordination barrier section. The attitude that belittles the risk of floods in the face of climate change is another example together with that that causes planning to be extremely limited at urban level.

The reasoning behind the identification of those barriers generated by the system of concern is that of finding what problems are caused by the various institutions and policies directly involved in urban disaster risk management. For example, the problem of a dysfunctional distribution of competences finds its source in the DRM policies that do not address in detail the allocation of mandates, together with the lack of systematic definition of responsibilities by the national level DRM institutions themselves.

Methodologically, this barrier could be seen as caused by an actor, that is NERAD, responsible for policy-writing. As we consistently chose the perspective of the local institutions for the whole research, the source of this barrier is however traced to the system of concern, as NERAD –together with environmental aid sources like UNDP and the NGOs involved and the natural ecosystem of Hargeisa –are part of the system of concern for droughts and floods. In fact, also problems of conflicting goals and priority definition between rural DRM and national DRM are considered in this category, as are those of vertical cooperation, fund lacking for specific urban DRM and the reliance upon upper levels that follow.

Barriers whose source is the wider governance and context are for example all those related to the limits in resources typical of countries with a history of poverty, the additional burden of the lack of recognition impeding bilateral aid funding, and the lack of international funding specifically targeting DRM for Somaliland. The problems related to the time scale are also found to be mainly due to the wider context and governance. Examples are both the lengthy processes for decision making inside UNDP that are caused by the executive structure of the UN system and the overall bureaucratic inertia in institutions, and the little inclination for planning ahead, which is embedded in the socio-political context and even rooted in the regional culture, according to some respondents actors. Those problems of missing data and information that go back to the weak institutions and the consequences

of a violent past are also seen as generated by the wider context. Another example would be the absence of young staff properly qualified for DRM as linked to the absence of a quality education system for the present generation of Somaliland, also tied to the lack of funds specifically for salaries in DRM institutions, contributing to the poor performance of the system of concern.

The results of the analysis of the barriers described in the previous section show a dominance of the wider governance and context together with the system of concern as explaining factors for the barrier sources with a combined percentage of 89%. The weight of the wider governance and socio-economic context could easily be seen as a sign of the limits imposed by the turbulent history and current low level of development. However, it can also confirm the assumption of literature regarding the big role of the wider governance system and its institutions on the local and urban adaptation process (Dodman and Satterthwaite 2008; Wamsler 2013; Eakin et al 2014; Scott and Storper 2014; Lehman et al. 2015).

The fact that only a minority of barriers is generated by urban actors would in fact match the described situation of an unempowered local government whose little role, resources and awareness do not allow much, nor in terms of positive actions nor in terms of barrier generation. It could also be an effect of the small size and hence higher familiarity urban actors have with each other, or of the tight hierarchy inside municipality. However, the role of actors in facilitating coordination rather than competence conflicts and in establishing an accountable and transparent land management is to be mentioned.

The system of concern, characterised by incomplete and unstructured implementation of policies would reasonably be a major cause of barriers as disaster risk management is in the hands of NERAD more than it is of the municipality. Many barriers types, mainly in the institutional barrier category, found their source specifically in the fragmentation of the whole governance system, which confines urban DRM far from the attention of those actors, at the higher Government positions, who take the decisions regarding fund allocation.

As we have identified with which nuances barriers have occurred, and to which structural element of adaptation they are caused by, in order to answer to Biesbroek's call for understanding the 'how' and 'why' barriers emerge and to start moving towards the understanding of solutions (2013), we proceed in analysing which scalar influence urban actors have on the barriers, that is which barriers are within grasp of the local government to act on.

Scalar influence on Barriers: barrier location on the jurisdictional and temporal scale

Following the order of the sub-questions and objectives, we proceed in locating the origin of each barrier and thus the strategic locus of control to overcome them. The more in the past the barrier was generated, the further it would be on the time scale; the more the problem is out of reach for the local government, the further on the jurisdictional scale. The matrix shows barriers aggregated based on their position along the temporal scale and that of the jurisdictional scale.

With a country like Somaliland, defining the concept of temporal proximity required a decision. Despite the young age of its institutions, the people and the state of Somaliland have a long history, whose effect is still being felt by contemporary actors. As mentioned in the previous paragraphs, before the 1991 civil war and the consequent institutional break-up, several environmental issues had a higher relevance, more skilled staff and attention in the political agenda, besides more efficient and effective management. An example would be either the water management system, or the grazing reserves, which respondents mentioned to be in place for drought and flood preparedness and in support of pastoral resilience before the 1990s. However, a fourth of the total respondents mentioned how the current situation has evolved from post-war reconstruction, out of emergency and rather in a development phase. This signals how the moment of independence has at least started to be perceived as an event of the past, and no longer of the present. Furthermore, all currently existing DRM

institutions have been established in the past ten years, suggesting how the year of 2003, that is a middle point between current days and the proclamation of Somaliland's independence would be a reasonable, despite arbitrary, benchmark for contemporaneity. On the other hand, as DRM is also a rather recent issue and for this reason more fresh in the mind of politicians and actors with the power to lobby and follow-up on the DRM topic. Considering the time scale, the prevalence (58%) of barriers generated in the past decade and hence "contemporary" is explained by the fact that the institutions involved in DRM and environment management are all dated after 2003. However, legacy barriers are 39%, which is the second biggest category, confirming how the history of the developing country still weighs negatively on the outputs of the adaptation process, as with all the backlogs that are due to the past civil war, or to problems such as poverty, lack of education and long decisional chains in international aid. In the column of legacy barriers falls the majority of barriers caused by the governance system and wider context, which represented the structural element that is the biggest source for 47% of the total barriers.

As each barrier's origin and position depends on the perspective from which it is viewed, we confirmed our choice of the perspective of local government that is of urban institutions. We analysed the 30 specific problems and observed their distance from the present day urban actors' influence based on DRM policy documents indicating competences and cross-checking them with the answers from respondents at the different levels of the governance system when the policies were not implemented yet.

In Category A, hence contemporary/proximate barriers, fall those problem that were originated after 2003 and on which the urban administration actors have some direct power. These include for example barriers regarding the current attitudes of municipal actors in preference for short-termism rather than preparedness, and the locally defined priorities of the urban administration, which do not include DRM, or land management practises discouraging adaptation. As the municipality by itself can potentially act on these issues and reverse their negative effect, as by mainstreaming DRM in the regulation of its competence. The competence of deciding which priorities the city should address lays in fact with its own elected body as stated in the Constitution, and the municipal actors, here and now, could steer in another direction deciding to make coordination with NERAD a local priority, whose implementation would not necessarily divert funds from the current infrastructure chapter.

Category B barriers, generated at a higher jurisdictional level in the past twelve years, have a primary role in disempowering the local adaptation process. Accordingly, we assigned to this category those barriers on which the municipality cannot act alone, but which are relatively recent and hence potentially malleable. The lack of a clear division in the assignment of competences among the different actors working in DRM in 2010's policy is for instance a problem generated by the national level disaster institution, which produced the law. In this category fall also all those issues tied to the role of trans-national actors, such as the low priority and hence amount of funds assigned by the international community and UN agencies to disaster preparedness, and the current preference of international NGOs and UN agencies for short term projects in Somaliland. The fact that this category is ranked as first shows the extreme potential for aid and international cooperation. It can reveal how trans-national actors, which can and do already operate at different levels of governance simultaneously, could be of huge help in addressing the biggest group of barriers for the current process of adaptation in Hargeisa if not directly from those for which they are responsible, also working with the national level to encourage vertical coordination. Furthermore, this 40% also represents a window of opportunity, reminding how the relative novelty of DRM can be an advantage in the process of overcoming challenges.

Category C aggregates all barriers proximate on the jurisdictional scale but originated by urban actors before 2003. Examples are those barriers of attitudes that stem from actors in the local jurisdiction and have their roots in the past. They are the smallest group of barriers. Examples would be the preference of local administrators for measures who have rapid impacts inherited from years without security or predictable local budgets, or to the barrier posed by the loss of documentation of urban cadastres during Siad Barre's regime and the civil war. These barriers, including the local institutional setup unable to coordinate with DRM institutions, also require either a strong autonomous action from

the urban actors themselves, or additional assistance from external actors in order to overcome the path-dependency typical of bureaucratic institutions.

Barriers of the remote/legacy category, category D, which Moser and Ekstrom see as the most difficult to overcome for the local actors alone (2010, 2013) represent the second largest group, once again underlining how limiting can the structural context of a developing country with an anarchic background can be. The lack of a skilled new generation caused by the absence of a strong higher education system after the nineties, or the general scarcity of financial means due to low development conditions are examples of barriers who are originated from the socio-economic but also political context. The often mentioned limitation of funds from bilateral agreements, made impossible by the non-recognition of Somaliland's independence by the international community also falls in this difficult category. The weakness of institutions and their limited capacity for enforcement, especially that of the urban level, are also rooted in the history of the Horn and depend on factors that are not in the hands of the actors directly involved. The big weight of this category can underline the need for an holistic and strategic approach in dealing with institutional adaptive capacity of local governments, given that such a percentage of problems descends from the wider governance system.

Table 4 Matrix for barrier location on the jurisdictional and temporal scale

BARRIER ORIGIN	**Contemporary (T_scale)**	**Legacy (T_Scale)**
Proximate (J_Scale)	**A 18%**	**C 14%**
Remote (J_Scale)	**B 40%**	**D 25%**

The aggregate results emphasise the weight of barriers that are generated by actors far from the jurisdiction of the city level (65% of them). Considering our focus, the fact that proximate barriers combined (18%+14%) are only a third of the total is in line with the observation made in the previous section that the role of the urban actors in urban DRM is relatively confined and little power is at their availability. Causing only a little part of the barriers, as seen in the previous section, local actors can tackle few issues by their own means and jurisdiction.

The framework by Moser and Ekstrom has been applied, to the top of our knowledge, only in the case of the San Francisco Bay Area (2013), limiting the comparability of these results, as the literature on barrier origin is limited (Moser and Ekstrom 2010; Biesbroek 2013; Eisenack et al. 2014). An application of a modified version of their framework has been applied to study adaptation in cities in Germany and Latin America. However, instead of Moser and Ekstrom's structural elements, it used a revised combination of governance, context and actor-specific behaviours that loses the focus on the coupled human-environmental system of concern in favour of a total separation between the 'institutional environment' and the 'natural environmental' (Lehmann et al. 2015).

The fact that the result for the analysis of Hargeisa's adaptation is antipodal to that of Moser and Ekstrom for the case of the San Francisco area and that the order of relevance of categories is reversed does not surprise. An obvious difference emerges comparing a well-developed city in the world's most powerful nation to the now growing capital city of a young, unrecognised developing country whose overall institutions date well after the beginning of the international community discourse on sustainability. To the best of our knowledge Moser and Ekstrom's framework has not been applied to developing countries, and hence understandably shows different results. Furthermore, the American and Californian jurisdictional situation for climate adaptation is based on the local governments much more than on the federal, centralised level. The distribution of barriers origin in Hargeisa's case shows hence a big potential for external aid's effectiveness in assisting Hargeisa's local government in

tackling its institutional, resources and awareness constraints for DRM. However, the perspective of local urban government taken by this model would imply that in order to address these barriers, cooperation should take place at the urban level, involving municipal actors directly and addressing their dysfunctional interaction with the upper levels of the governance system for DRM.

Reflections on the interactions across scales in the governance system

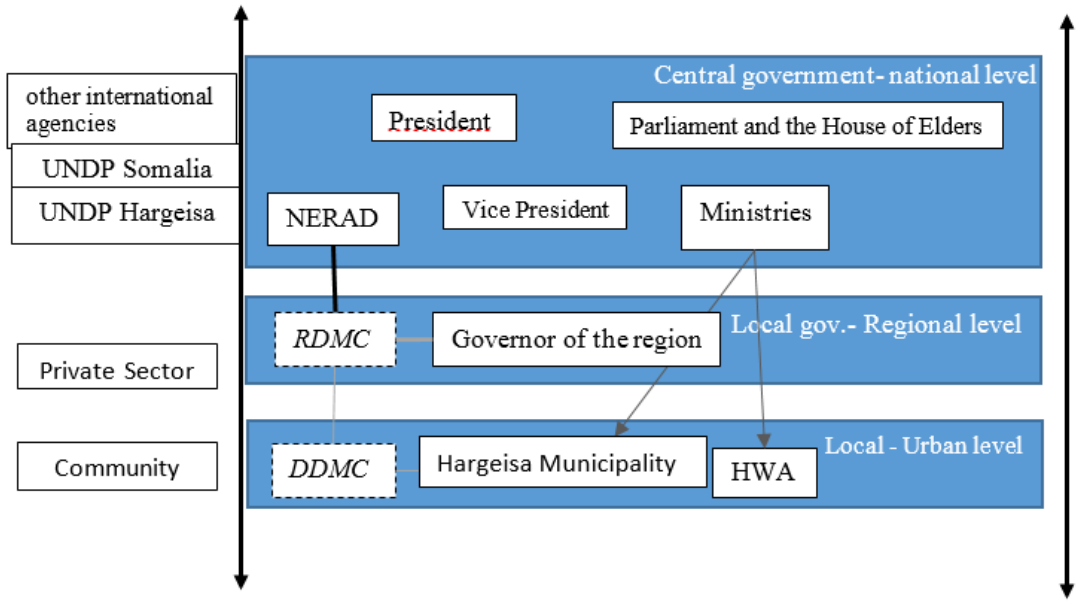
In light of the analysis of barrier origin and after having observed the governance system, we can describe a series of vertical and horizontal relations that take place across the jurisdictional scale connect the different actors at different levels and, as we saw, generate barriers while building the process of adaptation to climate change and hence DRM.

These relations occur both when the disaster occurs in Hargeisa, and when no disaster occurs. In the first case, like in the 2005 Hargeisa flooding, respondents explained how the first response came and generally comes from the community, the local households and the private sector rather than the government. Informal committees are made to collect funds and redistribute them, however, information on the disaster on the ground is reportedly informally communicated to 'friends and relatives' either in NERAD or in the municipality, which then goes to NERAD. Nonetheless there appears to be no formal channel for the community to systematically contribute to the governance of disasters, and hence, as showed in figure, occupies a relevant, but marginalised position.

If the disaster hits the city like in 2005, the Mayor will be summoned at the emergency meetings of the disaster consult or steering committees, but just as with the community, there still is no formal channel for the municipality to interact with NERAD, as this is the DDMC, which is currently missing. NERAD hence leverages the National Disaster Consult and the Steering Committee into gathering more resources either from central budget or from international funds – reported to be much slower in arriving on the field- and organises and coordinates all actors in attempting to respond to the impact. As the international agencies have worked only with the national level when it comes to DRM, their position in figure is showed at the same level.

However, the response to disasters is contingent on the situation and reportedly does not follow a systematic procedure. Actors at national level negotiate it among unclear divisions of responsibilities and scares resources. The implementation is hence assigned each time through a negotiation that can be lengthy, inconsistent and conflictual. Furthermore, contingency plans at local level are not there yet, further depriving the communities of institutional support to their adaptive capacity.

Figure 8 DRM Actors on the jurisdictional scale levels



Vertically, one of the scale relations can be identified from the Central Government to NERAD, assigning it competences but little resources. Horizontally, a scale relation takes place in the national level, between ministries and NERAD, where competences and resources are to be shared without predefined mechanisms to resolve conflicts. Again vertically, the municipality is tied to Ministries of Interior, Planning, Public Works and others, which in many ways direct work at city level. The Ministry of Interior appoints the Executive secretary, who takes the power on the city in case of conflict, while some ministries have their own offices detached in the municipality. The funds for the municipality, however, come mainly from fiscal transfers from the ministry of Interior and the tax collection operated in the city. A significant source of funds for the municipality is also the local community capacity to mobilize resources: remittances from the diaspora and contributions from the growing private sector that can harvest, as they did for the Fire brigade in Hargeisa, all the necessary funds and hand them to the municipality to implement.

The central government is also at the receiving end of the relation with international agencies like UNDP when observing resources flows, but recognition and responsibilities are here not transferred as UNDP remains tied to Mogadishu's capital role. UNDP is also connected in a directly to the civil society of Hargeisa through the DDMC project of having an NGO train volunteers from the community in DRM.

When observing the relations on the jurisdictional scale, we must keep in mind the explicit effort made by Somaliland's institutions, from their initial conception in the Nineties, to reach an overall decentralised governance structure. There is also in fact another vertical scalar relation that starts from UNDP and directly reaches the municipality, with the so-called JPLG programme. The international community supports this effort towards the empowerment of local government, directed by the Constitution and other laws, through the UN Joint Project for Local Governance (JPLG). This is the programme through which UNDP directly trains the local government of Hargeisa and assists it in planning and managerial tasks, while also allowing it to address the governance topics it prefers. As of now, the municipality has not invested in DRM, despite UNDP, regardless of the JPLG, is itself in charge of the DDMCs component. The municipality is also at the receiving end of the loose relation with NERAD, which in case of disasters advises the Mayor and eventually call him to participate in the national disaster consult level meetings on a case-by-case basis. However, as mentioned before, the bulk of funds and resources is still managed in a centralised fashion. Decentralisation has been mentioned by many as a desirable tool for DRM by allowing lower levels to be more autonomous,

efficient and creative (Ahrens and Rudolph 2006; Herrald 2006; Tompkins et al. 2008). However, the interviews suggested that the institutions involved in DRM, such as the DRM National Consult, the DRM Steering Committee, NERAD, the DRM Forum and so on, can be said to be effectively working only on the national level so decentralisation is here incomplete. The barriers presented in the previous sections explain why the national policy could not be implemented, hence excluding the lower levels of governance from engaging in DRM.

For this reason we find useful joining Blackburn in her moving of the focus away from policies and onto the processes of scale structuration (2014). In a constructivist perspective, she sees scales and their limits as a product of the interaction between levels of the formal state structure. This reasoning assists us in not focusing on the policy, and on its lack of implementation, but rather in understanding how the relationship between the levels works in spite of it. As Blackburn finds in her analysis of the decentralised Jamaican DRM system of governance, the actors involved can continue to reproduce scales of governance that concentrate power at the top even when policies explicitly in favour of decentralisation and empowerment of local agency are there (2014). She terms this process *incomplete decentralisation* (Blackburn 2014; Pelling 2011; Pacheco 2004). As this depicts a situation where the rhetorical discourse of decentralisation is contradicted by the reality, the case of inexistent DDMCs in Hargeisa can be an example of incomplete decentralisation. The decentralised structure for DRM is in place on paper, but it has not been matched with the allocation of resources or enforcement capacity to enable local levels of governance to play an actual role in DRM.

The political process of decentralisation has in fact to clash with the weakness of local and national institutions and with the scarcity of resources accompanied by the lack of awareness for urban disaster management. We have seen that the majority of barriers to the implementation and management of DDMCs originates from the wider governance system and its structure for DRM (our system of concern), which as we saw, is fully implemented only at national level. As the mandate for disasters formally falls on NERAD, the municipality actors appeared to have no incentives to divert their few resources to a topic outside their full control, or at least in a grey area where competences are unclearly distributed. On the other hand, the limited resources budgeted for NERAD also do not encourage it to fulfil the policy's indications and proceed with the decentralisation. Respondents often described what they perceived to be big gaps of capacity in both NERAD and the Municipality, and these material and perceived disempowerments perpetuate the stagnation and unresolved implementation. As with the previous sections, results indicate the existence of a wide space for an external actor in connecting, as requested by all respondents directly involved in DRM, these two actors and allow to overcome the institutional stiffness. The second scale structuration process mentioned by Blackburn is that of *scale-jumping*, often mentioned as a strategy with which grassroots organisations increase their bargaining power by partnering with international organisations in order to "bend" the scale and resist to the state's pressure (Smith 1992; Brecher et al 2000; Routledge 2003; McCarthy 2005). This process can however take place in the opposite direction, as in Blackburn's case of Portland, Jamaica, and in that of Hargeisa. The fact that the municipality's relevant actors result to be unaware of the intentions of UNDP to implement DDMCs in the district shows which level has been jumped. The planning and designing of the project of DDMCs has jumped from the central level where it was conceived between UN agencies and the ministerial level, directly to the level of the civil society volunteers to be trained for the DDMC. The urban authorities are hence not being involved at this early stage of what aims to be a new institution integrated in the city governance. The third process illustrated by Blackburn, the isolation of communities from fully engaging in DRM through the ad-hoc national structure, applied the case of Hargeisa shows how, given the fact that the structure itself is not ready to engage community and local voices, not only communities but also urban authorities are currently excluded from contributing to Somaliland disaster preparedness.

We can see how all three of the processes that characterise the strategy for dominance of the central level are to be found in Hargeisa. However, the lack of sufficient time to access all relevant respondents and observe dynamics between actors prevents us from stating that these processes are fruit of an explicit strategy put in place by actors. Nonetheless, we can easily state that the patterns found in the scalar relations that originate barriers do reproduce a separation between the national and

local level of DRM, where the lower levels are barely involved, if not for mobilizing financial resources, contradicting explicitly the nation's decentralisation efforts.

Effects of barriers

Having analysed the barriers, their source element and the position in time and on the jurisdictional scale of their origin, allows us, through the respondents' answers, to understand how they alter a set of parameters descriptive of the adaptation process. Qualitative evidence is there, but, as specified in limitations section, in order to minimise subjectivity further research within the institutional environment could be carried out to grasp quantitative elements behind the parameters chosen and strengthen the correlation between the barriers and their impacts. Further time would be needed for building a rapport with respondents in the research, due to the sensitivity of such quantitative information such as budgets and costs

These parameters used to shed light on the influence barriers have had on urban DRM and the implementation of DDMCs are: the availability of means (legal, financial, organisational, knowledge, technical) for urban adaptation; the effectiveness of the use of such resources; the costs of adaptation (including transaction and opportunity costs); incentives for adaptation; incentives for maladaptive activities. The expected effects highlighted in the operationalisation table are confirmed as barriers are perceived to hamper adaptation both directly and creating vicious circles in their interaction.

The lack of awareness on DRM and adaptation is perceived to cause less resources to arrive for the implementation of urban DRM both through a limited pressure from public opinion to the governance system, and through the governance system itself with reduced transfers from the central government to the local level. The awareness limitation diverts resources both at the national level –that rather invests them in the most vulnerable countryside –and from the local level's own resources, as they chose to focus on other topics. Little awareness and the existence of other development goals have diverted resources in favour of other priorities, increasing the perceived costs in investing in DRM bared by the local actors, who are already strongly hampered by constraints in terms of financial means available, qualified staff and information management resources. By the time of the field research, the implementation of the project component regarding the DDMC in Hargeisa had not yet started, nonetheless interactions across scales for local DRM have been identified. The funds had not yet been disbursed; nonetheless all respondents were confident the involvement of UNDP would increase the available resources. In particular, UNDP is seen as a great opportunity for increasing the local knowledge and technical skills that make up quality human resources; its exposure to other foreign practises with disasters was cited numerous times as a crucial advantage for local institutions. It is to be noticed, however, how the tendency of international aid in Somaliland to opt for short-term projects is already reported to have limited the means available for DRM measures. Concurrently, land conflicts add to the burden of other barriers as they threaten the local peace and hence divert resources back to the traditional issue of security.

The effectiveness of the use of those technically and economically available means allocated to DRM is perceived to be limited by many factors within the governance system of DRM, at the local, national and international level. The little technical understanding by decision-makers in the Somaliland government and the lack of qualified staff generated by the legacy of the context in conjunction with little funds for government salaries can strongly hamper efficiency as the limited comprehension of the scientific topic causes opportunities to be lost in the city level. Other significant factors that are felt as hampering the efficiency and effectiveness of the use of resources are the lack of coordination across all levels of the scale and an overall fuzzy definition of competences across the governance system's levels. This fact, combined with the relevant problem of the perceived absence of accessible scale-relevant information on disaster risks and climate change can make the decision-making process and the whole management of urban DRM take longer time, more resources and often make it more conflictual, facilitating the waste of time and resources. Time scale barriers, both the

one describing slow institutional reactions to rapid environmental dynamics such as flash floods, and the barrier of lengthy decision making processes by international donors and by the national government certainly tend not to contribute to the efficiency of the use of the available means.

The loss of time caused by the bureaucracy that leads institutional inertia, together with the duplication of functions brought about by coordination and competence distribution gaps is reported to increase the transaction costs for the adaptation process. The same effect takes place because of the presence of unqualified staff and because of the existence of other priorities at national level, which can increases the opportunity costs of investing in DRM perceived by the municipal actors. Land conflicts and the corruption around land management are perceived as increasing the costs of proper enforcement of DRM and preparedness regulation. As they take place among urban institutions, they widen the distance between institutions and the community, hence increasing transaction costs for the implementation of the DDMCs, undermining the legitimacy needed by local actors to play a role in DRM and by national institutions like NERAD to implement measures at local level.

Problems of coordination and lacking explicit competences mandated at the urban institutions level also cause increased incentives for maladaptive behaviours as they reportedly leave the actors involved unaccountable for the implementation of the DRM policy in the city. The DDMCs represents the institutional, systematic link between the urban institutions and NERAD; their absence and the reliance upon upper levels caused by little decentralisation for the municipal institutions imply in the current situation reduced incentives for the municipality to engage in the process of implementing the national DRM policy. The reliance of the city actors on the national level for DRM has appeared to increase incentives for maladaptive practises in the municipality, as it has reduced the pressure on local government actors to use their own resources to counter the impact of floods and droughts.

Training volunteers from Hargeisa's community in DRM activities would respond to the objective of strengthening NERAD and creating community resilience measures, but it also enters the sphere of interest and competence of the municipality. Keeping these two beneficiaries apart risks reproducing the gap between NERAD and the municipality potentially incrementing incentives for the municipality to engage in maladaptive practises and further isolate the community. This gap is reportedly widened by the lack of implementation of the DRM policy but is felt to be also among the factors causing it, for which vertical coordination in DRM is already unfulfilled. Furthermore, the process of scale-jumping that would occur whether the DDMCs were to be implemented without ensuring proper coordination with the local authorities can also reproduce the disconnect between local community and the municipality.

Respondents and key informants brought up the problem of the lack of shared structure for all actors at different levels to feed in DRM in a coordinate manner. In light of the bad example set by some cross-border regional organisations existing only on paper, respondents worried explicitly about the sustainability of DDMCs if they were to be implemented only through community trainings. In this direction, all respondents from outside NERAD's positions stated the necessity of the active involvement of the municipality in such plan, or of some form of institutional capacity building to allow the DDMCs work to be received, understood and effectively used by higher levels of the governance system of DRM. The respondents hence explained how such an inclusive approach would decrease the incentives for maladaptation and increase efficiency in the use of resources and counteracts that loss of interest and effectiveness that usually kills these grassroots initiatives; it would in fact make communication easier and the sharing of resources and information faster when disasters hit and emergencies occur. In this way, proceeding to operationalise DDMCs only through an NGO, who provides training to volunteers would increase future transaction costs for urban DRM, and increase the incentives for a maladaptive stagnation among urban official institutions. Respondents also shared their understandable worries for the clarity of mandates and responsibilities if the DDMCs had to be implemented without awareness of the other institutions, which already suffer from that barrier.

Their perceptions hence seem to confirm how, in order to tackle the barriers that caused NERAD not to implement the DDMC in Hargeisa, the project needs to address the governance system and the institutions and policies that relate to DRM, as they are the main reported source of barriers. In other

words, furthermore, implementing DDMCs by training volunteers would address the proximate and contemporary barriers of skilled human resources, but it would leave untouched the bulk of problems located on a more remote level of the jurisdictional scale. The respondents were clear on the potential positive effects not only on resource availability, but also on costs, incentives and efficiency of the DDMC project if made as a stimulus for the whole structure of DRM. However, they were also clear that if this does not happen, increasing costs and incentives for maladaptive practises are to be expected for the city.

Chapter five: Conclusions

Discussion

The aim of this research is to understand and explain what is hampering the management of droughts and floods in the city of Hargeisa, and hence how the interaction of barriers and relations among the different levels of the DRM governance system affect Hargeisa's implementation of DDMCs as a measure in the process of adaptation to climate change.

Converging with literature, this case acknowledges that the barriers to effective adaptation to climate change are to a large extent systemic in terms of institutional processes (Mukheibir et al. 2014; Eisenack et al. 2014). For this reason, this analysis aims at contributing to the epistemological endeavour that combines the identification of barriers with the analysis of interactions. These are seen in the governance system as redistribute money, power and competences between actors at different levels, affecting the adaptation process's costs, resources, efficiency and incentives.

In Somaliland, the governance system for DRM is actually structured only at the national level. The actor with the national mandate of dealing with disasters preparedness and environmental research, which are key issues for adaptation to climate change, is the national agency NERAD. NERAD responds directly to the President and it has a coordination role towards line ministries, international aid organisations and NGOs. NERAD's policy predisposes its structure to be decentralised to the regional and district level. It plans for District Disaster Management Committees, who supposedly interact with local authorities and feed back to the upper levels of NERAD. Because of the many reasons illustrated in the analysis, they have not been implemented in Hargeisa, and only a minimal number of regional and district committees have been established nationwide. The current conditions are shaping a disconnection between the municipality of Hargeisa –which gain power and resources from local elections, land management and its own fiscal collection from the city – and the national level, which is still in charge of the funds that come from international donors, of the bulk of fiscal revenue and power and remains unrecognised.

When disasters hit the city specifically, like in the 2005 floods, NERAD appears to have only an advisory role to the Municipality, where the Mayor is considered responsible for dealing with the city issues, and is hence the only local actor involved in dealing with upper levels when the emergency hits. A further policy document, the National Adaptation Programme of Action for Somalia, mentions as strategic stakeholder and implementing partner for Somaliland not NERAD, despite its mandate for preparedness, but the ministries of Planning and of Environment. This shows the early signs of an institutional framework with a blurry definition and distribution of competences and responsibilities. Furthermore, an extremely relevant but almost autonomous role in DRM appears to belongs to the community, the private sector and the diaspora. In a state where institutions are weak, people have developed not only coping mechanisms but also a whole system of service delivery that does not depend on the public provider. Unsurprisingly, they are those who take action in the first response and often independently gather the initial bulk of financial resources needed on the ground, besides often directly and informally funding district, regional and cross-border support initiatives.

Nor policies nor practises define a clear method for understanding the division of competences in implementation between the municipality and NERAD, nor between NERAD and other line ministries. Each time ad-hoc arrangements have to be negotiated. We can accordingly state that there is no organised form of urban disaster risk management that involves district actors in Hargeisa. The municipal actors like the municipality departments, the mayor, the Hargeisa Water Agency are at the bottom of the state infrastructure, but are active in governing the city daily. This level is already hampered by the lack of financial, knowledge and human resources, so its interactions with other actors become a necessity for coping with floods and droughts. Barriers appear in fact to be generated by those scalar relations that take place across the different levels of the jurisdictional scale, involving the central government, NERAD, the line ministries, the urban state authorities, the community and include the international agencies that work in Somalia. Horizontal and vertical resource flows, like allocating responsibilities, funds and staff occur between these actors generating challenges for the

process, as specified in the previous paragraph. As results show, the mandates are blurred and resources very scarce hence actors need to interact with one another.

When analysing what impeded the implementation of DDMCs in Hargeisa, we observed how barriers have occurred in fact both for NERAD and the Municipality. The results pointed to the predictable big role of resource constraints as one can expect for a developing country. Our expectations on the weight of high vulnerability, little adaptive capacity, weak institutional environments, and the low priority of adaptation compared to other more pressing issues of social and economic nature like security and poverty were confirmed by the results of the barrier types found in Hargeisa. The results however, especially highlighted the importance of those institutional barriers that occur in the interactions with other levels of governance, crucial for supporting adaptive actions at grassroot levels such as the DDMC, as widely confirmed in literature (Wisner 2001; Allen 2006; Blaikie 2006; Urwin and Jordan 2008 Biesbroek 2013; Wamsler 2013; Oberlack and Neumarker 2014; Scott and Storper 2014).

In current conditions in fact, changes in urban disaster management can occur only if the whole governance system for DRM and not only urban actors, address the barriers. This implies a need for upper levels in pushing decentralisation not as 'passing the buck' but as creating a more smooth structure for all actors, including the local government ones, to be empowered to act at their level and contribute to DRM. Such an observation suggests the potential through the elaboration of cross-scale interactions and barriers for a deeper understanding of the role of aid and non-state actors in the national and local climate change adaptation. UNDP has in fact the potential to set the conditions for reaping the benefits of the synergy between the different levels of the governance, as this UN agency is already involved in projects with all of them.

As a result of the disconnection between these levels of governance, urban DRM remains an uncovered topic for a series of reasons among which the fact that it does not appeal to the national level where funds are allocated. Furthermore, the communities remain unserved, but to sustainably contribute to the future of the country, their efforts must be "picked up" by Somaliland's institutions, who by definition are meant to carry the burden of collective action for their citizens. The governance system of DRM and the wider socio-economic context result to be the biggest contributors of problems to urban DRM after having traced the origin of each barrier to either the actors' behaviours, the system of concern of DRM and the wider context, as in Moser and Ekstorm (2010).

A different interpretation could have led to observing the unescapable weight of underdevelopment and its priorities as main reason for the lack of DRM measures in Hargeisa, however, such an understanding would not necessarily add something constructive nor to literature nor to the practice. As we observed, UNDP has the potential to be a change factor in the current DRM system. Collecting the respondents perceptions on the soon-to-be DDMCs, in addition to the barriers faced for their implementation (before UNDP's involvement), allowed us to see clearly the potential risks and benefits from the role in shaping governance of non-state actors. As of now, UNDP's intervention is perceived to be extremely needed not only in light of financial scarcity but especially for the scientific and technical competences it transfers to the institutions it cooperates with. A certain emphasis has been registered on the gaps in capacity for the institutions, rather than that of community, especially from civil society representation and non-state actors, with agreement from state institution employees. Key informants confirmed the general impression that more has been done to aid communities than to assist institution building.

However, if the project proceeds in creating DDMCS only through NGO trainings of volunteers from the community, without pragmatic measures for its integration in the system of governance, respondents feared not only a big reduction in the effectiveness of resource used, but also incentives for the municipality to take less responsibility of dealing with disaster impacts in the city. Many respondents forecasted how with UNDP's current strategy, the DDMCs would become just another shelf policy with no impact on the lives of the citizens. In the perspective of scalar politics, analysing the time and jurisdictional location of barriers origin assisted us in understanding the potential role played by UNDP's project of implementing DDMCs. As the agency aims to improve DRM and adaptation to climate change in Hargeisa, it needs a strategy that tackles the origin of the barriers,

which we saw resides exactly in the governance system interrelations. In this regards, more than one of the oldest among the respondents cited how a big asset for Hargeisa would be the tradition for Somalilanders to "sit down, talk it through, and take out the thorns one by one".

Significance and further research directions

Even if our single case study does not allow much direct generalisation, it is indeed an example of qualitative analysis where relations across scales and barriers come together in defining the adaptation process on the ground and its power dynamics. Furthermore, as the claims on national borders and statehood made by Somaliland do not match the experience on the ground (Hoehne 2015), focusing on the city means not only looking at the local level of DRM but rather at the place where institutions more closely exercise power on their territory. Choosing the city as a study case for Somaliland is not only a topic choice, but has here the potential to be a more grounded, less subjective analysis of power. This perspective appears even more reasonable considered the history of the Horn of Africa, where for centuries Sultanates have ruled their surroundings while being based in urban trade centres.

The framework of Oberlack and Eisenack (2014) assists us in taking the approach of combining change factors from international aid and barriers to the municipal government level. As for the framework of Moser and Ekstrom (2010), from which we combined barrier analysis with the abovementioned framework, it has greatly helped in maintaining the focus on the actions and actors, functional to the effort of finding solutions to barriers, and not only understanding of them. However, especially in its tools, like the diagnostic questions for locating barrier sources, a certain bias for respondents scientifically informed and specifically trained for adaptation could be registered, suggesting how it might have been thought with Californian actors in mind. The problem of floods and droughts in Hargeisa was in fact only vaguely framed in terms of disaster management, let alone climate change adaptation. The word 'mitigation' was used by the respondents to point to the need for a pre-emptive approach to reduce the potential impact of disasters, should they occur, instead of indicating measures of carbon emission reduction. Nonetheless, as Somaliland's state is structured just as all other recognised nation-states, all elements of the framework were applicable and the lack of recognition appeared not to affect the application of such analysis structure.

Despite early reaching saturation point on issues regarding resource constraints, a longer field research would have certainly added insight to the comprehension of institutional interactions and challenges in light of the changing roles and emerging spaces of decision making and decision support in Hargeisa. Nonetheless the qualitative methods adopted resulted suitable to a situation where quantitative information are minimally available and accurate. Furthermore, the renown oratory of Somali people contributed to the depth of understanding and richness in details that we could reap with the semi-structured interviews, and potentially even more with unstructured conversations. However, in light also of the statistical limitation, we shall take from Benjamin Barner in discussing subjectivity biases,

> *"The idea of the city, while obviously descriptive, is (like almost every other political construct including equality, liberty, justice, the state, democracy, authority and legitimacy) powerfully normative as well. We cannot describe the city without revealing our assessments of its place in in human development and morals, without hinting at likes and dislikes that reflect not the urban community but our views about it." (2013, p.40)*

Recognising this possibility, the structure of the operationalised research, the moment in which the author's subjectivity could affect most the data analysis is in the process of tracking the origin of barriers to either the system of concern, the wider governance and socio-economical context, and the actors. However, the research conclusions include the necessity of deepening the current relation with those actors of institutions tackling DRM and local government and community empowerment as integrated in the wider governance system, all three possible sources of barriers result necessarily all involved in the strategy for overcoming barriers.

The analysis of other data regarding identifiable barriers and scale relations had less space for subjectivity and was directed by the rather clear expression of the respondents concerns and perceptions regarding institutions, their processes, their difficulties and uncertainties in interacting. Their outspoken gratitude for accessing international expertise and resources parallels their awareness of the challenges of delivering development aid, of collective decision-making and of organising roles and responsibilities among several actors. Furthermore, as the project moves through its phases throughout the management and towards the self-evaluation and monitoring, different actors could represent institutions and new interactions would occur. Electoral staff turnover and shifts in roles already tend to, using a respondents words, create a " new arena" and different barriers might thus be recorded. The people selected as respondents –if based on their direct involvement in the topic – could differ from those at present, compromising replicability for a prospective research.

We aim here at contributing to the scientific literature on Somaliland's institutions, for once not as the main scholarship focusing on statehood or on peace and security issues, but on how Somaliland's independent institutions are being constructed and interact in the specific system of concern of floods and droughts in the city. This study represents hence an attempt at recognising how issues that are often treated separately by the academia not only have a connection in the reality of development practice, but can also more clearly assist in the process of identifying potential solutions. Albeit being certainly limited in its relevance and quality, due to the limited amount of respondents and specifically of municipal actors that could be involved, this paper uncovers the need for further research on the specific integration of institutions in Hargeisa for local disaster risk management and on the methods for analysing governance paths to overcome barriers.

The specific case of Hargeisa suggests further research should look into the role of private sector, the community in interacting with state structures in this specific almost informal landscape. In history, in the context of Hargeisa communities have shown a higher resilience than that of institutions, and have been crucial in gathering resources for all levels of the governance system. Indeed they represent a potential game-changing actors for the future of the institutions of Somaliland, but in order not to fall back in anarchy, they have to be complemented by institutions that can take charge of the collective efforts. Furthermore, the incredible growth that is taking place in Hargeisa represents a big asset for the country and its interest in attracting business ventures from abroad. Protecting it from the increased extreme weather events that will occur because of climate change would represent a prudent strategy for the future of the area.

The priceless opportunity offered by peace and by a culture whose traditional structures imply collective decision-making and community self-support is potentially enhanced by the freedom that respondents claim hides in un-recognition, where forms of collaboration between states and institutions can be imagined and realistically implemented among already inter-connected local society.

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Annex 1

Interview Guide

Introduction

This research focuses on the governance of disaster risk management (DRM) as a measure to help the city of Hargeisa to adapt to climate change, and specifically to the issues of droughts and floods. For this reason, the information we are seeking from you include your and your office/agency/Ngo background; your involvement and role in DRM for the city of Hargeisa and the challenges you and the city might have faced along the way.
I have studied the history of the horn of Africa and Somaliland; I used to work with the Italian cooperation in Nairobi but am no longer involved in official relations between Italy and Somalia and only dedicate to scientific research.
For this reason, I would like to address the issue of confidentiality: what you say here will be used for research purposes only, not be stored under your name, not shared with your colleagues or superiors or any other respondent. This interview will take approximately 1 hour.

To assist the research by keeping a record of the discussion, we would like to record the interview. Please note that any recorded information will only be used for the purposes of research. The audio file will be deleted as soon as transcription is done, and shared with no one. Any direct quote will be reported anonymously and please also instruct us of any information you would like to be keep out of the research process due its sensitivity. Before beginning the interview, I must ask you if these conditions allow for your consent.

Section I background respondent and office

1. Can you tell me about your professional history?
    a. Where did you start?
    b. For how long have you held this position?

2. Can you tell me about your education background?

3. Please tell me, what are your office's management responsibilities?
   -for each function
    a. Does your office interact with others at local, regional or national level to do [each management responsibility]? In which terms?
    b. How about with international agencies? Since when?
    c. Private sector?
    d. Community?
    e. Diaspora?

4. What are the current priorities/ projects you are dealing with?

    a. What and who are your priorities defined by?

Section II DRM in Hargeisa

5. In a broad sense, could you tell me what tools does the City of Hargeisa have to plan and cope with climate change, droughts and floods?
    a. *(prompt for both political and technological)*
    b. Is there a national plan of action for adaptation to climate change?
    c. If so, when was it adopted? Who helped write it?
    d. Do you feel the issue is felt outside of the governance system in society (i.e. by Hargeisa's citizens, by the diaspora, in the media)?

6. Now I'd like to focus on your position. Can you give me an idea of what you and your office have done in terms of floods and droughts in the past?
    a. How about specifically for the city of Hargeisa?'

7. Who do you interact with to carry out this function? *[prompt for all national levels and international agencies]*

    a. How does this interaction work?
    b. What does this relationship bring to your office?
    c. What difficulties did you face?

    (Repeat for each interaction
    And if not mentioned, specifically ask for interactions with HLC & NERAD)

8. Now I would ask you to DRAW all the actors that you think are involved in the decision making process for DRM in Hargeisa..and their interactions

9. Can you describe how this wider governance process in urban DRM for Hargeisa works?
    a. How are the competences for urban DRM distributed?
    b. Who initiates the process?
    c. What information is needed for decisions?
    d. Who approves or review decisions? Can anyone supersede?
    e. How long does the process take?
    f. Is there a strategy or policy of reference?
    g. Is there consistency in actor's participation?
    h. How is coordination addressed?
    i. How does the resource distribution work? Are there vested interest?

10. IF HLC/HWC How do you think droughts and floods affect the resources and responsibilities of your office/jurisdiction? (including infrastructure, social well being, the natural ecosystem)

a. And in the future?

11. IF NOT HLC/HWC How do you think droughts and floods affect the resources and responsibilities of the urban authorities of Hargeisa? Can you elaborate?
    a. And in the future?

Section III Adaptation Process

12. [Only for HLC] We would like to understand where you currently are in the adaptation process. Picking up from what you just said, would you say you are still trying to Understand the problem you need to adapt to, or have you moved on to Develop Plans of what to do or are you already Implementing some plans?

Triggers, initial leadership and support

13. Can you tell me when and how droughts and floods first came to the attention of the governance system as an issue of the city of Hargeisa?
    a. Do you remember if something in particular triggered the general attention to the topic?
    b. Who initiated the political process? Who took the initial leadership role?
    c. When was this?
    a. Was there political support? From where?
    b. Were there regulatory/legal issues?

14. Among all actors, who do you think advocates most for disaster preparedness? Loudest voice?
    a. In the urban perspective? is it the same?

15. Is there community support for addressing these environmental threats?
    a. How does it manifest?
    b. Diaspora?
    c. Private sector?

Assessment

16. How were droughts and floods assessed in terms of their impact and potential occurrence in Hargeisa?
    a. What kind of information was needed?
    b. Was it accessible to you?
    c. Who collected it?
    d. What made it credible?
    e. What did you do with/without it?
    f. Who else was involved? Please elaborate.

17. What do you think were the constraints on how data on impacts and occurrence of droughts and floods was gathered?
    a. For example given your jurisdiction, was there something you could not look at?
    a. Scientific uncertainties?
    b. Financial constraints?
    c. Political?
    d. Social norms?
    e. Existing policies or regulation?

18. Was there negotiation of different views about which knowledge should be included?
19. Was it compatible with the decision making process or did it change the process?
20. What has been done (or will) with the knowledge gathered?

Development of alternatives

21. Have you developed possible options to deal with droughts and floods?
    d. Who led the process? What was their jurisdiction? how much control on process?
    e. Who else was involved (organisations, entities, individuals?)? with what influence?
    f. Would you say there was stakeholder participation? Who was solicited for feedback? How was the feedback taken into consideration?

22. Do you feel there were sufficient resources allocated for this step?

23. Do you think the options developed matched the existing agenda of your agency?

Selection among alternatives

24. Has there been a process of selection among the options presented? Tell me more..
    a. Who had voice in assessing them?
    b. Who was in charge? was authority clear?
    c. Were there conflicting interests?
    d. With which resources was the process carries out?
    e. Was training done?
    f. With which criteria? Who developed these? Was there agreement on these?
    g. Has this created any conflict?
    h. How much time was given for process? was it enough? Were there other timing issues?

25. What would you say was the outcome of this selection process?
26. Do you think the options had enough support in your community to be fully implemented if selected? Tell me more...

Section IV Implementation

27. Can you tell me if any of the selected options been implemented already?
    a. *[IF nothing has been implemented but strategies have been selected]*
        Was the intent to implement set?
        Was the necessary authorization given?
        Was it because of the resources available?
        Was anyone accountable to implement?
        Were strategies clear enough to implement?
        Were the selected options procedurally possible?
        Was there the necessary political will/support? Or other?

    b. *[IF informant is just beginning or in the middle of implementation]*
        Do current laws and institutional requirements support your intent to implement?
        Are there sufficient resources for the implementation? Where do they come from?
        Do you anticipate social and/or political acceptance of the strategies to implement?
        Does implementation require explanation, education, and skill building within your agency?

28. [*if nerad is not mentioned*] I understand that the National Agency for Environment Research and Disaster preparedness – the Nerad- embodies this strategy, right?
    a. When was it implemented?

29. Was the implementation of NERAD prearranged, within the planning process?

    a. Were responsibilities and resources clearly allocated? By who?

30. So, were you involved in its implementation?

    IF YES: How?
        Does/did it require coordination with other agencies/people/organisations?
    IF NO: What is the role of other relevant actors?
        who would you expect to take the lead on the implementation?
        Does it overlap with your office? How and how well did or do you coordinate with each other?
    IF ONLY IN THE PAST: when did you stop?

31. Reading from the Nerad policy available on the website - it planned for District Disaster management Committees for urban DRM, right? Can you tell me more about it?

32. How about the case of Hargeisa? Tell me more…

    [*Modulate following questions depending on their knowledge of the UNDP project of implementing DDMCs: if they mention it, ask specifically for the situation before UNDP's project]*

33. How do you expect the DDMCs to relate to the decision making process of DRM we talked about at the beginning of the interview? Elaborate..

34. Was the implementation of DDMCs planned for in the wider national process that brought to the establishment of the NERAD?

    IF YES

    a. Was this strategy within the responsibility or authority of your office?
    b. Were roles and responsibilities for implementation clear?
    c. Were there sufficient resources in staff, funding, knowledge..?
    d. Was a time frame specified for the implementation? Were there other timing issues?
    e. Were there competing priorities?
    f. Did any challenge arise?

    IF NOT

    Do you think it relates to:

    a. political support? From where did it come, if any?
    b. Was a particular authorisation needed?
    c. Because of funding?
    d. was there enough accountability?
    e. Staff capacities?
    f. Were there institutional requirements that undermined the intent?
    g. different priorities?
    h. Enough scientific knowledge?
    i. Enough awareness among decision-makers? Or among others?

35. How do you think this situation has affected urban DRM?
    a. ..has it affected the costs of DRM for the city? (Metaphorical costs also)
    b. ..how about the resources available?
    c. ..has it assisted the city administration in making a better use of resources?
    d. ..has created any space for further positive or negative practises?

36. FOR HLC/ Do you think the upper levels of government have given you adequate support in DRM?

Undp role

37. I understand that there is a UNDP project now dedicated to the implementation of DDMCs, can you tell me more about it?

38. *FOR NOT UNDP/* How has the intervention of an international organization affected the decision-making process of DRM, besides contributing with financial resources?

    a. Please do tell me both about positive factors but also challenges that have been faced or are expected.
    b. *(Prompt for more details and wide perspective)*

39. Do you think this kind of project has an effect on the Hargeisa Local government? Please elaborate..
40. Do you see or foresee potential unintended consequences?
41. Do you think this kind of project has an effect on how effectively and efficiently is the use of resources?

42. *FOR UNDP/*
    g. Who was involved in the planning process?
    h. How did it start?
    i. Who is involved in the implementation of DDMCs?
    j. What are the challenges you are facing?

43. How do you think this project relates to the overcoming of those institutional challenges of implementation you mentioned in the previous question? Tell me more..

44. What do you think are the advantages of a specifically urban disaster management provision like DDMCs for Hargeisa?
    a. Can you elaborate? Advantages for who?

45. What are the disadvantages? Please tell me more…

46. Had the implementation been conducted by another combination of national actors, do you think advantages and disadvantages would have been different?

47. How do you think the long due recognition of Somaliland's independence has affected the process?

Section Concluding

48. Do you see any specific needs on the horizon that you think you will have to take in consideration to adapt Hargeisa to the increasing droughts and floods? If so, what are these?

    a. What makes you think they will become issues in the future?
    b. Can your agency do these in its current jurisdiction?
    c. What has your office done to address these?
    d. How come you did not already address these?
    e. Who else should assist you?

f. Does this fit with your other priorities?

49. Finally, what do you see as biggest challenges for your office as you continue through the adaptation process dealing with droughts and floods?

50. Are there any written documents that could be useful for this research? Like reports/policy documents/ minutes of meetings..

51. *[Closing]* Is there anything else we might have missed that you think is relevant about the process of disaster management in the city of Hargeisa?

Interview Conclusion

Thank you again for your availability. As soon as possible, I will transcribe our conversation and delete the recording. In case after transcribing I need some clarifications, or some feedback on my research, can I contact you again?