University of Bonn
Department of Geography

Master Thesis

Resilience thinking in East Africa

Resilience concepts in global discourses, national politics and practical development work in Kenya and Tanzania

submitted by
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ALAT	Association of local authorities in Tanzania
ASRH	Adolescent Sexual & Reproductive Health
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
CAP	Community Action Plan
CDRRPs	Community Disaster Risk Reduction Plans
CMDRR	Community Managed Disaster Risk Reduction
CONCORD	European NGO Confederation for Relief and Development
DarMAERT	Dar es Salaam Multi-Agency Emergency Response Team
DFID	Department for International Development
DMC	Drought Management Committee
ECoRAD	The Project for Enhancing Community Resilience against Drought in Northern Kenya
FAO	Food and Agriculture Organisation of the United Nations
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IFPRI	International Food Policy Research Institute
IIRR	International Institute of Rural Reconstruction
JICA	Japan International Cooperation Agency
NGO	Non-governmental Organisation
NPO	Non-Profit-Organisation
NRM	Natural Resource Management
NSGRP	National Strategy for Growth and Reduction of Poverty
NSGRPII	National Strategy for Growth and Reduction of Poverty II
OECD	Organization for Economic, Co-Operation and Development
PfR	Partners for Resilience
RAI	Resilience Action International
SADC	Southern African Development Community
SAVIC	Solidarity & Advocacy with Vulnerable Individuals in Crisis
SDGs	Sustainable Development Goals
SES	social-ecological system
SET	Supporting Economic Transformation
StARCK+	Strengthening Adaptation and Resilience to Climate Change in Kenya Plus
TIC	Tanzania Investment Centre
TURP	Tanzania Urban Resilience Program

UNDP	United Nations Development Group
UNRISD	United Nations Research Institute for Social Development
USAID	United States Agency for International Development

1 Changing development interventions in the wake of increasing disaster risk – resilience as a promising concept in Kenya and Tanzania?

Frequency and intensity of natural and social disasters have increased rapidly in this millennium. Droughts, floods, hurricanes and many other natural disasters are particularly dangerous for the poor (ASIAN DEVELOPMENT BANK (ed.) 2015). Social disasters such as price fluctuations or the COVID-19 pandemic can also have devastating and long-lasting negative consequences for general wellbeing (DANG et al. 2020, HALLEGATTE et al. 2020, MARX et al. 2014). Every time a disaster occurs, livelihoods in poor communities are threatened or even destroyed. As disasters occur more frequently nowadays, the poor are more regularly confronted with setbacks that can trap them in a vicious circle of poverty. It is more difficult for them to cope with and recover from disasters as they have fewer resources themselves and receive less support from the public (HALLEGATTE et al. 2020, PFR (ed.) 2015). Accordingly, coping with disasters is regarded to be essential for increasing long-term wellbeing and is perceived by some as one of the most important objectives to reduce and end poverty (FAIETA 2017, ROWLING 2016, SHEPHERD et al. 2013).

In order to tackle poverty-related issues, there is growing consensus that impacts of shocks and disasters must be properly integrated into development projects. As a result, concepts of resilience have gained considerable importance over the last decade (FRANKENBERGER et al. 2012, 2014). Resilience concepts are increasingly popular because of two reasons. First, whilst past humanitarian aid and development programmes may have been able to save lives and improve general wellbeing, they have not sufficiently strengthened vulnerable groups against future shocks and stresses. However, as these shocks and stresses, e.g. caused by climate change, population growth or globalisation processes, become more and more probable, resilience concepts were called for, as they act proactively as a response mechanism to disasters rather than just reacting to them (BARETT and UPTON 2018, FRANKENBERGER et al. 2014, 2014b). Second, support for resilience concepts has grown as it has been shown that the costs of proactive development initiatives are many times lower than the resources usually spent on emergency relief (VENTON et al. 2012).

Resilience concepts focus on strengthening a system (usually a household or community) against shocks, stresses or disasters and implement appropriate preparedness, mitigation, adaptation or transformation measures so that natural and social disasters do not have severe and long-lasting consequences. And at first sight this makes sense as it "could help protect lives before a crisis hits, reduce potential economic losses, and empower people to take better decisions about the risks they […] face" (MITCHELL 2013, p.i). Even though there is no universal definition of resilience, it is widely recognised that resilience is more than just a system's ability to respond to and recover quickly after a disaster and return to its pre-disaster status as efficiently as possible (DFID (ed.) 2016, MAYUNGA and PEACOCK 2010). Rather, as a holistic approach, it is not only about withstanding or absorbing shocks or stresses, but additionally the ability to dynamically improve systems and facilitate long-term structural change, thereby responding to and reducing the underlying causes of poverty and vulnerability (BARETT and CONSTAS 2013, BÉNÉ et al. 2012, WALKER et al. 2004). A disaster can expose weaknesses within a system and resilience concepts focus on using disasters as a catalyst for positive transformation by addressing these underlying causes that had previously gone unnoticed (FOLKE et al. 2010, PELLING and DILL 2009, WALSH-DILLEY et al. 2013). Unlike other

development approaches, its basic idea is not to identify all existing causes of underdevelopment, but to show how things can actually get better.

Resilience has become a central paradigm in the field of development (BÉNÉ et al. 2012, MITCHELL 2013). Today, development agencies, international institutions as well as NGOs carry out numerous resilience-related development projects around the world, and in science one literally has the impression of drowning in the existing resilience literature. Projects are particularly prominent in the fields of disaster risk reduction, climate change adaptation or social protection, where they are perceived to be the missing puzzle piece that links the thematic fields (ACF-INTERNATIONAL (ed.) 2013, BÉNÉ et al. 2012, MITCHELL 2013, WILBANKS et al. 2014).

Both Kenya and Tanzania, which are examined in more detail in this master thesis, face difficult challenges with regard to disasters. Located in East Africa, both countries suffer from natural hazards such as droughts or floods but also from social disasters such as violent conflicts or food chain crises (HUHO and MUSYIMI 2016, RUDARI et al. 2018). As both countries have launched ambitious development plans to become middle-income countries by 2025 and 2030 respectively, many resilience policies and projects have been developed with the aim of making a substantial contribution to the corresponding development goals. Development agencies and non-governmental organisations - from FAO, World Bank and the United Nations to government ministries, the Red Cross and countless national and international NGOs - are implementing resilience strategies in both countries, ranging from small-scale actions to support local communities to frameworks for an entire country. Since the countries are disaster-prone, resilience concepts are perceived to play an important role in implementing and strengthening development processes and are considered essential to achieve sustainable development (GOVERNMENT OF KENYA (ed.) 2007, 2016, GOVERNMENT OF TANZANIA (ed.) 2000, 2012).

1.1 A framework for understanding resilience

As interest in resilience has grown and evolved over the last years, it is important to clarify what resilience actually implies (FRANKENBERGER et al. 2014). Many scientists, institutions or development agencies have put forward conceptual frameworks to illustrate elements contributing to resilience. In addition, these frameworks show how disasters, shocks and stresses affect livelihoods and how resilience concepts, through its measures and outcomes, influence the ability to cope with disasters. To better understand how a resilience concept functions, a comparatively simple resilience framework is presented below. It has to be noted that this is only one way to show how a resilience concept actually works. Other frameworks are usually much more complex or are characterised by significantly more depth in content (BÉNÉ et al. 2012, DFID (ed.) 2016, FRANKENBERGER et al. 2014, JEANS et al. 2016).

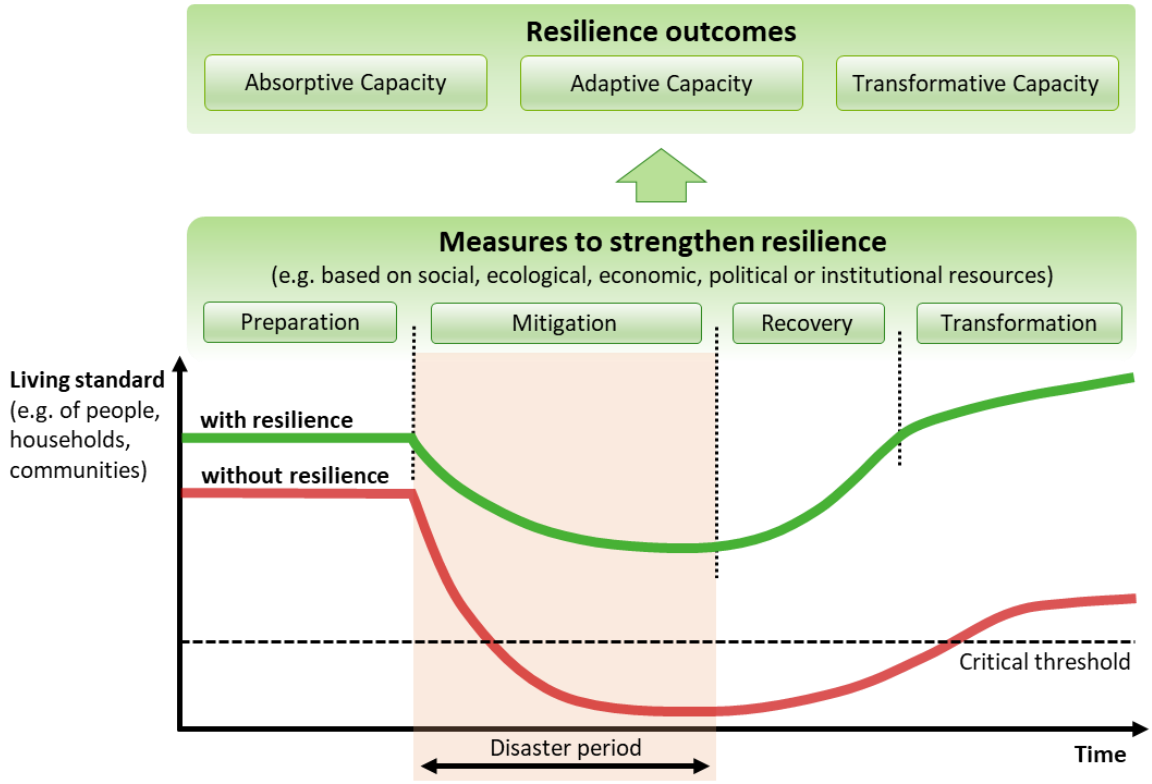


Figure 1: Conceptual Resilience Framework. Own presentation based on BÉNÉ et al. 2012, DFID (ed.) 2016, FRANKENBERGER et al. 2012, 2014, GOVERNMENT OF KENYA (ed.) 2015b, JEANS et al. 2016, UNDG (ed.) n.y.

As the figure above shows, the basic idea of a resilience concept is to reduce negative impacts of a disaster on living standards and to take measures to even improve them in the long term. The red line illustrates that people are in a critical situation when a disaster occurs if resilience has not been strengthened sufficiently. Falling below a critical threshold highlights the fact that the system (e.g. a person, a household or a community) cannot recover on its own and that living conditions are permanently deteriorated. By implementing various measures before, during and after a disaster or shock, the red line is raised towards the green line. A number of measures are designed to improve living conditions before a disaster occurs (preparation) and to absorb most of its direct impact (mitigation). After a disaster, recovery measures restore the system to pre-disaster status as efficiently as possible, thus allowing it to 'bounce back'. Transformation processes focus on improving living conditions even further. In total, strengthening resilience is achieved through

improved preparation, mitigation, recovery and transformation measures that draw, among other things, on social, ecological, economic or institutional resources. Combined measures lead to certain outcomes that enhance capacities of the respective system, meaning that there are now more opportunities to use or increase the available resources efficiently, effectively, relevantly and sustainably (cf. LAVERGNE and SAXBY 1999). Finally, resilience measures lead to enhanced absorptive, adaptive as well as transformative capacities, so that the system is better able to mitigate negative impacts of disasters, flexibly adapt its characteristics as a response mechanism or make fundamental changes within the system structure if necessary.

1.2 Purpose of the master thesis and problem definition

In recent years, resilience has become an important concept in the field of development, largely driven by international donors and government actors who are dependent on their resources (FELLI 2016, MITCHELL 2013). Currently, there is "an explosion of consultations and initiatives on resilience, happening at global, regional and national levels, with a multitude of interpretations on what resilience is, that is largely uncoordinated" (MITCHELL 2013, p. 1). Resilience projects are implemented by development agencies or NGOs and the term has found its way in many national development plans (BÉNÉ et al. 2012). Resilience concepts are applied both to different disasters and to different systems, and are implemented in practice through a variety of measures. Therefore, the term is rather abstract and difficult to define, as it is understood differently depending on the corresponding circumstances (FRANKENBERGER et al. 2012, KEMMERLING AND BOBAR 2018).

There are countless resilience-oriented scientific papers, but most of them analyse resilience on a more theoretical level or on a specific thematic content. Research on what the term may actually imply within the development context of a specific region is limited. However, as resilience in the field of development is becoming increasingly important, it seems useful to gain insight into the resulting advantages and disadvantages for development objectives in a specific region. As a result of previous research, there seems to be no analysis in Kenya and Tanzania that deals with the influence of the many resilience projects on development work in both countries.

This master thesis therefore aims to close this research gap by analysing how concepts of resilience are actually understood and implemented in practice within a specific regional development context. Taking Kenya and Tanzania as examples, the thesis critically examines how the increased use of resilience concepts affects national development goals and practical development work in the field. The aim is to analyse when, where, how and in which contexts resilience projects are initiated, as well as getting a better understanding about what is actually behind the term. Building on the basic understanding of resilience and its significance in global (development) discourses, this master thesis examines whether the use of the term in national development plans and other development programmes is comparatively consistent. Resilience projects implemented by development agencies and NGOs in Kenya and Tanzania are reviewed in terms of their objectives, content, potential benefits, but also shortcomings.

Furthermore, since the term has gained a lot of momentum recently, there is growing concern that it will mistakenly be perceived as some kind of panacea against disaster-related threats (BÉNÉ et al. 2012). As resilience concepts focus on positive changes, there is a risk that they will be uncritically perceived as something desirable based on the fact that if the outcomes are positive, then the concepts themselves must be positive too. However, the popularity of the concept of resilience in

development discourses has provoked various criticisms, both due to theoretical and practical limitations. These are, among other things, the concept's inability to address issues of agency and power (BÉNÉ et al. 2012, CANNON and MÜLLER-MAHN 2010), its system-enhancing objectives (RUNGIUS et al. 2018, WALSH-DILLEY et al. 2013) or its holistic approach, which may prove impracticable in actual implementation processes (MITCHELL 2013, MILLER et al. 2010). This master thesis further analyses whether the general criticism of the concept can also be found in individual projects or whether it turns out to be too excessive.

Some believe that resilience is just another buzzword in the field of development that may not be able to address poverty and vulnerability-related issues or may even stand in the way of the social change necessary for this (BROWN 2012, FELLI 2016, cf. KEMMERLING and BOBAR 2018). Others see it as a promising new concept that can offer many substantial advantages in the most diverse subject areas (FRANKENBERGER et al. 2014, MITCHELL 2013). With regard to Kenya and Tanzania, this master thesis examines whether, as a concept, resilience can fulfil its promising advantages fully or at least partially, or whether it promises too much and thus cannot live up to its own expectations. By analysing resilience and its relevance in global discourses, national politics and practical development work in Kenya and Tanzania, the use of the term in East Africa should become clearer.

1.3 Structure of the master thesis

Based on the problem definition, the further structure of the thesis is sketched below. The introductory chapter is rounded off by an explanation of key questions and the methodical approach.

The second chapter gives an overview of how the term is understood in global discourses. First, the development and dissemination of the term in science and society is explained and a rather basic understanding of the term is given. Building on this, the relevance of the term in the field of development is examined. A conceptual understanding of the term is demonstrated as well as its meaning and understanding in concrete development projects. In addition, similarities and differences between resilience and the concept of vulnerability in the field of development are addressed. The link between both concepts is highlighted. Finally, a critical assessment of resilience concepts is presented.

Chapter three gives an overview of Kenya and Tanzania and presents the general development context. The most important development plans of both countries are looked at, as well as development plans in which resilience is a key target. With regard to Kenya, the process of devolution is also briefly discussed, as it has an influence on local development programmes.

The fourth chapter deals with resilience projects of national development agencies and international institutions. Four projects are presented, each focusing at strengthening resilience against a different disaster. First, the background problem of a particular disaster is discussed, afterwards the related project summarised. Resilience concepts against droughts, floods and climate change are presented, as is strengthening resilience in the agricultural sector.

Chapter five examines actions taken by NGOs to strengthen resilience. Three NGOs are presented that focus on strengthening resilience of communities and households. First, the NGO Partners for Resilience and its actions against climate-related disasters are presented. The second NGO is World Vision and it is outlined how the NGO aims to improve people's livelihoods by strengthening resilience. Finally, the local NGO Resilience Action International is highlighted and it is shown how the NGO aims to strengthen resilience by improving access to education and reproductive health.

Building on the resilience projects introduced in the previous two chapters, chapter six analyses the information gathered and makes statements on the main research question and subsequent sub-questions. The overall context of resilience concepts in East Africa is presented as well as the conceptual understanding of resilience underlying the projects. Concrete measures to strengthen resilience are outlined and a critical assessment is made. Finally, the relationship between resilience and vulnerability within the projects is examined.
The thesis concludes with a brief critique of the methodical approach and an outlook that summarises the most important findings in Kenya and Tanzania to show how the concept of resilience is understood and implemented and whether it can fulfil its own promising expectations.

1.4 Key questions

Drawing on the basic principles presented in the previous chapters, the following research question results:

How are concepts of resilience understood and implemented in Kenya and Tanzania?

It should be clarified what is associated with the term resilience. In addition to measures taken, this includes specific contexts, disasters and affected systems, in order to demonstrate the most comprehensive understanding of the term and its applications. Notably, the intention is not to compare resilience concepts in both countries. Instead, the examples of Kenya and Tanzania are used to present a better understanding of the concepts and their implications throughout East Africa. In order to be able to make statements on the main research question, some accompanying partial aspects are analysed. These are briefly presented and explained below. All sub-questions relate to Kenya and Tanzania.

What are key objectives of resilience concepts and what are associated benefits?

The intention is to outline what objectives and outcomes are to be achieved through resilience concepts. Whilst objectives can be noted regardless of whether the project has already been completed, beneficial outcomes have to be treated more cautiously, as projects may still be ongoing and evaluations are lacking.

In which thematic areas do resilience concepts find application?

This question is intended to outline the overall context of the presented resilience concepts. Resilience concepts can serve as countermeasures for different systems in the event of both natural and social disasters. The aim is to show against which disasters resilience concepts are implemented and who should benefit from them.

What measures are implemented to strengthen resilience?

This question aims to identify typical measures that find application in resilience projects. Since resilience concepts are used in different contexts, respective measures may be diverse. Against the background of capacity building and the specific circumstances in which the projects are embedded, ecological, economic, social and institutional measures to strengthen resilience should be highlighted.

Can the conceptual understanding of resilience in the field of development be found in practical development projects?

Chapter 2.1 presents a conceptual understanding of resilience in the field of development that emphasises the need to enhance absorptive, adaptive and/or transformative capacities in order to strengthen resilience. It will be analysed how this conceptual understanding is reflected in practical projects.

Can the conceptual criticism of resilience concepts be supported by practical projects and, if so, what are the consequences?

In recent years, criticism of resilience concepts has increased. The term is being critically questioned both as a theoretical construct and in terms of its practical usefulness (cf. BÉNÉ et al. 2012, cf. MITCHELL 2013, cf. WALSH-DILLEY et al. 2013). The aim is to show whether or not this criticism is reflected in practical development projects and what consequences may result from it.

How are the terms resilience and vulnerability linked to each other in practice?

Resilience is particularly linked to another term in the field of development, namely vulnerability. However, a precise correlation between the two terms has not yet been worked out in a universally valid way (BOBAR and WINDER 2018, GALLOPÍN 2006). The aim is to show how the terms correlate in practical application.

On which spatial and temporal scales do resilience concepts operate?

Resilience concepts differ in terms of their duration and project area. The aim is to analyse on which spatial and temporal scales resilience concepts operate and which differences can result from this for the respective projects.

1.5 Methodical approach

In order to give answers to the aforementioned research questions, a document analysis is used in this master thesis. By using this research method, the intention is to sift through and compare existing material on the subject. Selected documents reflect a certain section of social reality, in this case an understanding of resilience and its implementation measures of development agencies and NGOs in Kenya and Tanzania. In this respect, documents are interpreted and analysed in relation to the research questions mentioned above and based on a general understanding of resilience concepts, which is outlined in chapter two. A documentary analysis is the preferred approach for knowledge gathering here because direct access to the required data material, e.g.

through observations, surveys or measurements, is neither feasible nor promising (cf. UNIVERSITÄT LEIPZIG (ed.) 2020, cf. GARBE et al. n.y.).

In this master thesis, selected documents are considered to be project reports of development agencies, institutions and NGOs in Kenya and Tanzania. Additional content through background information, surveys, summaries, guidelines or annexes is also taken into account to further increase the information value. In a broader sense, project reports from development agencies and institutions are more concerned with a context-related understanding of resilience, including objectives and measures of concrete resilience concepts. Reports and general information from NGOs are more about how the term is understood as a whole by the NGOs themselves. Here, emphasis is put on local (sub-) projects, by means of which further information on resilience concepts in East Africa is to be made. In total, four resilience projects of development agencies and institutions as well as three NGOs in Kenya and Tanzania are featured in this master thesis to outline resilience concepts in practical development work in both countries. The selection of projects and NGOs is primarily based on the availability of information, the information density of the relevant material, the aim to examine as many thematic areas as possible and the attempt to include projects from both Kenya and Tanzania in the analysis. In the table below, the projects and NGOs are presented.

Table 1: Resilience concepts of the following development projects and the following NGOs are presented and examined in this master thesis.

Development projects
1. The Project for Enhancing Resilience against Drought in Northern Kenya
2. Tanzania Urban Resilience Program
3. Strengthening Adaptation and Resilience to Climate Change in Kenya Plus
4. The United Republic of Tanzania Resilience Strategy
NGOs
5. World Vision
6. Partners for Resilience
7. Resilience Action International

In general, the project and source selection was done according to the research question(s) and all sources should contain some form of information to answer the respective (sub-) questions (cf. MÜHLICH 2008). Selected documents are summarised to highlight a basic understanding of resilience in development projects in Kenya and Tanzania. The informational value of these materials is thereby demonstrated.

Next, since the aim is to break down the sources in terms of content, a qualitative content analysis is used in this master thesis. Here, certain topics, contents and aspects from the gathered material shall be filtered out based on the previously defined aspects and questions in chapter 1.4. It is analysed what statements can be made in relation to these (sub-) questions. For this purpose, the references in the data material to the searched topic areas and sub-questions are marked. These references are then extracted and their contents summarised. The results of this summarised extracted material are then highlighted, analysed and discussed in the sixth chapter of this master thesis (cf. MÜHLICH 2008, cf. MAYRING 1988).

2 Resilience in global discourses

Becoming more and more popular over the last decades, the term resilience has nowadays found its way into various scientific and social discourses (SAUNDERS and BECKER 2015). The fact that the term has a descriptive as well as a normative dimension leads to resilience concepts being used in various scientific disciplines, such as ecology, development research, sociology, geography, public health, economics, urban development or psychology (SCHNEIDER and VOGT 2017, BRÜCKNER 2010, WINDLE 2010, SIMON et al. 2018, BRIGUGLIO et al. 2009). In disciplines where resilience concepts have come to the fore, namely in ecology and development research, they are regarded as central paradigms, thereby reframing discourses and replacing other concepts (BÉNÉ et al. 2012, COTE and NIGHTINGALE 2012, CANNON and MÜLLER-MAHN 2010). Whereas some scholars (VAN BREDA 2018, cf. THOMA 2014) say that the term has, to some extent, already become a 'leer significant' (LACLAU 1994) and has thus been lost in its own arbitrariness, others argue that the vagueness and versatility of resilience concepts could be their main strengths in a world where problems and shocks are becoming more global, complex, covariant and interlinked (BÉNÉ et al. 2012, ADGER et al. 2005).

Resilience is defined differently depending not only on the discipline in general, but also on the specific thematic background in which scientists or policymakers are participating (MAYUNGA and PEACOCK 2010, BONNANO et al. 2014). In the past, resilience was mostly used to describe the ability of a system to 'bounce back' after a disaster or shock to pre-disaster state. A system, in that regard, could be anything, an individual, a household or community, an ecosystem or even an entire nation or an international community. Here, resilience could best be understood as a short-term phenomenon that helps the system to withstand the impact of disasters as good as possible to then recover from the negative effects immediately, thus preventing a threshold from being crossed into a new, worse and irreversible state of the respective system (RESILIENCE ALLIANCE (ed.) 2009, MILLER et al. 2010).

Over the last few years, focus has shifted from resilience being purely used to describe ecosystems to also describe systems in which mainly humans are affected by a disaster or shock, as well as the driving force behind recovery measures. Therefore, recent literature puts interest in adaptive capacity, which is the ability of individuals or communities to adapt to certain environmental and social threats over a longer period of time (GALLOPÍN 2006, SAUNDERS AND BECKER 2015, MANYENA 2006). If understood as a long-term approach, resilience focuses not only on the capacity for (immediate) recovery, but also on adaptation and transformation measures that enable the system to better respond to shocks in the long run and undergo changes necessary for this (CHELLERI et al. 2012). BÜRKNER (2010) stresses that regardless of the discourse in which the term is used, there is a common denominator for the understanding of the term. In his view, "resilience refers either to the ability of persons, social groups, systems or objects to compensate damage that has occurred or rather to restore functionality; or [it is understood as] the ability to react flexibly to hazards and ward off possible damage (ibid. 2010, p.24)[1]. CONSTAS et al. (2014, p.6) share the same understanding, but emphasise the durability of resilience concepts and therefore define resilience as "the capacity that ensures adverse stressors and shocks do not have long-lasting adverse [...] consequences".

[1] Translated from German. The original quote is as follows: „Resilienz" bezeichnet entweder die Fähigkeit von Personen, sozialen Gruppen, Systemen oder Gegenständen, eingetretene Schädigungen zu kompensieren bzw. die verlorene Funktionalität wieder herzustellen, oder die Fähigkeit, flexibel auf Gefährdungen zu reagieren und mögliche Schädigungen abzuwehren.

Dissatisfaction with models for ecosystem dynamics led to the emergence of resilience concepts in the field of ecology in the 1970s. HOLLING (1973), in his paper '*Resilience and Stability of Ecological Systems',* proposed resilience as a new concept to highlight the capacity of ecosystems to absorb disturbances whilst maintaining its basic functions. As ecosystems are characterised by periodical fluctuations and hence revolve around multiple stable states, resilience is about the system's capacity to remain in this state of equilibrium against changes and external shocks. If the system is affected by an abrupt disturbance, e.g. an earthquake or wildfire, resilience is given as long as its consequences do not cause the ecosystem to leave this state of equilibrium. However, if the consequences are so severe that the ecosystem is fundamentally thrown out of balance, resilience is no longer given with sometimes drastic changes in the individual variables of the system such as animals or plants (HOLLING 1987, FOLKE et al. 2010, COTE and NIGHTINGALE 2012).

Since the 1990s, interest in resilience has increased considerably because parallels have been drawn between the understanding of resilience in ecological modelling and its potential transferability and applicability to social sciences (PERRINGS 2006, COTE and NIGHTINGALE 2012, GUNDERSON and FOLKE 2011). Studies by WEIß et al. (2018) have shown that the societal and scientific diffusion of the concept of resilience has increased in recent decades, which underlines the interdisciplinary popularity of the term. Due to an increase in environmental disasters along with rising awareness of the impacts of these disasters for current and future generations, resilience concepts are seen as a possibility to stress dynamics between ecological and social systems (BEAUCHAMP et al. 2019). Resilience concepts were hence redefined as the capability of social-ecological systems (SES) to remain in stable domains (GUNDERSON 2000). Since the (mostly negative) influence of humans on ecosystems has increased exponentially and changing ecosystems therefore increasingly affect societies (cf. ASIAN DEVELOPMENT BANK (ed.) 2015), resilience of SES aims to strengthen individuals and their assets against natural influences and vice versa. As an integrated approach bringing together scientists from natural and social sciences, resilience concepts for SES are regarded to be capable of creating holistic approaches to current major challenges, such as tackling climate change or preserving biodiversity despite human intervention (FOLKE et al. 2010, LINKOW and TRUMP 2019, DEAL and GU 2018).

Along with resilience concepts being used to emphasise the interconnectedness between human and environmental variables within a SES, the objectives have shifted away from only resisting to shocks or withstanding change. Due to intensifying and more frequent disasters, resilience concepts also integrated adaptation and transformation processes as countermeasures into their frameworks, with the aim of dealing appropriately with long-term negative consequences. The main assumption behind this is that system enhancement to a shock can have long-lasting, positive consequences, making the system more robust to other future effects (MAYUNGA and PEACOCK 2010, DEAL and GU 2018, LEI et al. 2014). In this context, adaptability is about learning from experience and knowledge in order to adapt to shocks innovatively. Transformation, in turn, underlines the ability to completely change the system as soon as it becomes clear that it is no longer tenable (FOLKE et al. 2010, BERKES et al. 2003, BERKES and FOLKE 1998). Common thematic fields where these interdisciplinary studies on social-ecological resilience can be found are adaptation to environmental or climate change or disaster risk reduction strategies (KECK and SAKDAPOLRAK 2013, ADGER et al. 2009, DUGUMA et al. 2019).

Beside resilience concepts for SES, studies of resilience in social systems were intensified. By doing so, the term has been successfully integrated into social science research areas where it is no longer adjusted to ecology or social-ecology, but applied on social systems only. ADGER (2000, p. 347)

defines social resilience as “the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change”. The term thus found its way into the work of social change and included questions about the role of institutions or social power relations (KECK and SAKDAPOLRAK 2013, KEMMERLING and BOBAR 2018, cf. DAVIDSON 2010). Public and private institutions are important to strengthen the resilience of social systems, as they are responsible, for example, for implementation processes, knowledge gathering or raising community awareness. They are crucial for preparing for, coping with and adapting to disasters and shocks (cf. CRUZ et al. 2015). Power relations, in turn, are the basis on which every society is built, and their complexity should be incorporated as far as possible into concepts of resilience for social systems (cf. RAMCILOVIC-SUOMINEN and KOTILANEN 2020). Whilst adaptation processes are prominent in resilience concepts for SES, transformation processes are a particularly important factor in resilience concept for social systems only. In total, resilience has undergone substantial changes from the focus of persistence and system understanding in ecology to adaptation and system strengthening in SES to transformation processes and system renewal in social science against the backdrop of globalisation processes and global change (KECK and SAKDAPOLRAK 2013, KEMMERLING and BOBAR 2018).

The rise of the term resilience is based on the assumption that systematic approaches are best suited to cope with disasters. Whether environmental or social, these disasters are covariant, which means that they affect several variables of the system simultaneously. Furthermore, the significance of these effects varies across different scales and times and is additionally characterised by feedback dynamics[2] (BÉNÉ et al. 2012). Understood as socially constructed due to specific social, economic or political conditions (CANNON and MÜLLER-MAHN 2010), disasters can apparently best be dealt with resilience concepts as they take into account these cross- or multi-scale dynamics and feedbacks (BÉNÉ et al. 2012, LINKOW et al. 2019). Disasters are characterised through uncertainty and unpredictability and resilience concepts accept temporary non-equilibrium dynamics as inevitable, thus shifting policy objectives from simply stabilising or restoring a system to the ability to manage and adapt to change. The objective is to cope better with disasters rather than completely stopping them from occurring (RUNGIUS et al. 2018, KARIDI et al. 2018).

Although the term resilience is rather abstract and difficult to generalise, there are still some characteristics a system may have so that resilience can be enhanced more easily. According to BÉNÉ et al. (2012) and BAHADUR et al. (2010), resilience concepts can best be implemented if the system is characterised by social and economic justice as well as constructive and decentralised institutions. Further, it is of fundamental importance to incorporate directly affected communities during planning, response and recovery activities so that knowledge of various cultural and political networks contributes to the concept. At the same time, it is essential to involve affected communities, as this is crucial to ensure that the concepts have a long-term impact and that the respective measures are maintained.

Up until this point, there might have been the perception that resilience concepts are automatically something positive as they fortify systems against threats or hazards. However, it must be emphasised that resilience itself needs to be understood as a value-neutral term. Whilst the outcomes of resilience concepts are positive or negative, resilience in itself is neither ‘good’ nor

[2] Feedback dynamics, here, refer to causal chains between system properties or actors. Changes of a property or actor also influence other system factors and the system itself in general (Deaton 2018). Concerning resilience, this means that that the individual system factors must not be considered independently of each other. Strengthening resilience of one system variable can increase or decrease the resilience of another one.

'bad'. The concept of resilience is norm-free but is linked to outcomes that are normatively charged. A SES that is resilient may be robust towards all sorts of shocks or disasters, but whether the robustness is desirable depends on the specific context. For instance, in a dictatorship it may be neither fair nor desirable to have a resilient system because it could enhance inequality or strengthen the existing power relations. Alternatively, in the field of development work, it can be resource-intensive to become resilient, thus affecting general wellbeing of the poor (BÉNÉ et al. 2012, BEAUCHAMP et al. 2019, DERISSEN et al. 2009, WEICHSELGARTNER and KELMAN 2015, MITCHELL and HARRIS 2012). Therefore, resilience concepts must legitimise that the system is actually suitable for promoting resilience (RUNGIUS et al. 2018, KEMMERLING and BOBAR 2018).

Moreover, the sensitivity to shocks does not necessarily fit together with the ability to recover from them. Different households, for instance, may have the same probability to be hit by an external shock, e.g. a tornado. The capacity to recover, however, varies according to financial, political or environmental circumstances. A wealthier household might recover in a faster and better way than a poorer one (BÉNÉ et al. 2012, cf. MEYS and FRANZI 2018).

Lastly, the popularity of resilience concepts goes beyond the academic field. Today the term is often used in social discourses and popular media (KARIDI et al. 2018). The increasing use of the term is predicated on a changing perception of uncertainties, crises and risks. Threats are becoming more and more diffuse, complex and interconnected with each other and are therefore no longer attributable to clearly identifiable factors. At the same time, awareness for things that are unknown rises, creating the fundamental impression of constant uncertainty. Hence, societies or ecosystems are constantly perceived as vulnerable and violable (RUNGIUS et al. 2018, SCOONES 2019). The term resilience, a response strategy to cope with these perceived or existential uncertainties, disturbances or crises, does therefore often appear in conjunction with the terms 'vulnerability' and 'risk' (BÜRKNER 2010). It can be seen as an attempt to manifest the complexity of systems in a concept in which uncertainty and unknowability are accepted as central phenomena in society. Since resilience itself can be immeasurably enhanced, it promises hope and stability against unpredictable and inevitable crises and therefore gives people the impression of regaining control. Resilience, thus, does not exist by definition (RUNGIUS et al. 2018). Rather, it is constructed through social processes. Consequently, resilience must be considered in a culturally differentiated way in order to grasp its complexity. The term has thereby mainly been influenced by discourses in Western civilisations, where crises and their perceptions have increased significantly (UNGAR 2008, 2011).

In the following, the term resilience in the field of development will be examined in more detail. First of all, a conceptual understanding of the term is provided, followed by a general overview of resilience in development projects. Since the term is not unique in this field, vulnerability concepts will then be briefly examined and their link to resilience will be disclosed. Finally, a critical assessment of the main weaknesses of resilience concepts is carried out.

2.1 Resilience in the field of development – a conceptual understanding of the term

Mainly due to global warming and associated environmental hazards, resilience has become an important concept in the field of development (FRANKENBERGER et al. 2014). The term is constantly gaining importance, particularly in the areas of disaster risk reduction, climate change adaptation, social protection, ecosystem management, peacebuilding or food and nutrition security. Its main goal is to find solutions to challenges that have interconnected and multi-scale social, economic, political or ecological dimensions (KEMMERLING and BOBAR 2018, BÉNÉ et al. 2012, BROWN 2012, MITCHELL 2013). In direct response to the recognition that shocks and disasters - whether social or environmental - are a major challenge to development processes and human wellbeing, it stresses the importance of households, communities or entire regions to allocate resources and build capacity to better anticipate, cope with and adapt to shocks, disasters or long-term structural changes. By appropriately dealing with shocks and stresses, these disturbances do not initiate a downward spiral. Instead, they may even offer windows of opportunity for transformational change (WALSH-DILLEY et al. 2013, SPERANZA 2010, FOLKE et al. 2010).

As has already been stressed, resilience means many things to many people and development work is no exception here. MITCHELL and HARRIS (2012, p. 2), for instance, define resilience in the field of development as the "ability to resist, recover from, or adapt to the effects of a shock or a change". BARRETT and CONSTAS (2014, p. 14626), in turn, put emphasis particularly on capacity building as it is crucial to make a system resilient and thus define resilience as "the capacity over time of a person, household or other aggregate unit to avoid poverty in the face of various stressors and in the wake of myriad shocks. If and only if that capacity is and remains high over time, then the unit is resilient". Among other things and depending on the specific context, capacity building may include measures to withstand and absorb shocks, prepare for and cope with disruptions, recover and bounce back, adapt basic structures to be more suitable for future events or create changes for system transformation. Resilience is thus understood as a bundle of measures that prevent shocks and disasters from having long-term negative effects (TWIGG 2007, AFC INTERNATIONAL (ed.) 2013). It is generally considered to be a process rather than a property of a system because resilience levels vary continuously as the system and associated disturbances change over time (PENDALL et al. 2010). Since many future shocks are modelled unprecedented in terms of their impact, strength, magnitude or duration compared to shocks in recent human history, the ability to prepare for and respond to unknown disasters is seen as extremely important for a resilience concept in today's world (BÉNÉ et al. 2012, NEW et al. 2011).

In general, the current consensus on resilience in development fields distinguishes between three different capacities needed to strengthen resilience, all of which affect the system in different ways. These summarise the capacity building measures mentioned above. *Absorptive, adaptive and transformative* capacities are seen as the underlying structures for strengthening the resilience of a system[3]. As the following figure shows, absorptive capacity helps to stabilise the structure of a system so that it can withstand short-term disturbances. Adaptive capacity is about making

[3] In practice, this classification is not always found. Sometimes classifications of capacities are made in particular in terms of time. Then, capacity is classified according to whether it is built before, during, immediately after or after an interruption. As a result, absorption capacity is divided into anticipation/preparedness capacity before an interruption and mitigation/response capacity during one (cf. PFR (eds.) 2015, cf. GOVERNMENT OF KENYA (eds.) 2015b).

adjustments during and immediately after a disruption in order to flexibly increment changes within the system as a reaction mechanism. Finally, transformative capacity emphasises that the system undergoes significant changes in its core functional processes and structures after a disaster or shock-related disruption (BÉNÉ et al. 2012, OBRIST et al. 2010, KECK AND SAKDAPOLRAK 2013, MATYAS and PELLING 2012).

Absorptive capacity: The ability of a system to prepare for, mitigate or prevent the impacts of negative events using predetermined coping responses in order to preserve and restore essential basic structures and functions (Cutter *et al.*, 2008; Béné *et al.*, 2012; UNISDR, 2009) .

Adaptive capacity: The ability of a system to adjust, modify or change its characteristics and actions to moderate potential, future damage and to take advantage of opportunities, all in order to continue functioning without major qualitative changes in function or structural identity (Inter-governmental Panel on Climate Change, 2012; Béné *et al.*, 2012).

Transformative capacity: The ability to create a fundamentally new system when ecological, economic or social structures make the existing system untenable (Walker *et al.*, 2004).

Figure 2: Definitions of absorptive, adaptive and transformative capacity (MITCHELL 2013, p. 4).

Strengthening resilience can be achieved as a result of enhancing all three capacities. In theory, this may suggest "that managing for resilience requires directing a system in a way that promotes resistance in a period of small disturbance, adaptation in a time of greater disturbance, and transformability when conditions are becoming unviable or unsustainable" (BÉNÉ et al. 2012, p. 23). Conceptually, the three responses to disasters or shocks can build on one another with the capacities succeeding each other depending on the required change necessary. Resilience can emerge due to enhancing all three capacities and is therefore not just about withstanding shocks but can also mean that systems implement adaptive or transformative changes following a disaster or shock (BÉNÉ et al. 2012).

In practical resilience concepts, however, a linear understanding of capacity enhancement is too simplistic as shocks and disasters are characterised by cross- or multi-scale dynamics affecting various parts of the system at different times with different intensities (LINKOW et al. 2019, WEICHSELGARTNER and KELMAN 2015, O´BRIEN et al. 2004). Resilience concepts must take this into account and therefore introduce measures that affect the system at several levels, which can lead to processes that stabilise, flexibilise and transform the system simultaneously. Capacity enhancements are not carried out independently of each other, but rather at the same time through various impacts of various measures (BÉNÉ et al. 2012, PENDALL et al. 2010, TANNER et al. 2017). They are based on a holistic systemic approach, which consists of many small contributing elements. Hence, outcomes of resilience concepts may lead to persistence, incremental adjustments or transformational responses, but these outcomes must be determined independently for each variable in the system, whilst considering that they may also change over time. For instance, absorptive capacity and transformative capacity enhancements are not necessarily a contradiction as it is possible to currently stabilise a system whilst simultaneously implementing transformative changes to take place in the future. The following figure illustrates the relationship between the three capacities needed to improve resilience and their impact on the system to which they refer (BÉNÉ et al. 2012).

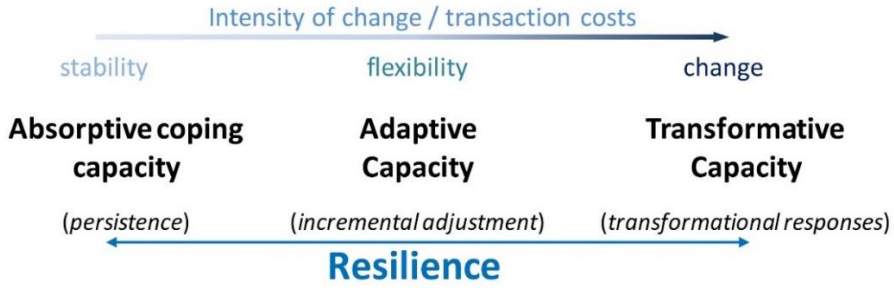


Figure 3: A framework that illustrates the relationship between the three capacities required to improve resilience and their impact on the system they are applied to (BÉNÉ et al. 2012, p. 21).

Although resilience can be achieved by improving all three capacities, the intensity of the respective capacity increase differs for each concept individually. Some concepts focus specifically on stabilising the system, mostly neglecting adaptation and transformation processes. Other concepts, in turn, focus particularly on acting as an accelerator of social change, thereby improving transformative capacities and paying little attention to absorptive capacities (PFR (ed.) 2015, BOBAR and WINDER 2018). Thus, whilst there is a conceptual understanding of resilience concepts that integrates all three dimensions of capacity enhancement and promotes synergies as well as complementary measures between them, in reality many resilience concepts fall short. Emphasis is often placed on only one dimension of capacity building, either on stabilising a system through some kind of 'buffer capacity' against shocks, or on changing a system in which case stability is then perceived as something undesirable (BÉNÉ et al. 2012, MILLER et al. 2010, NORRIS et al. 2008, BERMAN et al. 2012). In doing so, the interdependence of the three capacities is neglected and it is ignored that allocating resources for change is best acquired in times of stability and that changing a system in the present can make it much more stable in the future. There is growing risk that resilience concepts are mistakenly separated into two parts: either a concept that maintains and improves the system or a concept that changes it (cf. BÉNÉ et al. 2012, cf. CARTER and BARETT 2006).

In addition to the respective objectives of capacity enhancement, the question of what constitutes resilience depends on the social and/or environmental context in which the concept is embedded. It may differ depending on the system to which it is applied, on the disaster or shock it is used against and on the appropriate measures that are implemented. This is why concepts of resilience in the field of development depend on the questions 'resilience for whom' (e.g. household, community, local government) and 'resilience to what' (e.g. drought, flood, financial crash). In short, resilience measures differ in terms of whether they are people- or system-oriented, whether they focus primarily on stabilising or transforming a system, or whether social or environmental determinants are regarded as key factors (BOBAR and Winder 2018, TURNER 2014, BOUSQUET et al. 2016). By taking food security as an example, BOUSQUET et al. (2016) demonstrate this phenomenon. The authors point out that resilience is strengthened differently depending on whether it focuses on household capacity building or whether it focuses on SES enhancement. As regards the first option, "resilience emphasizes response recovery: the ability of households to respond to unanticipated variability and to learn how to recover quickly from shocks. In contrast, SES resilience approaches food security through social learning, early warning signals, and ecosystem service use. The emphasis is more on how to be prepared and buffer the shock, and how to develop in a way that the system still can keep its identity and functions" (ibid., p. 39).

Resilience concepts are implemented against a variety of disasters or shocks and offer a wide range of solutions. However, as the term is not treated conceptually identical and is also characterised by its contextual dependence, concepts of resilience are difficult to grasp. Individuals and institutions

all have different takes on resilience (KEMMERLING and BOBAR 2018, FELLI 2016). Problem definitions, methodologies, frameworks or implementation measures can differ for each concept respectively. For these reasons, the results of resilience concepts in the field of development are explicitly normative. They link absorptive, adaptive and transformative capacity enhancements, a specific disaster- and system-oriented context and classical development goals such as poverty reduction, wellbeing or livelihood security (BÉNÉ et al. 2012, cf. BARRET and SWALLOW 2006, BARRET and UPTON 2018, CF. BMZ (ed.) 2020, cf. BAHADUR et al. 2015). Broadly, the intention is "to make sure that, through inclusive systems-building and capacity development, individuals and communities have what they need to better prepare, manage and recover from crises" (UNDG (ed.) n.y., p. 9).

2.2 Resilience in development projects

In development work and humanitarian aid, the term resilience has only recently become popular in 2011. Increasing food prices, unrest in some developing countries, severe droughts and famines in the Horn of Africa and continuing calls for reconstruction after the earthquake in Haiti raised concerns about current development strategies. Whilst these previous strategies were able to save lives after a disaster, they have not been able to build capacity against shocks or strengthen communities against future hazards. More importantly, they have not been able to solve accompanying poverty-related problems such as inadequate infrastructure, degraded ecosystems, political instability or emerging conflicts over resources and power. The people affected by a disaster were consequently vulnerable to even minor shocks in the future with serious economic and social consequences that could affect or even reverse development processes (USAID (ed.) 2011, FAO (ed.) 2008, BARRET and UPTON 2018, BOUSQUET et al. 2016). In the meantime, with demand for development aid far exceeding the available financial resources, there was an urgent need to make development projects as efficient as possible, to which resilience concepts could contribute due to their perceived cost effectiveness (WAGNER and ANHOLT 2016, EUROPEAN COMMISSION (ed.) 2012, 2013).

To improve human wellbeing in a sustainable and disaster-resistant manner, development organisations increased their interest in and knowledge of resilience concepts in order to implement a new development paradigm that goes beyond strategies for economic growth and vulnerability. Here, resilience was perceived as a game changer, especially regarding long-lasting crises and dealing with socioecological threats (BOUSQUET et al. 2016, FRANKENBERGER et al. 2012, KEMMERLING and BOBAR 2018). Whilst the term originally comes from science, concepts of resilience today are used not only by academics, but also by development practitioners from development agencies, NGOs and government ministries. For instance, the World Bank, the United Nations, FAO, DFID, USAID, Oxfam or Care International have all integrated resilience approaches in their frameworks in line with their specific objectives. The use of resilience concepts by these multilateral donors and agencies illustrates the impacts of resilience concepts in development discourses (KEMMERLING and BOBAR 2018, WALSH-DILLEY et al. 2013, WORLD BANK (ed.) 2013, FAO (ed.) 2017, OXFAM INTERNATIONAL (ed.) 2009).

Although difficult to generalise, resilience is mainly associated with natural disasters in the field of development. As these natural disasters are more frequent and more severe and threaten an increasing number of individuals and various layers of society, building resilience to this type of disasters seems to be useful at first sight. In many projects, resilience is applied to a specific hazard such as 'flood resilience', 'drought resilience' or 'climate resilience' (MITCHELL 2013). In Kenya and

Tanzania, for example, many resilience concepts are particularly geared to droughts and floods as both countries suffer greatly from these disasters (GOVERNMENT OF KENYA (ed.) 2016, CRAWFORD and TERTON 2016). Strengthening resilience to natural disasters is either considered the main objective of a respective stand-alone project. Alternatively, it may be a sub-process or sub-target that contributes to achieving other disaster risk management objectives. In this case, resilience is integrated into long-term programming to strengthen disaster risk response through capacity building processes (MITCHELL 2013, cf. WORLD VISION (ed.) 2020d).

Social, geopolitical or economic disasters such as financial crises or inadequate (state) governance are hardly ever addressed in resilience concepts alone. Rather, they are often viewed as follow-up consequences occurring due to natural disasters (MITCHELL 2013). For instance, a drought as a natural disaster can lead to financial shortcomings, political instability, infrastructure destruction or social conflicts (GOVERNMENT OF KENYA (ed.) 2012, 2013, DETGES 2018). Attempts to strengthen resilience against natural disasters therefore implement not only environmental countermeasures but also social and economic improvements to tackle associated risks. Components that contribute to strengthening resilience in development projects include, for instance, natural resource management, food security, economic opportunities, livelihood diversity, social conflict prevention, community enhancement or network building (cf. GOVERNMENT OF KENYA (ed.) 2015b, OECD (ed.) 2013, PASTEUR 2011, LEVINE and PAVANELLO 2012). Resilience approaches in the field of development are mostly applied to strengthen resilience of individuals, local communities or specific institutions (PFR (ed.) 2015).

As resilience concepts vary depending on social, environmental and economic circumstances, they must be long-term and comprehensive in order to maximise benefits and identify all causal factors that stand in the way of success (FRANKENBERGER et al. 2012). To enhance resilience, respective programmes and funding flows in disaster-prone regions should have a duration of six to ten years whilst being flexible enough to adapt to changing social and environmental circumstances during the project period (TANGO INTERNATIONAL (ed.) 2012, MITCHELL 2013, FRANKENBERGER et al. 2012). They are particularly needed when people's lives are threatened by social tensions and food insecurity caused by natural disasters. Most resilience projects take place in rural areas (FAO (ed.) 2017, 2018, FRANKENBERGER et al. 2012, b). Against this background, it is important to stress that rural areas are often characterised by a lack of public investment and effective local governance, which makes it difficult for development actors to act on the ground and launch projects to strengthen resilience. Moreover, these areas have limited financial potential and therefore attract fewer private investors. Projects to strengthen resilience, through their results, may tackle these issues. This can help to stop a vicious circle in which a lack of development and investment strategies leads to more vulnerable population groups, which in turn depend on short-term national or international support after a disaster (MORTIMORE 2009, FRANKENBERGER et al. 2012, MITCHELL 2013).

As outlined in chapter 2.1, a system is resilient due to its absorptive, adaptive and transformative capacity enhancements. With regard to practical implementation processes of resilience concepts in development projects, this means a variety of different measures affecting the system in many ways. Absorptive capacity thereby is about anticipating shocks or disasters and reacting to them appropriately. The aim is to gain a better understanding of their effects so that proactive countermeasures can be taken (PFR (ed.) 2015). This may include implementing early warning systems that collect information and pass it on to the population[4]. Here, it is common practice to

[4] This is particularly important, as hazard information and risk analyses are often not accessible. And if they are, they are often not suitable because they are outdated or of different scale (Mitchell 2013).

gather knowledge, monitor potential hazards as well as related threats and communicate actions to communities and individuals supported by the project. So-called participatory processes are carried out in which community members explain how certain threats negatively affect their lives and what countermeasures can be taken (cf. BAUDOIN 2014, cf. BALDWIN 2020). In addition, new resources and technologies may be made available to enhance the preparation and coping capacities of individuals and communities alike (MARK and SEEMAN 2008). Alongside early warning systems, it is quite common within a resilience concept to develop new contingency plans for the respective risk-related circumstances or improve existing ones based on past experiences and future scenarios (BANKHEAD 2020, PFR (ed.) 2015). Another common implementation measure of resilience projects is the creation of formal and informal safety nets. Implemented before a disaster occurs, these safety nets act as a form of insurance cover, with whole communities providing social and financial capital for individuals who suffer during and after times of disruption (WORLD FOOD PROGRAMME (ed.) 2020, IIRR (ed.) 2011). During a disruption, it is further common for resilience projects to establish local or regional emergency teams and provide them with adequate training to take over when needed (MCCREIGHT 2010). At the same time, resources can be made available for peace building and conflict resolution missions, since a natural disaster increases potential for conflict due to resource scarcity (FRANKENBERGER et al. 2012b, KURTZ and SCARBOROUGH 2011). Overall, absorptive capacity helps to minimise impacts of disruptions, thereby having the potential to save lives, reduce economic damage or secure livelihoods (cf. FRANKENBERGER et al. 2012).

Adaptive capacity focuses on ensuring that the system recovers from a shock and that long-term measures are put in place to help coping with future disasters (LUDI et al. 2011). In general, it is about strengthening environmental, social or economic capacities with long-term consequences (cf. PFR (ed.) 2015). In the field of environment, focus is on measures that make the system more resilient to natural disasters, for example through increased reforestation or improved water availability and management (CLIMATE ADAPT (ed.) 2020, PRABHAKAR et al. 2014). Economic adaptation processes should ensure livelihood security for households and communities affected. This may include measures to make sources of income more robust and diverse and to further improve trade opportunities through better market access and infrastructure development (cf. ALINOVI et al. 2010, cf. MORTIMORE 2009, GOVERNMENT OF KENYA 2015b). In this context, it is important to stress that the development of financial services can in particular contribute to economic adaptation measures, as they may enable economic growth through credits and financial security (cf. HOFF et al. 2005, cf. PFR (ed.) 2015). In turn, social capacity enhancements are usually about strengthening communities and their historically weakest members, such as women, disabled people or children. In this way, individuals are empowered, trained and educated so that they have a more sophisticated knowledge of disasters and countermeasures, as well as an increased awareness to maintain implemented resilience measures. In addition, measures to strengthen peacebuilding processes are common in resilience approaches to reduce conflict potential due to resource scarcity (cf. MCNEIL and WOOLCOCK 2004, cf. IFPRI (ed.) 2012, cf. FRANKENBERGER et al. 2007, FRANKENBERGER et al. 2012).

Lastly, the improvement of transformative capacities focuses mainly on changing basic structures of systems, thus emphasising policy and, where possible, power-relation changes. In this respect, advocacy, among other things, may be provided to communities to challenge policy makers to promote disaster-related policies and a fairer and more proactive allocation of resources (UNRISD (ed.) 2016). Moreover, policy plans are common to be readjusted to include more effective measures to strengthen resilience. Another point worth mentioning is that transformative capacity

can also include measures to change cultural, religious or ideological barriers that stand in the way of building resilience (cf. PFR (ed.) 2015). As communities may have a high threshold of acceptance for disaster impact, this is seen as a potential to change behaviours entirely (MITCHELL 2013). In short, the intention is to promote formal and informal governance accordingly to improve access to resources, knowledge, education, markets and technologies (FRANKENBERGER et al. 2012, b).
The above-mentioned capacity improvements are obviously only some of the measures that can be implemented to strengthen resilience in the field of development and there are many more. As a multidimensional capacity, resilience relies on a wide range of resources, including human, political, economic, environmental and institutional ones (UNDG (ed.) n.y.). Which capacity enhancements are implemented is different for each resilience project and depends on the systemic and catastrophic circumstances as well as the available financial and human resources of the project team (FRANKENBERGER et al. 2012, 2014, b). Resilience in development projects "requires an understanding of the optimal set of absorptive, adaptive and transformative capacities of individuals and communities" (UNDG (ed.) n.y., p. 9). Seemingly still rather abstract, later chapters will examine in more detail what capacity enhancements really mean and effect in project implementation. However, the listed capacity enhancements should not be regarded independently of each other, but rather as interrelated. This means, for example, that measures to improve absorptive capacity can also lead to improvements in other capacities, either through their own results or through their impact on other capacity enhancement measures (BÉNÉ et al. 2012, FOLKE et al. 2010, UNDG (ed.) n.y.).
In summary, recurrent disasters in developing countries have led to the emergence of concepts of resilience, as past responses have been criticised for their inability to meet the short and long-term needs of the most vulnerable. At the same time, there is a growing interest in the adaptation and transformation of social and ecological systems because human actions, from the local to the global, have in many cases made the biosphere in which humans are embedded untenable and unsustainable (cf. ROCKSTRÖM et al. 2009, cf. BOUSQUET et al. 2016, cf. BARROT and UPTON 2018). Resilience has become increasingly influential in the field of development as an objective to enhance capacities against disasters and shocks (cf. MITCHELL 2013).

2.3 Resilience and other development concepts

Resilience cannot provide a guiding paradigm for all development interventions on its own. Rather, it is only one - admittedly very prominent - facet in the field of development. There are many other concepts implemented to enhance development processes and tackle poverty-related issues. Resilience concepts, hence, should not be understood in isolation but rather in context. In development research and practice, resilience concepts are often associated with other commonly used terms and concepts, such as risk, adaptation, equity, vulnerability or sustainability. It is noteworthy that these concepts often overlap with each other and are characterised by their fuzzy and unspecific terminology (ADGER et al. 2001, BURTON et al. 2002, DERISSEN et al. 2009, PAUL 2013, REDMAN 2014). Thus, although resilience concepts can function as a stand-alone project, they can also either incorporate knowledge from other development concepts or contribute to their successful implementation. For instance, the Tanzania Urban Resilience Program (compare chapter 4.2), which intends to build urban resilience against rainfall and floods, gains knowledge from vulnerability studies whilst at the same time enhancing sustainability and being aligned with the country's national climate change strategy and other climate adaptation objectives (WORLD BANK

(ed.) 2019, GOVERNMENT OF TANZANIA (ed.) 2010, 2012, 2015). In the following, another influential concept in development, vulnerability, is discussed and the link to resilience is pointed out.

2.3.1 Resilience and vulnerability

Vulnerability is defined as a system's degree of susceptibility against external or internal stressors and its incapability to withstand threatening circumstances (ADGER 2006, EMRICH and CUTTER 2011, PAUL 2013). Concerning human beings, vulnerability applies to groups or individuals that are in danger of lacking access to basic needs such as food, water, income or health (BÜRKNER 2010, CARDONA et al. 2012). It is mostly experienced based on insecurity due to war, violent conflicts and an accompanying economic and social downward spiral (ADGER 2006, HEWITT 1997).

In development research and practice, vulnerability studies are a well-established concept with the intention to expose underlying causes of vulnerability by focusing on social power relations and social processes as key factors to improve human wellbeing (MÜLLER-MAHN and VERNE 2014, MILLER et al. 2010). Since the poorest are most vulnerable to environmental shocks and disasters as well as social, structural and political injustices, vulnerability concepts are deeply rooted in the field of poverty reduction (BÉNÉ et al. 2012, EDITORIAL 2006). As an analytical tool, vulnerability describes "the existing condition of susceptibility to harm, powerlessness, and marginality of both physical and socio-ecological systems" (PAUL 2013, p. 65). Vulnerability concepts lay focus on direct responses to shocks rather than long-term changes. If applied as actor-oriented concepts, they intend to identify interests and agencies of actors, thereby gaining knowledge about issues of governance, power or social change (DOWNING et al. 2005, MILLER et al. 2010, EAKING and LUERS 2006). From a societal perspective, policy interventions should reduce vulnerability through a better allocation of resources (CANNON and MÜLLER-MAHN 2010).

Recently, there has been a shift from vulnerability studies to resilience concepts, which, content-related, can be derived from the recognition of the importance of ecological systems and their impact on humans as well as the necessity to prepare for future shocks (GALLOPÍN 2006, FRANKENBERGER et al. 2012). Whereas vulnerability studies may not always be applicable for unpredictable future events, resilience concepts are more capable of doing so, as they incorporate unknowability and uncertainty as key elements in their approaches (BÜRKNER et al. 2010, RUNGIUS et al. 2018, NORI and SCOONES 2019). However, the relationship between resilience and vulnerability is neither clear nor specified and there is still an ongoing discussion about how both concepts are correlated and aligned (BOBAR and WINDER 2018, GALLOPÍN 2006). Both concepts are linked to disturbances and their implications for SES, with vulnerability being perceived as the antonym of resilience, where more resilience leads to less vulnerability and vice versa (BÉNÉ et al. 2012, FOLKE 2006, WEICHSELGARTNER and KELMAN 2015). Furthermore, resilience and vulnerability studies both have a regard for exploring diversity and buffering shocks, therefore using similar methodological elements and hybrid approaches to get information about perspectives of vulnerable groups in a more successful way (ADGER 1999, BERKES and SEIXAS 2005, ZIERVOGEL 2006, MILLER et al. 2010). Both concepts are also highly scale, scope and context-specific and are concerned with the adoption of a multiscale perspective to understand multi- and cross-scale temporal processes (BÉNÉ et al. 2012, MILLER et al. 2010, EAKING and WEBBE 2009).

Resilience and vulnerability concepts differ, however, with respect to their objectives, research issues and frameworks, which is why data interpretation might be different. Whereas resilience concepts usually intend to lead to a long-term adjustment of a system to strengthen it against

disturbances and therefore examine slow- and long-term drivers of change, vulnerability studies analyse shorter periods and put emphasis on human agency (MILLER et al. 2010, ZIERVOGEL and TAYLOR 2008). Even though resilience has focused on and integrated social dimensions in its concepts, it often is still bound to ecological or SES (GUNDERSON and HOLLING 2002, OLLSON et al. 2006). Vulnerability studies, in contrast, highlight social and economic interactions as the main obstacle of human wellbeing (BHARWANI et al. 2005, MILLER et al. 2010, BIRKMANN 2006). Resilience is more about ecology as well as understanding and fostering systems whilst vulnerability is more about society and its underlying structures (GALLOPÍN 2006, BÉNÉ et al. 2012, MILLER et al. 2010). The main difference between the two concepts is that vulnerability studies examine deficits and resilience concepts focus on increasing capacities of systems so that things can actually get better. Since resilience can by no means provide a guiding paradigm in development domains on its own, one could intuitively try to compensate potential shortcomings of resilience with vulnerability concepts. The link between the two terms is that the intention is usually to move from a state of vulnerability to a state of resilience. For instance, vulnerability studies can be useful to understand why and how communities are exposed to certain hazards, thus providing a basic understanding on which resilience concepts can build on their measures (BÉNÉ et al. 2012). With its focus more on power and social structures, vulnerability studies already provide many concepts to address certain issues in the field of development. Therefore, the shift from vulnerability to resilience is also viewed critically, as a well-established concept is simply replaced by a new one that still appears unripe. With vulnerability studies left behind, it is feared that the importance of understanding social system dynamics is diminished in the field of development (cf. CANNON and MÜLLER-MAHN 2010). Hence, BÉNÉ et al. (2012), for example, call for vulnerability as a part of every resilience concepts, integrating social processes and power relations as influencing factors. It might be more results-oriented if both concepts are linked to one another, rather than adopting one at the expense of the other. This way of thinking is already found in some development projects, where resilience measures are developed at least partly because of the results of vulnerability studies.

2.4 Critical assessment of resilience concepts

The spread of the concept of resilience from ecology and natural sciences to social sciences and development policy programmes is increasingly discussed in a critical manner. The main allegations relate to the blurredness of the term, its objective to keep things as they are by blindly maintaining systems, the normativity of the concept, its inability to consider social power relations and issues of agency as well as its functioning as a new form of neoliberal governance in development discourses (KEMMERLING and BOBAR 2018, CANNON and MÜLLER-MAHN 2010, BOUSQUET et al. 2016, WALSH-DILLEY et al. 2013, BÉNÉ et al. 2012, RUNGIUS et al. 2018, PELLING and MANUEL-NAVARETTE 2011). For development agencies and NGOs, the term can be seen as an expression of their own reform pressure due to changing political circumstances, donor-client relations and financial limitations (KEMMERLING and BOBAR 2018, FRANKENBERGER et al. 2012, 2014, b).

As a broad, rather abstract term that is now rooted in social and natural sciences, it is heavily criticised for its theoretical vagueness, low specificity and lack of operationalisation (BRAND and JAX 2007, JOSEPH 2013, KEMMERLING and BOBAR 2018). With the intention of being able to address various disasters, systems and their variables simultaneously whilst also taking into account multiple temporal and spatial scales and feedback dynamics, “there is the danger of using resilience to mean so much that in the end it means nothing” (WALSH-DILLEY et al. 2013, p. 17).

Perceived as a vague, general process rather than a concrete outcome, it is, according to some scientists, simply not applicable for projects on the ground since it can hardly be identified, evaluated or even properly measured (FOLKE et al. 2010, WALSH-DILLEY et al. 2013, DAVOUDI et al. 2012). It is a political agenda that often does not provide technical guidance for local staff and therefore does not clearly explain what resilience within the scope of a respective project actually means and how measures can be implemented in the best way (MITCHELL 2013, MILLER et al. 2010). Due to this, many development actors interpret resilience in a way that best suits their own needs and interests, as opposed to an approach based on contextual hazards, threats and existing good practices for managing them. Poorly communicated, there is cynicism towards the term because it does not seem to offer anything new (MITCHELL 2013).

To counteract this problem, some resilience concepts focus only on certain sub-variables of a system and only at local level. By focusing on a specific form of resilience (e.g. agricultural resilience) rather than a more general understanding of the term, more precise definitions should be outlined to make the term more applicable in practice (BRAND and JAX 2007). However, this sub-system focus may be dangerous as well because the interconnectedness between individual components of a system may thus fade into the background, thereby knowingly or unknowingly neglecting feedback dynamics. The increase of resilience in one part of a system can reduce it in other parts or even reduce the resilience of that system as a whole. For instance, food security can strengthen resilience against food scarcity whilst leading to environmental degradation that weakens resilience against natural disasters such as flooding (cf. FOLKE et al. 2010, cf. BIGGS et al. 2015, cf. CIFDALOZ et al. 2010). Resilience concepts struggle to meet their own holistic demands whilst proving to be suitable for practical use.

The ambiguity of resilience concepts exists due to their appearance in different scientific disciplines and discourses. However, the adaptation of resilience concepts from ecology to social sciences entails dangerous implications. It may falsely imply that society should somehow mimic or transmit resilience from ecological systems and, thus, creates the perception that resilience of a system is automatically something desirable or is achievable using materialistic items only (SWANSTROM 2008, MACKINNON and DERICKSON 2012, RUNGIUS et al. 2018). Yet, this is a misconception because resilience in a social system differs fundamentally from resilience in ecological or socioecological ones. Natural and social science are characterised through different methods and forms of knowledge production and this also affects the respective resilience concepts (cf. COTE and NIGHTINGALE 2012, BROWN 2014). Whereas resilience for ecological or socioecological systems focuses, for instance, on a bundle of environmental, economic, social or institutional measures to enhance system capacities, resilience in social systems is only strengthened through a change of political power relations and social processes. Therefore, resilience programmes in social sciences are always based on the normative assumption that a system and its strengthening have a right to exist. Concepts in social sciences have recently been heavily criticised if they did not provide justification for this because, if applied uncritically, these resilience programmes can contribute to the manifestation of negative societal conditions. As outlined in chapter 2.1, resilience concepts can be problematic if they strengthen undesirable states or (sub-) systems. Unfortunately, in political programmes, resilience is often wrongly seen as a target figure that functions as a panacea against uncertainty and risk. It is thereby disregarded whether the given power relations or state structures should be maintained and strengthened at all or whether they should be questioned and changed (KAUFMANN 2012, BROWN 2014, RUNGIUS et al. 2018, RUNGIUS and WELLER 2016). In the field of development, resilience concepts can lead to the legitimisation of current systems and institutions, possibly

without conducting a fundamentally critical debate on their usefulness and impact in relation to specific issues.

Therefore, as the concept has been mainstreamed and, consequently, is central in many development programmes, questions of system-change inevitably prohibit themselves. By emphasising the maintenance and enhancement of systems and their key variables, structures and functions, the aim is to improve a system through modifications rather than drastic system changes. Therefore, the concept is attached to a conservative notion to keep things as they are (WALSH-DILLEY et al. 2013, RUNGIUS et al. 2018, PIKE et al. 2010). Whilst transformation capacities are included in resilience concepts, central definitions and understandings of the concept nevertheless emphasise the persistence of basic system structures over time as a key objective (BEYMER-FARRIS et al. 2012). For this reason, resilience may not be a suitable concept for social systems if the intention is to bring progressive social change through fundamental structural shifts, as some of the objectives of the concept could potentially counteract this (cf. MACKINNON and DERICKSON 2012, WALKER and COOPER 2011). Resilience functions as a paradigm that strengthens dominant social power structures against changes and critical issues.

In the field of development, resilience concepts are mostly applied to enhance capacities of SES (MITCHELL 2013). As they are based on a systems theory approach that follows a natural scientific understanding of processes, it leaves power structures of social systems in the dark. By putting the adaptability of individuals, households or communities to potential crises in the foreground, underlying social or political structures that form the basis for their vulnerability against certain risks or disasters are veiled. Resilience concepts are not sufficiently conductive in including other political, economic or social issues that affect people's livelihoods and contribute to poverty (cf. CANNON and MÜLLER-MAHN 2010). At worst, this may lead to resilience concepts being implemented that solely focus on economic growth and stability, but the real reasons for poverty remain concealed and unchanged (cf. MULOK et al. 2012, WORLD BANK (ed.) 2015). Then, communities or individuals may be trapped in a never-ending coping situation where positive outcomes of resilience projects do not lead to an improvement for the majority of vulnerable populations and exclusory practices become anchored in society (PETERSEN 2014, BOUSQUET et al. 2016, MITCHELL 2013, WORLD BANK (ed.) 2015). As has already been stressed, the inclusion of vulnerability studies in resilience projects may counteract these weaknesses (BÉNÉ et al. (2012).

Neglecting social structures of a system is troubling for two more reasons. First, maybe except for the direct aftermath of a disaster, poverty and societal problems are more likely to be caused through an insufficient allocation of resources rather than an insufficient amount of resources available (cf. MAGDOFF 2008, BERTOW 2011). Since allocation processes are influenced by governance processes and social power relations, ignoring or reducing their effects in development programmes can hinder the increase of prosperity and human wellbeing. Second, a lack of understanding of social structures within a system can mask different perceptions of population groups affected by resilience programmes. However, integrating diverse, critical or even contradictory opinions from locals is viewed as highly important in development work. In order to achieve a long-lasting improvement of living conditions in a sustainable way, incorporating their views and knowledge has to be made a central process. If not, many possibilities to reduce poverty never come forward and development projects are virtually predetermined from top to bottom, reflecting the interests of governments, institutions or NGOs rather than interests of native individuals (cf. KUMAR 2006, KRUMMACHER 2004).

Another major concern of resilience programmes is their inability to consider adequately issues of agency. Agency can be understood as the ability of individuals to make their own decisions autonomously in the wake of unfavourable circumstances (LISTER 2004). If the resilience concept's focus lies to heavily on the system, it does not pay enough attention to the importance of individuals own participation in enhancing resilience and their choices to control associated processes. By integrating social capital in frameworks extrapolated from ecosystem studies, resilience thinking arguably naturalises the social, thus treating social processes and resources more deterministically and technocratically. Hence, shocks and disasters as well as recovery measures are depoliticised and erroneously treated as inevitable (e.g., the next drought will occur no matter what and capacity to cope with it has to be built inevitably). Social science thinking is insufficiently integrated in SES, although its importance is well recognised (COULTHARD 2012, WALSH-DILLEY 2013, WATTS 2011, TANNER et al. 2017). Still, there is a growing body of literature today that explicitly emphasises the importance of social dynamics and the role of agency as key factors of social resilience concepts (PENDALL et al. 2010). However, this literature is only relevant in development research. In actual development programmes, hardly any resilience concept that focuses dominantly on self-governance and transformation can be found (FELLI 2016, WAGNER and ANHOLT 2016). Moreover, these human-oriented approaches frame resilience as a personal attribute of communities, which may be problematic as well since they fade out environmental factors and their impacts as well as other state structures and institutions. Resilience concepts struggle to find the right balance between system focus and human agency (REID 2012, WALSH-DILLEY 2013).

Furthermore, resilience outcomes can lead to concerns about distributional and externality issues as well as a potential trade-off between resilience and wellbeing (BÉNÉ et al. 2012). Not every resilience intervention may have a positive outcome for every variable or individual in a specific system. Therefore, even if, for instance, an entire community becomes more resilient, there will most likely be some winners and some losers within that community. Consequently, trade-offs and asymmetries between different groups within the system have to be taken into account (BÉNÉ et al. 2012, LEACH 2008, WEICHSELGARTNER and KELMAN 2015). In the field of development, this is particularly concerning when the system is affected by violent conflicts (cf. GOVERNMENT OF KENYA (ed.) 2015b, PFR (ed.) 2015). Since marginalised powerless groups are much more likely to be among the losers, resilience concepts may unintentionally lead to inequality and emerging problems (BÉNÉ et al. 2012, cf. HORNBORG 2009). Accordingly, resilience concepts are criticised for not being a suitable concept in the field of development because poverty reduction cannot be substituted by resilience building, especially if one considers the subjectivity of the concept. In some cases, it might even be contradictory to the improvement of living conditions. For example, just because a household is resilient that does not mean that it is well. Rather, one can be poor and unwell, but at the same time very resilient. Furthermore, there can even be a trade-off, where becoming more resilient requires so many resources that it leads to a reduction of wellbeing or vice versa (BÉNÉ et al. 2012, COULTHARD 2012).

Resilience projects are nonetheless popular in the field of development because they partly resonate with the idea of a free market ideology. They intend to offer solutions on how to cope with uncertain future disasters and threats by implementing market-economy reforms in countries of the global South (KEMMERLING and BOBAR 2018). In doing so, resilience concepts are used to further embed neoliberal ideologies in development projects, poverty reduction and humanitarian assistance (WATTS 2011, WALKER and COOPER 2008, WALSH-DILLEY 2013, WRI (ed.) 2008).

Neoliberalism encourages a special form of social rules where individuals, communities and the private sector are empowered to be the drivers of social and economic wellbeing whilst the government still pushes "a particular agenda […] from a distance through the use of powers" (JOSEPH 2013, p. 44). Understood this way, resilience concepts can strengthen social or ecological systems in the most productive way if they are liberated from the state's influence. Therefore, state responsibility is increasingly transferred to individuals and local populations. That does not mean that government and development agencies do not hold control over processes. Instead, they still hold control; only the responsibility that used to rest on their shoulders is now shifted towards the population and civil actors (JOSEPH 2013, ZEBROWSKI 2013, BOUSQUET et al. 2016, EVANS and REID 2013). Whilst development agencies are responsible for project management, local authorities and civil society organisations play a fundamental role in implementing and promoting resilience measures on the ground (EUROPEAN COMMISSION (ed.) 2013). As international and foreign organisations and development agencies pursue their own political agendas, JOSEPH (2013) argues that they intend to use resilience concepts primarily to integrate the global South into international economic relations. Therefore, the rise of resilience concepts can be seen as an international form of neoliberal governance through which donors want to assert their own interests. Simultaneously, the local population is to some extent degraded as a test object on which the coping capacity and adaptability against various disasters and shocks is evaluated (WATTS 2011, JOSEPH 2013).

Development organisations and NGOs are pushing for the proliferation of resilience programmes, as they themselves are subject to reforms in order to remain competitive. Many developed countries have faced economic recessions over the last years because of financial crises, which has led to fewer financial opportunities for development agencies due to shifts in political interest and lower tax revenues (CONCORD (ed.) 2013, 2016, NESLEN 2014). Because disaster and poverty-related costs have risen significantly, resilience, perceived as the most cost-effective concept currently available, offers a solution to sustain development work whilst not overstressing budgets (KEMMERLING and BOBAR 2018, BMZ (ed.) 2013), FRANKENBERGER et al. 2012). NGOs, then again, depend on their donors and smoothly run funding streams to keep up their work. Governments and private investors urge NGOs to put more emphasis on resilience projects, thereby shifting development discourses whilst ignoring many concomitant difficulties that NGOs have when implementing these projects (FRANKENBERGER et al. 2012, 2014, MITCHELL 2013).

The emergence of resilience projects is therefore not necessarily based on their innovative approaches, but due to reform pressure of agencies and NGOs. Because of this, resilience is in danger of becoming another pragmatic buzzword that merely resembles "business-as-usual" (Brown 2012, p. 47) or even functions as a "bad abstraction" (FELLI 2016, p. 272) in development praxis, rather than representing an ambitious concept that is able to tackle development issues anew (KEMMERLING and BOBAR 2018). If resilience projects are unable to overcome the conceptual problems identified and remain vaguely communicated and understood in their practical implementation, its application potential loses credibility and it might end up being simply another failed development approach. Then, "the resilience approach will eventually be dropped from policy and programming, to be replaced by the 'the next big thing' to come along" (MITCHELL 2013, p.i).

3 Development goals of Kenya and Tanzania and resilience in national politics

Located in East Africa, both Kenya and Tanzania are characterised by their comparatively stable political systems and an economic situation with low average income but high economic growth. More broadly, the countries' relations can be described as healthy and potential for economic, cultural and political cooperation is high. Both countries can profit from one another in terms of trade, business and investment (OLUOCH 2019). However, there certainly have been and still are tensions between both countries in terms of economic development and political objectives (Collins 2019). As MINDE (in OLUOCH 2019) has put it, "the two countries have a long history of co-operation, albeit it is a love-hate relationship".

In the past, the two countries could be regarded as antagonistic in terms of political and economic ideologies. Kenya followed a neoliberal capitalist approach to development, establishing close ties with the West and benefiting from aid flows from many European and North American countries. Tanzania, on the other hand, took a more socialist approach and therefore had better relations with Asian and Eastern European countries (BARKAN 1994). Today, both countries are embedded in different geopolitical circumstances and want to portray themselves as the powerhouse of East Africa. Kenya and Tanzania are considered to be well placed in this respect, as they enjoy comparative long-term stability and economic growth (MAKAKALA 2020, OLUOCH 2019) in a region that has suffered for decades from state failure, ineffective governance, civil wars and terrorist organisations. Both countries aim to act as a 'safe harbour' in the region, thereby benefiting as an economic trade hub and further strengthening their economic potentials, e.g. in the tourism, energy, infrastructure or agriculture sectors (WRIGHT 2016, LUUKKANEN et al. 2014). Politically, both countries function as conflict mediators in the region (BMZ (ed.) 2020b, BABA 2020).

As both countries have similar geopolitical interests, potential for rivalry and conflicts between both countries is given, particularly if these interests are understood as a zero-sum game where only one country can establish itself as the emerging power hub in East Africa at the expense of the other. However, East Africa's potential is far from exhausted and there is room for both countries to thrive simultaneously in terms of both political importance and economic growth. By this token, both nations can benefit from their geopolitical situation (MAKAKALA 2020).

Kenya is the strongest economy and trade hub in East Africa. It is characterised by a robust private sector, ongoing investments in infrastructure, a growing middle-class, relatively high standards of education and a comparatively stable political and social system (GIZ (ed.) 2019). Economic growth rates are at an average of 5% over the last years (WORLD BANK (ed.) 2020). Although it is not as stable as it once were due to conflicts and violence in neighbouring countries and election aftermaths (von GEMMINGEN and HARNEIT-SIEVERS 2010, RISKLINE (ed.) 2017), it is still seen as a 'donors darling' of the West, partly because of its long-term relations with Europe and the US (cf. LINGNAU and SCHATZ 2020, cf. BARKAN 1994). The nation faces many challenges such as an insufficient agriculture sector, youth unemployment, social disparities and corruption. Almost half the population lives below the poverty line (GIZ (ed.) 2019).

The Kenyan government has implemented long-term development plans with the intention of becoming a middle-income country by 2030. Accordingly, the government and many donors have established common priorities, objectives and orientations to make this possible. Noteworthy, the structures and processes that have been developed are continuously adapted and revised so that new challenges such as climate change can be included. In practice, development work has turned

out to be comparatively simple, as coordination processes have been improved, e.g. by defining common criteria for the achievement of objectives or a more systematic, consistent implementation of these processes over a longer period. Projects to enhance the infrastructure sector are seen to be most promising whereas projects that are active in politically sensitive sectors are much more difficult to implement (VON GEMMINGEN and HARNEIT-SIEVERS 2010).

Tanzania, in turn, is rather characterised by peace and political stability. Its economy is weaker than Kenya's, but it is growing at higher rates (BMZ (ed.) 2020c, WRIGHT 2016). It benefits from its natural resources, such as minerals, gas, as well as a strong potential for tourism, a steadily growing urban middle-class and well-developed access to education, health services and water sources (LUUKKANEN et al. 2014, DANIDA (ed.) 2020). Tanzania is comparatively more dependent on development aid and has good historical ties with some European and Asian countries. It faces similar problems as Kenya and is further characterised by the absence of a functional private sector. Just as in Kenya, economic growth has not led to significant poverty reduction. The Tanzanian government has also implemented a long-term development plan, but the intention is to become a middle-income country already by 2025. For this purpose, development projects are aimed at improving living conditions through economic growth, a stable society, strengthening of social services or governance reforms (BABA 2020, DANIDA (ed.) 2020, LUUKKANEN et al. 2014).

Below, some development plans in both countries are briefly described to illustrate national development goals. Tanzania is addressed first, followed by Kenya. First, the major national development plans are presented, which contain general development objectives for each country respectively. General conditions, in which resilience concepts are largely embedded, are highlighted. Afterwards, more detailed development plans or strategies are outlined, focusing, inter alia, on economic sectors, social structures or environmental conditions. Since the concept of resilience plays an important role in some of them, these will be examined more closely to show the intentions behind resilience measures in national development plans. With regard to Kenya, the process of devolution is also discussed, as it has changed the political system in Kenya, which in turn has an impact on development work and resilience projects.

3.1 National development plans and objectives in Tanzania

The most important policy document for Tanzania is the 'Tanzanian Development Vision 2025' (Vision 2025). The document, ratified in 1999 and launched in 2000, serves as a blueprint to illustrate how Tanzania should become a middle-income country by 2025. Focus is on economic growth and human development. By 2025, Tanzania should be a country characterised by five main features: high quality livelihoods; peace, stability and unity; good governance; a well-trained and learning society; and a semi-industrialised, competitive economy capable of producing sustainable growth whilst sharing benefits fairly. Its objectives include overcoming social and financial inequalities, improving access to health care, promoting a peaceful society as well as creating and sharing prosperity whilst combating corruption. There should also be universal primary education and a strong, diversified and competitive economy that is resilient to social, economic and environmental threats. Annual economic growth rates are targeted at 8% of GDP (GOVERNMENT OF TANZANIA (ed.) n.y., LUUKKANEN et al. 2014, TIC (ed.) n.y.).

It was intended to implement this national plan through a series of five-year development plans. However, in the first decade of this millennium these five-year plans were lacking. In their absence, short and medium term strategies to reduce poverty were adopted as the main frameworks to

implement Vision 2025. The first of these frameworks was the Poverty Reduction Strategy Paper from 2000 to 2003, followed by the first National Strategy for Growth and Reduction of Poverty (NSGRP) from 2005 to 2010, which, then again, was followed by its successor document NSGRPII[5] from 2011 to 2015. These strategies focused mainly on combining economic growth, poverty reduction, an improvement of quality of life as well as enhanced governance processes. For this reason, these strategies addressed poverty-related issues such as education, nutrition, health, environment, water access, but also geographical disparities, urbanisation processes, infrastructure, science or the economy more generally (GOVERNMENT OF TANZANIA (ed.) 2000, 2000b, 2005, 2010, TIC (ed.) n.y.). However, these strategies have been criticised for their shortcomings in terms of specific interventions to achieve the objectives of Vision 2025 (GOVERNMENT OF TANZANIA (ed.) 2011).

From 2011 onwards, the government implemented three five-year development plans for the last 15 years of Vision 2025, each with a different theme. The first covered the period 2011-2016, the second has begun in 2016 and will last until 2021 and the third will begin in 2021 and end in 2025.

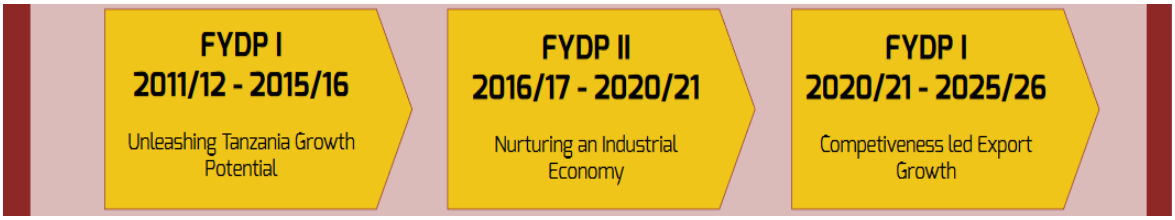


Figure 4: Five-year development plans and their themes (TIC (ed.) n.y., p.7).

The three plans together should lead to significant social and economic transformation so that middle-income status can be achieved. Interventions focus on reducing the impact of the agricultural sector whilst almost doubling the proportion of the productive sector in terms of GDP. Consequently, economic growth rates should increase even more (TIC (ed.) n.y.).

The first plan contributes to this by addressing growth constraints in five areas: infrastructure, agriculture, industry, human capital and economic services. Interventions include investments in the energy, transport and communication sectors, as well as in agriculture, manufacturing and mining. At the same time, the plan foresees the improvement of social services, an improved business environment and the reform of institutional processes (GOVERNMENT OF TANZANIA (ed.) 2011). The second plan, in turn, aims to mobilise resources to promote an industrial economy, to transform economic growth into substantial poverty reduction and to create jobs, particularly for women and youth. Income security, access to social services and social protection programmes will be strengthened (GOVERNMENT OF TANZANIA (ed.) 2016). Although hardly any information is yet available, the last five-year plan includes measures to make Tanzania's productive sector more competitive whilst significantly increasing the country's global and national trade potential (cf. GOVERNMENT OF TANZANIA (ed.) 2011, SET (ed.) 2016). The three five-year plans combined shall lead to the successful implementation of Vision 2025.

The results so far are mixed with some progress in terms of economic growth, increasing industrialisation and improving infrastructure. Around 60% of the objectives of the first five-year plan and of NSGRP II are being met. Challenges remain in terms of achieving continuous economic growth, its distribution, the fight against poverty and accelerating economic transformation (TIC (ed.) n.y.).

[5] Both strategies are more commonly known in Swahili as MKUKUTA I and II.

3.2 Resilience in national development plans and strategies in Tanzania

Two plans and strategies are discussed below to illustrate the intentions behind strengthening resilience. These are the Tanzania Climate Change Strategy and the Agriculture Climate Resilience Plan. Objectives and actual implementation processes are generally in line with the major national development plans outlined in the previous sub-chapter.

3.2.1 Tanzania Climate Change Strategy

Concerns about the impact of climate change on Tanzania's society, economy and environment have led to the development of the Tanzania Climate Change Strategy. It aims to strengthen resilience to climate change and to address associated problems accordingly. In this respect, resilience should be strengthened through mitigation and adaptation measures that enable Tanzania to cope with the impacts of climate change in the short term whilst adapting to its consequences in the long term. Resilience should be improved by building technical, institutional and individual capacities with beneficial outcomes for civil society, all economic sectors and the environment.

Since Tanzania is a relatively poor country, the strategy sees great potential here, as capacities have been improved only slightly so far, and if they have, then only locally and without an underlying holistic approach. Tanzania's climate change strategy will strengthen resilience and capacity building, inter alia, through ecosystem protection, public awareness raising, institutional strengthening, improved research, appropriate training, acquisition of disaster risk technologies and improved community participation. Concrete measures are thus diverse and range from improving forest fire control, promoting drought-resistant crops, improving health insurance systems to strengthening weather forecasting information, more diverse food production and a better mix of energy sources. Problems associated with climate change such as drought, floods, disease or sea level rise are considered a major threat to the realisation of Tanzania's Vision 2025 and its accompanying plans. The strategy is therefore viewed as an effort to translate some of the objectives of Vision 2025 into concrete actions on the ground. Resilience interventions are intended to contribute to food security, access to water, economic growth, physical and social infrastructure and overall political stability (GOVERNMENT OF TANZANIA (ed.) 2012).

3.2.2 Agriculture Climate Resilience Plan

In order to implement the National Climate Change Strategy for the agricultural sector, Tanzania has developed the Agriculture Climate Resilience Plan as a comprehensive guiding framework to build resilience and respond accordingly to the repercussions of climate change on the production of agricultural goods. The main challenges that the sector faces are water scarcity and crop losses due to rising temperatures and reduced rainfall. However, since the agricultural sector is linked to many other economic, social and environmental problems, resilience shall address many other factors holistically and in the long term in order to provide additional benefits. In particular, it shall take into account the living conditions of the people most vulnerable to climate variations, such as smallholders.

In this respect, the resilience plan focuses on mitigating the risks of climate change whilst also providing for adaptation measures. Joint resilience measures should be integrated into local policy

decisions, planning processes and practices. Among other things, measures focus on better and more sustainable land and water management, generating awareness and capacity at the local level to kickstart implementation processes, diversifying livelihoods of the most vulnerable and enhance climate knowledge and communication. Against this background, the objective is to strengthen institutions and mobilise a wider range of social, human and financial resources. Concrete actions include improving national and international trade and promoting early-maturing crops, disease-tolerant varieties, advanced storage and agroforestry systems as well as the increasing use of underground water sources. Overall, climate resilience should be improved through mitigation and adaptation measures, thereby recognising the social, environmental and economic challenges that the agricultural sector faces (GOVERNMENT OF TANZANIA (ed.) 2014).

3.3 National development plans and objectives in Kenya

Kenya's counterpart to Tanzania's Vision 2025 is Kenya's Vision 2030, the country's development plan between 2008 and 2030. The overall objective is similar because the country is to achieve middle-income country status by 2030 whilst becoming "a globally competitive and prosperous nation with a high quality of life" (GOVERNMENT OF KENYA (ed.) 2007, p. 2). In this context, Vision 2030 is based on three pillars, namely economic, social and political. The overall aim is to create and sustain economic growth of 10% annually, a just society characterised by equitable social development and a clean and safe environment, as well as a political system in which people and issues are at the centre, thereby ensuring accountability.

To enable the three pillars, the Vision 2030 envisages, inter alia, consolidating macroeconomic stability, continued governance and private sector reforms, improving equity and opportunity for the poor, promoting infrastructure and the energy sector and investing in science, land reforms, security and human development. In particular, the economic pillar is designed to boost agriculture, manufacturing and tourism whilst improving trade opportunities and financial services. The social pillar focuses on improving access to education, health services, water, sanitation and housing. It also aims to achieve a protected, clean and sustainable environment. Altogether, this should lead to the reduction of poverty and greater gender and age equality. Finally, the political pillar focuses on a strong political system with fair and secure elections, separation of powers, transparency and political accountability (GOVERNMENT OF KENYA (ed.) 2007, b).

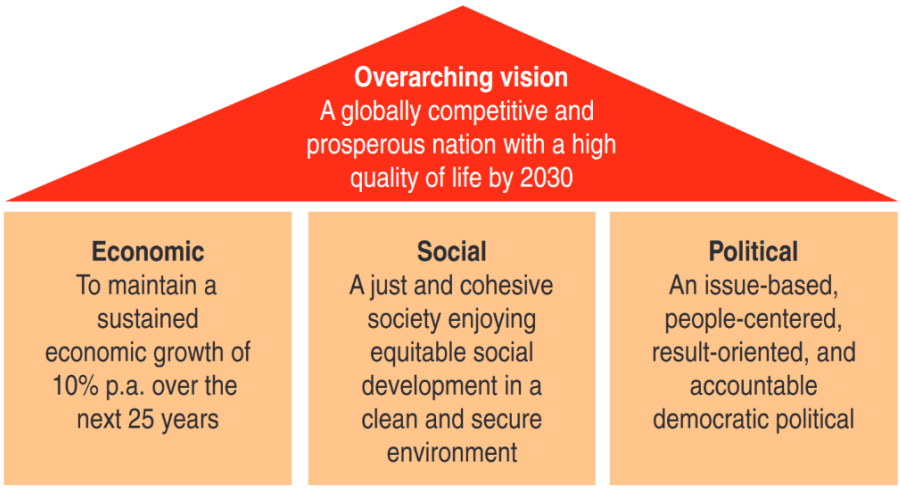


Figure 5: Overview of Kenya's Vision 2030 (GOVERNMENT OF KENYA (ed.) 2007, p. 2).

Vision 2030's objectives are to be implemented in successive five-year medium term plans up until 2030. Right now, there are three plans published. The first one covers the years 2008-2012, the second one 2013-2017 and the third one 2018-2022. These plans outline the main policies, institutional reforms as well as projects and programmes during the respective period. They intend to implement the abovementioned objectives of the three pillars, but are also characterised by their own objectives, which are adapted to the respective political, economic and environmental conditions during this period.

The first medium term plan, in this respect, focused particularly on higher and more sustainable economic growth whilst at the same time enabling a more equitable social environment. Policy measures intended to strengthen the economy and the society, thereby reducing the amount of Kenyans living below the poverty line. Accordingly, it has been taken into account that economic and social improvements can lead to environmental damage such as air pollution. Measures should have been adapted to these circumstances and have included environment-related issues (GOVERNMENT OF KENYA (ed.) 2008).

The second medium term plan, in turn, focused on transformational change in Kenya, thus putting both the process of decentralisation and socioeconomic development at the centre of attention. Behind the process of decentralisation is the political measure to decentralise the Kenyan government and strengthen political power and authorities at local county level. Socioeconomic development actions have built on the results of the first medium plan and should rapidly accelerate economic growth through infrastructure improvements and diversification of economic sectors. In addition, social development has been linked in particular to education, health care, water supply, sanitation and employment opportunities for youth. Furthermore, the plan has emphasised the importance of protecting the environment and building resilience against climate change impacts. This is an important step to ensure that transformational change can occur and that measures have long-lasting positive effects (GOVERNMENT OF KENYA (ed.) 2013d).

Lastly, the third and still ongoing medium plan prioritises the increase of manufacturing output, affordable housing, the achievement of universal health coverage as well as enhanced food and nutrition security, e.g. through irrigation projects or the construction of food storage facilities. Its thematic themes heavily resolve around resilience thinking and coping with disasters. First, focus is put on implementing disaster risk management systems to prevent, mitigate and recover from disaster effects whilst reducing disaster risk probability as a whole. Concerning climate change, development projects are encouraged to promote climate resilience and building capacity, for instance through increasing public awareness and strengthening institutions (GOVERNMENT OF KENYA (ed.) 2018b). In total, the five-year plans combined shall ensure the success of Vision 2030.

3.4 Resilience in national development plans and strategies in Kenya

To demonstrate the intentions behind resilience strengthening in national plans and strategies, two of them are outlined below. These are the National Climate Change Response Strategy and Kenya's National Adaptation Plan. As was the case for Tanzania, objectives and actual implementation processes are in line with Kenya's major national development plans outlined in the previous sub-chapter.

3.4.1 National Climate Change Response Strategy

Kenya's government has accepted that the country is already affected by climate change. In response, the country presented the National Climate Change Response Strategy in 2010 to strengthen climate resilience by mitigating and adapting to the impacts of climate change whilst reducing greenhouse gas emissions. In this regard, the "vulnerable nature of Kenya's natural resources and society" (GOVERNMENT OF KENYA (ed.) 2010b, p.5) shall be taken into account. Resilience-related objectives of the strategy include minimising climate change risks and disasters, raising awareness of the need to strengthen climate resilience, building local and public capacity, improving a legal and institutional framework for combating climate change and enhancing knowledge of climate change effects.

Adaptation measures relate to many climate-sensitive sectors such as water, forestry, agriculture, energy or infrastructure. A number of actions are either already underway or will be launched in the near future. Actions include, for instance, the promotion of crop varieties that are more resilient to drought or disease, the promotion of orphan crops that are better able to cope with adverse environmental conditions, better promotion of post-harvest processing and storage of agricultural products, the breeding of animals better able to cope with climate change or the provision of livestock insurance schemes. In turn, mitigation measures are generally aimed at promoting renewable energy, protecting and restoring ecosystems as well as launching social interventions to combat poverty. In sum, the strategy demonstrates the national interest in combating climate change by strengthening resilience (GOVERNMENT OF KENYA (ed.) 2010b).

3.4.2 Kenya National Adaptation Plan

Building on the National Climate Change Response Strategy, Kenya's National Adaptation Plan envisages enhanced climate resilience to achieve sustainable development and the objectives of Vision 2030. In comparison to the abovementioned strategy, however, its focus is mainly on adaptation measures. Based on the recognition that "adaptation and resilience remain Kenya's [...] priority response to climate change" (GOVERNMENT OF KENYA 2016, p.1), the plan foresees to enhance adaptive capacities in various layers of society, regions as well as economic sectors. Capacities will be built to cope with the socioeconomic impacts of climate change in the long term, both at macro level and at local county level. In this regard, its enhancements take place in various thematic fields such as agriculture (including fisheries and livestock), energy, infrastructure, education, health, the environment, tourism or urbanisation. Specific actions will be implemented between 2015 and 2030 and will broadly aim at mainstreaming resilience and adaptation in these sectors. The list of resilience measures is extensive, ranging, among others, from the development of climate-resilient infrastructure, the expansion of renewable energies, the creation of early warning and climate information services to the promotion of irrigation systems, the adaptation of agricultural products to drought tolerance, more robust livestock or better access to markets.

If enhanced climate resilience is made possible, overall outcomes can lead to a reduction in climate-related losses and damage as well as the cost of humanitarian aid, but also to a better preparedness for future shocks. Whilst the main emphasis is on adaptation measures, mitigation measures should also contribute to enhanced climate resilience, as synergies between the two can have a significant impact on the economy and the environment (GOVERNMENT OF KENYA (ed.) 2016).

3.5 Process of devolution in Kenya

In 2013, Kenyans voted to decentralise their government by adopting a devolved government system in which each of Kenya's 47 counties has its own local government with its own powers and authorisations. The desire of the citizens was to have public services closer to them, hoping that if decisions were taken at local level, they would focus more on local needs. The decentralisation process foresees that two of the three branches of government, namely the legislature and the executive, will be transferred to the counties, thus decentralising power, resources and representation to the local level (NGIGI and BUSOLO 2019). The national government still has control over foreign affairs, security and some national infrastructure, but the county government is in charge of public services and important development activities within its territories (GOVERNMENT OF KENYA 2015b). Intended positive outcomes of this process were a more equitable distribution of national resources, new local development plans, the involvement of the local population through participatory processes at local scale and greater transparency in political decision-making (NGIGI and BUSOLO 2019).

However, the decentralisation process is not something that can be achieved overnight. As many counties had little experience in providing government services, the provision of these services faced political, fiscal and administrative challenges. Among other things, this has led to corruption and mismanagement of funds, where politicians channelled money to projects that benefited them directly as well as high implementation costs due to an increase of government employees (WORLD BANK (ed.) 2019b, NDALIA 2016). There were also concerns that this process could lead to uneven development because some counties already had some public services in place whilst particularly rural and arid counties had to start from scratch. Many counties lacked the institutional and governmental capacity to meet the demands placed on them (NGIGI and BUSOLO 2019).

The need to strengthen institutional and governmental capacities of local administrations has been widely recognised by development agencies and international institutions (cf. OECD (ed.) 2011, cf. USAID (ed.) 2017). First, this is seen as important to ensure that local counties have the resources necessary to implement local and national development plans and goals by their own efforts. Second, the existence of strong national institutions on the ground can lead to better and more long-term results of development projects, as they can better be maintained or integrated into the county's objectives. There is concern that development projects sound good on paper and show promising results during the project period, but that their effects are only temporary and have little impact in the long term. Strengthening local capacities is supposed to prevent this (cf. PFR (ed.) 2015, cf. GOVERNMENT OF KENYA 2015b, OECD (ed.) 2011).

As will be demonstrated in the next three chapters, many resilience concepts in particular address low capacities of local governments and implement measures explicitly designed to enhance them. Resilience concepts not only aim to cope with shocks and disasters, but also to improve the governmental system in which the project operates dynamically and facilitate long-term structural changes. In this way, they intend to build transformative capacities that can fundamentally change the patterns of the counties. They contribute to a successful devolution process in Kenya, either by passing on project results to the government authorities so that they can use them, or by directly contributing to the development of local plans or to the implementation of national plans at local level according to prevailing conditions.

4 Resilience projects of national development agencies and international institutions in Kenya and Tanzania

Many national development agencies as well as international institutions have launched resilience projects to improve capacities against complex and interrelated risks and disasters. Various interventions have been carried out with the intention of preserving development gains during and after a disaster or shock (UNDP (ed.) n.y.).

Since resilience is strengthened through enhanced absorptive, adaptive and transformative capacity (BÉNÉ et al. 2012), respective development projects focus on this. They promote, among other things, adaptation to climate change, environmental protection or restoration, economic robustness and diversity, peace-building processes, early warning systems, gender and youth equality, social safety nets, education or enhanced governance and state effectiveness. Which measures are actually implemented depend on the specific exposure to disasters and shocks, the level of vulnerability of affected populations and societies as well as the already existing government coping capacity. In general, the intention is to strengthen resilience of a system through preparation, coping, adaptation and/or transformation measures, which in combination shall lead to better management of a disaster or shock.

Resilience concepts of national development agencies and international institutions also aim to promote the political agenda of the respective agency, institution or government. They are therefore linked to national development plans and international agreements and align their objectives with the corresponding national and international targets. At global level, these may include the Sendai Framework for Disaster Risk Reduction, the Paris Agreement on Climate Change or the SDGs (UNDP (ed.) n.y.). At national level, these approaches contribute to government development goals, such as adaptation to climate change, ending drought and flood emergencies or agricultural and economic strategies. (GOVERNMENT OF KEYNA (ed.) 2010, 2015, 2016, GOVERNMENT OF TANZANIA (ed.) 2007).

Their objectives take a holistic approach and aim to minimise negative effects of a particular disaster or disruption in a comprehensive manner. The projects aim to strengthen resilience for large populations, whereby capacities have an impact on different layers of society and large geographical areas. Although still context-dependent, resilience concepts are applied to entire cities, a number of counties as well as communities or even large regions, such as the entire western part of Tanzania. They achieve their objectives through the implementation of various sub-projects. These sub-projects usually enhance specific capacities through some of the abovementioned measures. Combined, results strengthen resilience and increase capacities through better preparation before a disaster, mitigation during one and adaptation as well as transformation after one. Results differ, however, in terms of how and for whom they are implemented.

In the following, four resilience projects in the field of development are presented. These are the Project for Enhancing Community Resilience against Drought in Northern Kenya, the Strengthening Adaptation and Resilience to Climate Change in Kenya Plus project, the Tanzania Urban Resilience Program and FAO's United Republic of Tanzania Resilience Strategy. It will be demonstrated how resilience concepts work against typical disasters in East Africa in a broader sense. In addition to a brief overview of the specific disasters and their impacts, the basic understandings of the concepts will be highlighted, including main objectives and how it is intended to maintain or improve living

conditions in general. Environmental, social and economic countermeasures are explained, and it is addressed which people should benefit when and where from the projects[6].

4.1 Resilience against drought

4.1.1 Background – droughts in Kenya

In Kenya, droughts are one of the most threatening natural hazards causing hunger, diseases and death. Direct consequences of droughts can lead to loss in health and wellbeing, food insecurity or resource-based conflicts, hence reducing social and economic development or even decreasing the nation's stability (CARABINE et al. 2015, GOVERNMENT OF KENYA (ed.) 2013c, 2015). According to the KENYAN MINISTRY OF FINANCE (2012), just the severe droughts between 2008 and 2011 alone have resulted in total financial losses estimated at US$ 12.1 billion with significant impacts for the poor. At the same time, droughts may indirectly affect other well-known development issues like water scarcity, education, peace and security, infrastructure, gender inequality or governance. They are therefore viewed as a challenge that needs to be tackled in order to achieve the Kenya Vision 2030 and respective county and regional development plans. As a result, numerous national and international development programmes and frameworks have been launched or already established over the last decade and the Kenyan Government intends to end drought emergencies by 2022 (CARABINE et al. 2015, GOVERNMENT OF KENYA (ed.) 2013, c).

Drought management has previously been characterised by its reactive, late-response approaches that have led to dependencies, reliance on food aid and the weakening or disruption of existing socioeconomic systems. Thus, there have been calls for resilience programmes to anticipate and prevent drought disasters whilst strengthening communities and societies in the long term. A shift in policy objectives has occurred from drought disaster response to a proactive attempt to reduce its impact. Resilience concepts are, to some extent, perceived as an option to adapt and transform systems that are particularly exposed to multiple and simultaneous shocks. Moreover, climate change, combined with a lack of infrastructure and ineffective governance, makes it important to prepare for future disasters in a more sophisticated and independent way. Common factors that are critical in improving resilience to drought disasters are security, infrastructure and human capital (CARABINE et al. 2015, GOVERNMENT OF KENYA (ed.) 2013c, MOCHIZUKI n.y.).

Although droughts influence Kenya as a whole, they are particularly concerning for humans living in arid or semi-arid lands. Thus, many resilience-related development programmes partly or completely put focus on these areas. For instance, the Regional Pastoral Livelihoods Resilience Project, the Bridging Relief and Resilience in the Arid and Semi-Arid Lands project, the Drought resilience in northern Kenya project or the Project for Enhancing Community Resilience against Drought in Northern Kenya have all recently been launched by the Kenyan Government and international development partners and focus explicitly on resilience-building measures in arid or semi-arid regions (GIZ (ed.) 2020, GOVERNMENT OF KENYA (ed.) 2013b, 2015b, WORLD FOOD PROGRAMME (ed.) 2018). The latter project is dealt with exemplarily in more detail below to demonstrate how precisely the concept of resilience is implemented to improve drought management.

[6] Unless stated otherwise in the text, project summaries of chapter four and five are based on the sources given at the end of each (sub-) project.

4.1.2 The Project for Enhancing Community Resilience against Drought in Northern Kenya

ECoRAD's main objective is to improve communities' resilience of pastoralists in Turkana County and Marsabit County, Northern Kenya. Next to pure pastoralists, the project also targeted semi-pastoralists who have lost part of their livestock in previous droughts and are therefore forced to live in settlements. Carried out by the Kenyan Government with support from the Japan International Cooperation Agency (JICA) between March 2012 and October 2015, it consisted of six excepted outcomes that all contribute to the projects main objective. These are highlighted in the following table and figure.

Table 2: Outcomes of ECoRAD (GOVERNMENT OF KENYA (ed.) 2015b, p. 55).

Outcome 1	Capacity of community based drought management is improved in targeted communities
Outcome 2	Sustainable natural resource management is realized in targeted communities
Outcome 3	Livestock value chain is improved in targeted communities
Outcome 4	Diversification of livelihoods is promoted in targeted communities
Outcome 5	Capacity of the government officers to enhance the pastoralists' resilience to drought is improved
Outcome 6	The guideline for enhancing the communities' resilience to drought is established

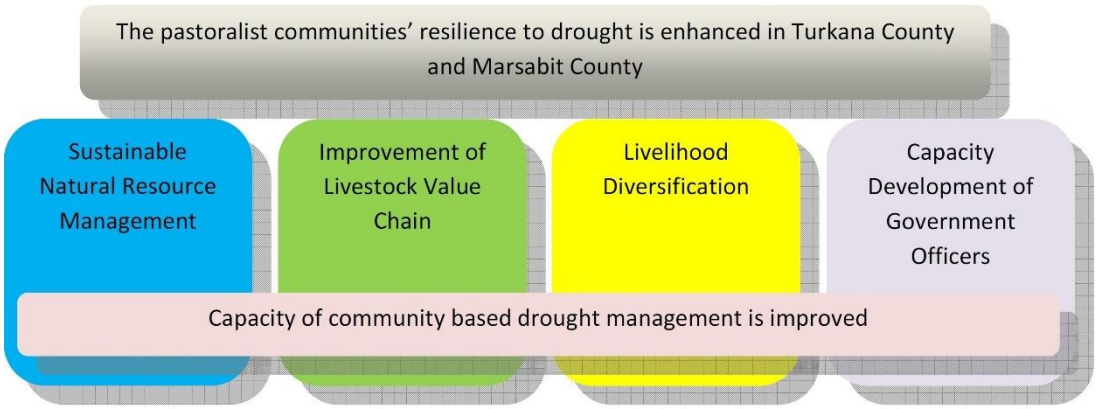


Figure 6: Schematic Image of the Project outputs (GOVERNMENT OF KENYA (ed.) 2015b, p. 56).

In order to achieve the different, yet interconnected outputs, many sub-projects in form of pilot trials were established. These sub-projects put focus on a better natural resource management, an improvement of the livestock value chain and livelihood diversification as well as peace-building processes. Located in a semi-desert-zone, both counties of the project cover more than 20% of Kenya's total surface, however they just accommodate roughly 1.2 million inhabitants due to limited land use options, poor infrastructure development and hardly any viable economic goods. Therefore, people depend on extensive pastoralism using herds of cattle, camels, sheep and goats. Water scarcity is the most critical natural threat that pastoralists are facing.

In Northern Kenya, a year can be divided in four seasons, namely two rainy and two dry seasons. Generally, the long rainy season starts in March and ends in May, followed by a long dry season from June to November. Then, a short rain season starts between November and January and finally there is a short dry season between January and March. Droughts in the region appear because of

missing rain in the rainy seasons, leading to successive dry periods that may last for up to a year or even longer. Inhabitants do not know when rainfall occurs, therefore being unaware of predicting a droughts length. Additionally, they have hardly any preparatory measures in place and at the time they realise a drought is happening the situation has often already reached a point of no return. Pastoralists move their livestock from one grazing area to another as soon as the given water sources are exhausted. As long as there is another grazing area available, the situation is manageable but when the last area is used sufficiently, livestock starts to die.

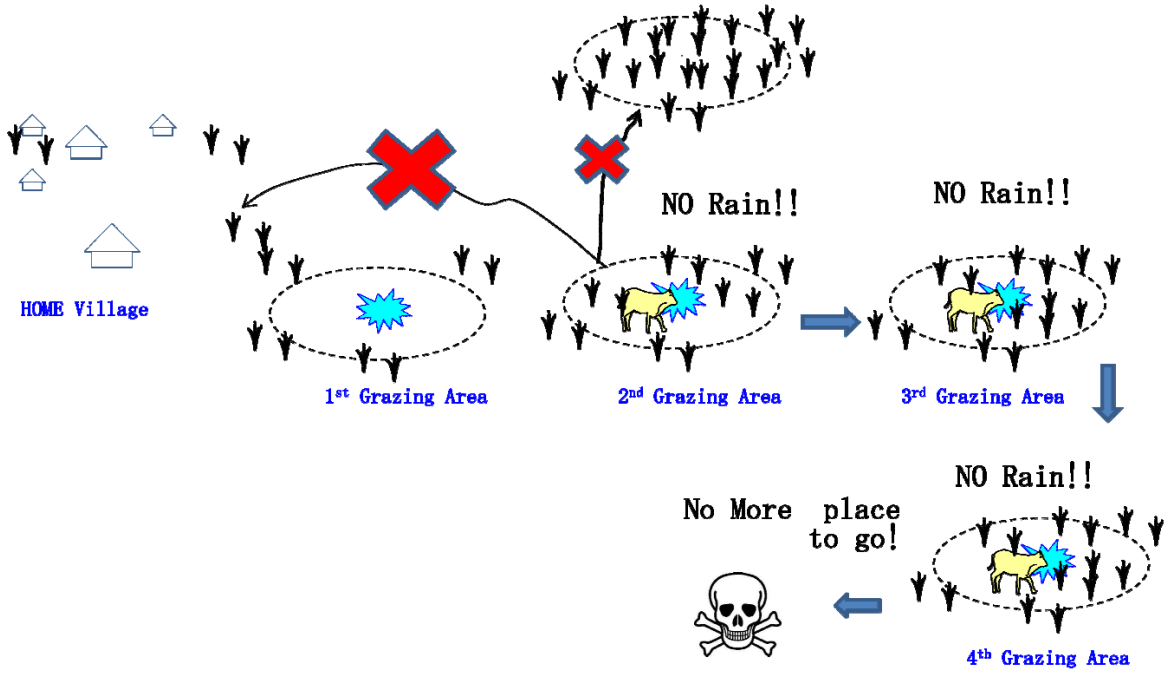


Figure 7: Image of migration of pastoralists during droughts (GOVERNMENT OF KENYA (ed.) 2015b, p. 88).

The project used four approaches to tackle harms that droughts can cause and improve drought resilience of pastoralists. First of all, the situation of pastoralists should be improved during normal rain and dry seasons (base-up), secondly, the impact of droughts should be minimised (mitigation). Thirdly, the capacity to recover quickly (bounce back) should be increased and, lastly, development interactions should move towards a self-sustainable society (transformation).
As shown in the image below, the basic idea of the resilience framework is to reduce the negative impacts of droughts on the state of living as well as measures to improve it generally. The blue line highlights that, under normal circumstances, people find themselves in a critical situation when a severe drought occurs which significantly and above all in the long term affects their state of living. By implementing the named approaches, the blue line is raised towards the red line. In doing so, the state of living is improved before, during and after a drought period in direct comparison. This is the projects basic concept of resilience building.

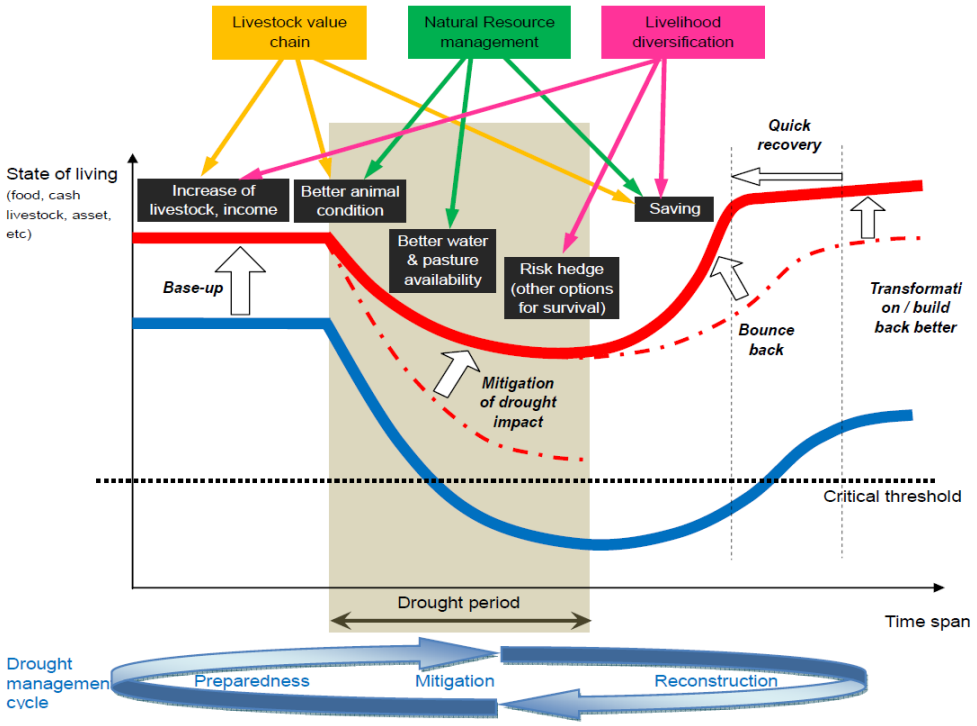


Figure 8: Conceptual Framework of Drought Resilience (GOVERNMENT OF KENYA (ed.) 2015b, p. 89).

The main assumption behind strengthening the living conditions of pastoralists in normal times is that increasing wealth before a drought makes it easier to cope with the situation during a drought. For this purpose, base-up activities lay focus on making the livestock of pastoralists bigger and more resistant and economic activities generally more diverse. As a result, livestock shall not significantly be reduced during a drought and pastoralists can compensate livestock losses with other financial assets. Effective breeding mechanisms, an improvement in local livestock markets, the development of new water sources or new sectors of the economy are specified targets in the project in this respect. Whilst a drought lasts, some mitigation measures can be put in place so that droughts do not lead to a critical situation. Most of these measures, however, should already be planned or implemented during normal periods. In addition to the examples presented above, more healthy animals in a livestock, a better management of pastureland, an available supply of resources such as hay or cereal or a collective support system can help to minimise negative effects during droughts.

After a drought has occurred the project attempts to increase the communities' capacity so far that the recovery time from the end of a drought to pre-drought state is shortened considerably. For pastoralists to 'bounce back' effectively, common interventions are the usage of financial, livestock and water savings to increase herds and natural resource management. Lastly, the project intends to not only recover to pre-drought status, but to improve living conditions even further. For transformative change to happen, the building of community capacity is of importance. This means that locals should be empowered to develop their own community in terms of natural resource management or livelihood diversification and, where appropriable, to change social structures. However, this is a challenging task since pastoralists have a different understanding of community or society. They rather live independently and are bound by geographical areas instead of agriculture land, making community resilience processes difficult.

Putting the resilience concept into practice, the project implemented 24 sub-projects in both counties, based on knowledge and experiences of locals. Via so-called community managed disaster

risk reduction (CMDRR) workshops with the intention to engage various locals in evaluating disaster risks as well as creating and implementing disaster reduction plans, Community Action Plans (CAP) were prepared for each community. These CAPs earmark drought resilience activities for each community specifically, depending on social, natural, economic and technological factors. At the same time, a Drought Management Committee (DMC) was established, functioning as some sort of umbrella committee with the objective to increase community capacity of drought resilience. Therefore, the DMC has offered trainings on how communities and individuals should behave before, during and after droughts. Although it is difficult to measure the exact community capacity improvements solely on this project, according to the project operators, community capacity has improved with a growing understanding of risks and solutions, a better mobilisation of resources and greater awareness of, knowledge of and practical skills against droughts. The main objective of the committee is to gradually reduce the volume of external support and to contribute to the development of a society that is self-sufficient and not dependent from development aid and financial flows alone. In order to make sure that the DMC will still be there once ECoRAD expires, its processes, roles and functions shall be taken over by the local government and local communities. It is also worth noting that specific training workshops and seminars for officers and other government officials were held to increase their individual capacity against problems associated with droughts. In this context, their knowledge about ethnic group tendencies, community based drought management as well as new, resilience-effective technologies and methodologies was enhanced.

As mentioned before, the project consisted of various sub-projects. Natural Resource Management (NRM) sub-projects, in that regard, were developed in order to conserve and use water more efficiently. The intention was to establish new water sources through boreholes or water pans, strengthen already existing water facilities by improving pumping capacity or protecting water from contamination, and enhance operation and maintenance activities through a better rangeland management system or upkeep services. A total of 20 new boreholes were drilled in dry grazing areas, whose maintenance is largely assured and which are intended to benefit between 1,000 and 1,500 households. At the same time, water pans were provided in pasture-rich areas close to settlements so livestock can stay there for a longer period during dry season and already existing water pans were rehabilitated through desilting and cleaning measures. Moreover, a water pipeline was constructed, including related facilities such as storage tanks that allow pastoralists to feed their livestock more efficiently and expand their grazing areas. Further, a rock catchment system was established as an excavated reservoir with increasing water storage capacity. Lastly, a solar power system was put in place that makes it possible to pump water without fuel or generators. This shall reduce dependence from fossil fuels and cut costs. Even though all these sub-projects were implemented locally and independently, their cumulative impact is perceived to have led to progress towards a more sustainable and independent NRM in both counties. The project has focused on shifting people's minds towards a more self-oriented management of resources. However, interventions on a longer time scale are necessary in order to enable pastoralists to take responsibility for NRM on their own and to maintain project results in the long term. Most of the mentioned projects aim to enhance drought resilience by strengthening mitigation and recovery measures.

Next to these sub-projects, a water potential study was carried out in Turkana County including maps for ground and surface water development. This study could function as a suggestion tool for a government-strategic water development plan. It highlights that ground water potential is high

but unevenly distributed and current boreholes just utilise 12% of the available sustainable yield. Quality of ground water is additionally not always the same and it is thus recommended to not drill deeper than 100m when constructing a borehole. The study further recommends 50 identified potential borehole sites. Simultaneously, water potential of the surface is also high in some areas, however, this water source is not always reliable due to changes in annual rainfall.

Next, improving the livestock value chain is also considered important in the context of drought resilience. Regarding this, the project created a heifer exchange programme to help pastoralists to swap old, vulnerable heifers with new, more robust and fertile ones. Additionally, new feedlots, new livestock market facilities and new road improvements have been put in place, extending and improving the livestock value chain in both counties. Drought resilience shall be strengthened as these sub-projects are intended to result in and lead to comparatively younger animals with higher fertility and lower mortality rates in the pastoralists' livestock. In addition, livestock markets were extended, for instance by creating a new market for cattle and camels, an extension of market opening hours or the invitation of new traders from other communities. Trainings for traders, market members and government officials were provided with special focus on operationalisation and maintenance measures. Just like NRM projects, livestock value chain projects mostly intend to boost mitigation and recovery measures against droughts.

Livelihood diversification sub-projects, in turn, focused on reducing the dependence of pastoralists on their livestock by promoting new economic assets. New livelihood measures differ depending on the specific socioeconomic condition and, among other things, include the provision of new livestock assets (new animals), business trainings and skills, new technical skills for fishery, salt mining, agriculture and dry meat as well as a better understanding of saving mechanisms. New livestock assets have led to the utilisation of chicken and goats by the pastoralists, thus enhancing the diversity of their livestock. Other major financial opportunities are in the salt business, the professionalised trade of livestock and the emergence of retail businesses with focus on marketing, finance and business negotiations. Minor economic possibilities exist in the resin and honey business, fisheries and small-scale agriculture. The ability to use techniques to dry meat and thus extend its shelf life, in turn, enables livestock farmers to save food for periods of drought. The respective sub-projects have contributed to livelihoods that are more diverse. Especially women have enhanced potential to benefit, since they are specifically empowered, for example through the handling of their own retail shops or chicken rearing. The sub-projects have put focus on increasing drought resilience via base-up, mitigation and recovery measures. Furthermore, the establishment of salt businesses, livestock trade and retail shops are seen to have potential to transform societies in both countries positively in the long term.

Because droughts in Northern Kenya are always associated with conflicts between different communities and ethnic groups, peace-building programmes were also carried out to mitigate conflict potential. Particularly new water sources bear the risk of tribal conflicts. Various peace-building measures have therefore been implemented, including inter-communal meetings, trainings for police and tribal leaders, a peace marathon and an inter-communal children's camp.

To enhance resilience in Northern Kenya in the long run, the project took a 'pilot trial method' with the intention of verifying the effectiveness of pilot projects which, then again, can be disseminated by other government agencies or international institutions. In this regard, a number of sub-projects have proven themselves worthy of being applicable by others. Many sub-projects put focus on capacity building through economic development, management of natural resources and

networking processes. The social infrastructure of communities in both counties, such as education or health, however, is hardly taken into account.
In conclusion, ECoRAD has helped to implement many sub-projects that are considered successful and useful. Improved NRM as well as economic robustness and diversion in conjunction with peace-building measurements is expected to contribute to drought resilience. Accordingly, capacity building seminars and workshops were provided to increase the understanding of the importance of drought resilience for local people. If maintenance for many sub-projects is secured and a functioning DMC in place, long-term drought resilience shall be ensured. Other development agencies, in turn, can build on the knowledge of the project and hence participate in drought resilience programmes more easily. For this purpose, the project has developed a sophisticated guideline with major recommendations for drought resilience.
Overall, the project's main objective of improving communities' drought resilience of pastoralists in Turkana County and Marsabit County was very ambitious due to the relatively short implementation period of only about three years. Moreover, other factors such as health, education, good governance or infrastructure development play an important role in achieving drought resilience. As these factors have hardly played a role in the project, follow-up projects are perceived to be essential. According to the final project report, the project and its sub-projects have produced revealing results and contributed to strengthening resilience. However, more long-term intervention is still required and necessary to end drought disasters permanently. ECoRAD must also first prove its practical suitability, as there has been no drought during the project period. It is expected that mitigation, recovery and transformation approaches will function effectively, but this has not yet been evaluated (GOVERNMENT OF KENYA 2015b,c,d,e,f,g,h).

4.2 Resilience against flooding

4.2.1 Background – flooding in Tanzania

Tanzania is the country in East Africa most affected by flooding. Future floods are expected to cost thousands of lives and destroy billions of dollars of financial assets. As Tanzania's economy is very sensitive to climate change, it has lost about one percent of its GDP annually due to climatic hazards and could even lose two to three percent by 2030, with flooding being the most costly threat (Erman et al. 2019). In this respect, climate change may not only increase the likelihood of higher temperatures and longer and more frequent heat waves, but also lead to more unpredictable and concentrated rainfall and flooding, exacerbated by deforestation and soil erosion processes. Severe floods in April and May 2018 alone had a huge impact on Tanzania's society with damage to critical infrastructure, displacement and fatalities (WORLD BANK (ed.) 2019). In recent decades, floods have generally caused the highest number of hazard-related fatalities and therefore pose a major challenge for development work. Common problems associated with floods include health problems and disease, damaged personal and community property, reduced mobility, the destruction of biodiversity and vegetation or contaminated drinking water (WORLD BANK 2011, HAMBATI 2013, MBURA 2014).
Cities in Tanzania are particularly ill prepared to deal with climate-related disasters and floods. Unprecedented population growth in combination with spatial expansion and accompanying urbanisation processes has resulted in the majority of citizens living in unplanned settlements in hazard-prone regions (HAMBATI 2013). Particularly in *Dar es Salaam*, by far the largest city in

Tanzania, many people live in low-elevation zones where the risk of flooding is high (KEBEDE and NICHOLLS 2011). These areas are characterised by a lack of adequate fresh water supply services, sanitation, waste disposal or adequate drainage systems, which further increases the negative effects of flooding. In addition, floods have a negative impact on critical infrastructure such as roads or energy and can even lead to the closure of schools and damage to health facilities. Given the regular occurrence of severe flooding in cities and the lack of public support in informal settlements, households must take responsibility for the measures against floods themselves. Prevention and coping strategies include the usage of sandbags, tree logs and protection walls, raised doorsteps or boiling and chemical treatment of polluted water (SAKIJE et al. 2012, ERMAN et al. 2019).

Poorer households are disproportionately affected by floods. Compared to their total financial assets, they lose most of their personal belongings. They are also particularly affected by long-term financial concerns due to flooding, such as house repair costs, health problems or unemployment. Therefore, they are not only afraid of losing money as a direct result of the floods, but also of the stress of losing income in the future. Children, women and elderly people are especially threatened. Children are absent from school for days on end, women have to stay at home to look after them and older people are vulnerable to diseases. In addition, floods put parents under stress, as they have to make an effort to keep their children away from potentially polluted water (ERMAN et al. 2019, WORLD BANK (ed.) 2018, 2019).

Disasters are not isolated events. As severe floods occur regularly or even annually in some places, some people still recover from floods when the next one hits them. This puts them in a constant state of recovery with a cumulative negative impact on poverty. In the future, population growth and increasing urban population density will expose even more people and their assets to flood disasters (WORLD BANK (ed.) 2018, 2019).

Unless coordinated action is taken proactively, there is growing concern that more and more people will be permanently affected by floods with serious economic, environmental and social consequences. Poor and vulnerable population groups in cities will be disproportionately exposed. Therefore, there is urgent need to proactively strengthen flood resilience in order to mitigate associated future risks (ibid. 2018, 2019). However, there is currently hardly any effective development programme that aims to strengthen resilience to flooding in Tanzania. The Tanzania Urban Resilience Program (TURP), which will be summarised below, is the first of its kind with the objective to enhance climate- and flood-resilience in cities.

4.2.2 Tanzania Urban Resilience Program

The main objective of TURP is to support Tanzania's national and local governments in increasing resilience to climate and flood risk in cities, thereby promoting shared prosperity and reducing poverty. Established in 2016 and officially launched in May 2017, the project is based on the assumption that future risks can be mitigated by proactive coordinated action. Since climate risks in Tanzania's cities are primarily related to flooding, the project focuses on reducing the impact of urban flooding and associated risks. As a partnership between the World Bank, the Government of Tanzania and the UK Department for International Development, the programme is structured to improve risk identification, planned risk mitigation, coordinated and emergency management activities and sustainable transfer of generated knowledge to academia. TURP intends to provide financial and technical assistance to establish and expand climate risk management practices and environmentally friendly urban investment opportunities. In a wider context, the ongoing project

is in line with national governments' objectives to address growth, environmental and climate change adaptation issues accordingly. At the same time, it is intended to contribute to poverty reduction. Exposure to floods and other hazards disproportionately affects the bottom 40% of the country, with debilitating and cumulative effects on their livelihoods. Resilience measures against heavy rainfall and flooding are designed to reduce the vulnerability of the poor to climate disruptions.

Even though TURP aims to improve climate resilience in all major Tanzanian cities, the project has so far only focused on *Dar es Salaam*. Whilst there are some demands by secondary cities such as Zanzibar City or Mwanza to be incorporated in the project, all funds spent so far have been used exclusively for projects to strengthen resilience in the country's largest city.

Dar es Salaam is at high risk and vulnerable to flood events. According to TURP scientific surveys, up to 40% of the population (two million people) are directly or indirectly affected by flooding and the annual economic burden is over $100 million, costing the city between two and four percent of its GDP. The city is regularly hit by floods that disrupt daily life, damage infrastructure and increase the risk of spreading diseases in the communities. Simultaneously, the city is one of the fastest growing ones in Africa with an annual population growth of around 6.5 percent and expected mega city status before 2030. As prime city in Tanzania, TURP not only boosts resilience to flooding but also helps to reinforce its important economic, social and cultural contribution to the United Republic of Tanzania. The main problems associated with urban flooding are the lack of data and information to assess vulnerability and adaptability. Moreover, urban planning systems are insufficient and outdated, and institutional responsibilities are vague. Finally, there is a significant infrastructure gap in the city due to insufficient water drainage, wastewater treatment and general flood management facilities.

The intended positive impacts of the project, in turn, focus on providing a capacity-building programme and technical assistance to *Dar es Salaam* including technological innovation and the expansion of community-based activities. The aim is to enable the city to invest in resilience building by strengthening emergency management and providing practical key tools and technical knowledge for communities. At the same time, an integrated approach is supposed to transform and rehabilitate previously vulnerable areas into urban centres with improved economic, environmental and social potential.

To achieve these objectives, the programme is based on four pillars, as illustrated in the figure below. The first pillar, risk identification, strengthens the identification and understanding of flood and climate risks related to uncertainty in the local context. Building on the findings of this pillar, the second pillar, risk reduction, proposes planning activities to strengthen the capacity of cities to reduce these risks.

Figure 9: Four pillars of TURP (WORLD BANK (ed.) 2019, p.5).

The third pillar, disaster preparedness and emergency management, involves drawing up emergency plans and setting up operational centres to ensure the best preparedness for specific emergency scenarios. Finally, the fourth pillar, resilience academy, is a scientific programme run by universities in Tanzania and other affiliated institutes providing training, courses and practical experience to support surveying, maintenance, monitoring and analysis activities. The aim is to provide skills and tools for the next generation, thereby contributing to the sustainability of the programme whilst building partnerships between academia and practitioners.

The first pillar focuses on new, innovative methods for collecting and disseminating data on climate and flood risk. Based on the fact that a thorough understanding of these risks is essential in order to implement resilience measures that are actually capable of counteracting them, the first pillar intends to provide access to information on physical and social exposure to flood and climate risks. It is therefore intended to develop visualisation tools and new risk models for environmental and socio-economic data. In this context, the collection of environmental data includes historical disaster events and their effects, meteorological and hydrological phenomena and the geophysical characteristics of the city such as urban vegetation, soil types, river basin profiles as well as land use in a broader perspective. Socioeconomic data, in turn, includes mapping of population distribution as well as social and economic assets such as houses, social services or critical infrastructure. Among other things, activities that were carried out so far included analyses and studies on erosion and soil loss, potential for terrain elevation and sedimentation, drainage and wastewater, monitoring of rivers and flood events as well as the identification of flood-risk areas with a particular focus on financial vulnerabilities and contingent liabilities.

As some activities are still ongoing, not all results are available yet. However, the results show that waste in particular increases the impact of floods, as it regularly clogs the drainage system and makes it difficult for water to smoothly drain off. In addition, river basins in *Dar es Salaam* are characterised by sediment imbalance, with more sediment entering the basins than leaving them. Due to vegetation clearance and urbanisation, erosion and soil loss are expected to continue, leading to more frequent and severe flooding. Results of the assessments under this pillar will serve as a basis for the risk reduction and emergency preparedness measures in pillars two and three. The information, methods and techniques assembled will be shared with students at scientific institutions.

The second pillar is expected to fill gaps in the planning of risk reduction activities in *Dar es Salaam* and to improve community engagement. Risk reduction activities, in this respect, shall focus on reducing the vulnerability of individuals, households and communities to flooding. Whereas pillar one focuses on a better understanding of flood risk itself, pillar two is more about understanding how flood events impact human beings. To this end, two socioeconomic vulnerability studies were carried out, which stressed that poorer households are more likely to be affected by floods and more vulnerable to their effects and that their coping mechanisms are not designed to deal sufficiently with recurrent floods. Moreover, the economic burden is high and many poor people may be permanently trapped in a state of recovery due to recurrent flooding. Plans to increase flood resilience should lay focus on improving political legislation, better land use planning, environmental protection as well improved drainage, sanitation and fresh water systems. Further, to increase recovery capacities of affected people, the studies underline the importance of formal or informal networks. In this respect, savings and loan activities, informal insurance, mutual assistance or collective enterprises enable people and communities to recover more easily from

floods. Currently, TURP focuses specifically on quantifying and advocating the benefits of the identified risk reduction measures.

As these studies were conducted with help of local communities, Community Disaster Risk Reduction Plans (CDRRPs) have also been developed for some of these communities, building on the results from the first pillar and the vulnerability studies. Although few of these plans have been developed so far, this is considered an important milestone within the project and it is planned to deliver more and more of these CDRRPs to city districts in the coming years. In addition, a number of community awareness raising activities took place. In this context, the proper management of solid waste was emphasised in many city districts and a clean-up day was organised, which contributed to waste collection throughout the city.

Under the third pillar, capacities to prepare for and cope with specific short-term emergency scenarios are enhanced. Priorities are to provide necessary equipment, train those responsible in the relevant situations and set up a centralised, coordinated emergency system. In that regard, the intention is to support through various activities the Dar es Salaam Multi-Agency Emergency Response Team (DarMAERT), which acts as the tactical branch of a regional disaster management committee. TURP has conducted training and capacity building courses in emergency response for DarMAERT's core members with the aim of building skills in understanding, planning, practising and executing appropriate responses. It is also planned to set up a new Emergency and Communication Centre to act as a central coordinating point to manage and facilitate communication, planning and actions before, during and after a disaster. As far as flood events are concerned, the aim is to help communities to prepare for floods, mitigate their effects and cope with them, thereby strengthening their resilience.

Lastly, the fourth pillar comprises scientific instruments and models for risk management. Although this was not planned at the beginning of TURP, as the project progressed, awareness grew of the need to integrate science and academics into the project. Therefore, the fourth pillar was established to enable a sustainable knowledge transfer from TURP to academics and vice versa. Four universities and one international institution contribute to the so-called *resilience academy,* which provides students with risk management skills. In this context, students will have access to a centralised database with all social and environmental results of TURP, they can participate in modules on resilience and capacity enhancement and receive training on risk data analysis. Modules include specific knowledge about earth observation, flooding, community mapping and the usage of databases. So far, cooperation has resulted in a climate risk database, eight academic modules and an industrial training programme where students have the opportunity to learn community-mapping skills and tools from companies and other institutions across the city[7]. In the long term, the main objective is to create a digital hub, which is considered essential for the sustainable improvement of flood resilience.

As TURP has not yet been completed, many indicators for strengthening resilience still need to be expanded. The number of communities and government authorities benefiting from TURP is limited, but it is foreseen that capacities will be increased in the coming years. With risk identification and reduction surveys being completed in the near future, community risk reduction plans are intended to be launched and put into practice soon. In addition, preparedness activities and emergency plans will continue to be developed, thereby strengthening the disaster response system of *Dar es Salaam*. If further progress is made in the coming years, the project shall help to strengthen resilience in *Dar es Salaam* and perhaps even in some secondary cities. However, due

[7] Check out https://resilienceacademy.ac.tz/ for more information (last access: 15.12.2020).

to the main problems related to urban floods, actions undertaken so far have focused almost exclusively on a better understanding of flood risk and related preparedness and mitigation objectives. Adaptation and transformation measures do not play an important role, at least in the current situation. However, transformation capacity is to be permanently expanded through the resilience academy, with the intention of preserving knowledge, results and established resilience structures after TURP expires. In addition, long-term effects are to be achieved by providing future generations with skills and instruments related to flood risk.
Associated problems with TURP are its dependencies of various stakeholders. Therefore, if the priorities of governments or development partners shift, the project can be stopped or must be continued with a smaller budget. In particular, the projected depreciation of the pound sterling, the British currency, against the US dollar could lead to budget cuts. National targets, on the other hand, may shift due to changes in government or the trade-off between TURP and other (urban) development projects (WORLD BANK 2017, 2018, 2019, ERMIN et al. 2019).

4.3 Resilience against climate change

4.3.1 Background – climate change in Kenya

Climate in Kenya is changing with rising temperatures and a higher frequency and magnitude of extreme weather events. At the same time, rainfall patterns have also changed, with annual rainfall remaining fairly low in most parts of the country. However, declining rainfall during the rainy seasons has led to longer and more frequent periods of drought, and heavier rainfall has led to an increase in flooding (GOVERNMENT OF KENYA 2013c, 2018). According to high-emission scenarios, the mean annual temperature will increase by a further 0.9 degrees by 2035 and by 2.2 degrees by 2050 if nothing changes (CHRISTENSEN et al. 2013).
Kenya's economy and society is vulnerable to climate change and ranks 13th out of 233 countries directly threatened by extreme weather events (DFID (ed.) 2019). Heat waves, droughts and floods have the greatest impact on society in terms of economic loss, death and displacement. At the same time, climate change can indirectly exacerbate other social and environmental concerns such as poverty, health, cross-border conflicts and migration, as well as desertification, glacier melt or sea-level rise. As Kenya's economy is highly dependent on natural resources, it is already suffering the effects of climate change resulting in an annual loss of at least 2.5% of GDP. Statistically, peaks in economic damage occur every seven years due to floods and every five years due to droughts, with estimated costs of around 5.5% of GDP and 8% respectively (GOVERNMENT KENYA (ed.) 2013c, 2017, 2018). Economic sectors particularly affected by climate change are agriculture and livestock, tourism, energy and fisheries (HEINRICH BÖLL STIFTUNG (ed.) 2010). Climate change is a major challenge for Kenya to meet its development goals and become a middle-income country by 2030. Based on the assumption that climate change cannot be reversed, at least in the short term, development projects focus has been put on how to mitigate and adapt to its impacts in a sustainable way. In this context, it is considered that social, environmental and economic damage can be reduced if preparatory and adaptation measures against negative effects of climate change are maximised and refined. The earlier these measures are taken, the better communities can cope with climate change-related disasters. The costs of and vulnerability to disasters can be reduced, response mechanisms strengthened and greenhouse gas emissions significantly reduced (GOVERNMENT OF KENYA (ed.) 2013, 2017, 2018, DFID (ed.) 2019).

As highlighted in chapter three, strengthening resilience is seen as an option to prepare, mitigate and adapt systems against climate change in Kenya. However, since the terms resilience or climate resilience are relatively vague, it is not immediately clear what is meant by this in terms of practicality. Therefore, below is a detailed description of the project Strengthening Adaptation and Resilience to Climate Change in Kenya Plus to demonstrate how resilience shall be strengthened through a concrete development project. It is presented how preparation, mitigation and adaptation to climate change-related disasters shall be improved and how people may actually benefit from it.

4.3.2 Strengthening Adaptation and Resilience to Climate Change in Kenya Plus

StARCK+ is a five-year DFID programme from 2013 to 2018 that has aimed to support the Kenyan government to respond adequately to climate change risks. According to the UK Government, Kenya is in a unique position for a shift towards a more climate-resilient society, for example through increased private and public sector investment in low-carbon, adaptation and resilient products and assets. In order to make this change possible, StARCK+ therefore wanted to make its contribution by:

1. **Catalysing private sector innovation and investment towards a climate-resilience society**
2. **Supporting governance interventions towards a climate-resilience society**
3. **Strengthening Kenya's civil society engagement in climate change advocacy**

Against the background of the ongoing implementation of devolution and the 2017 elections, it has implemented a large number and complex set of measures to achieve its goal of improving response and adaptation to climate change. According to the final project completion review, the main outcomes of the project are that more than 100,000 tonnes of carbon dioxide equivalent have been reduced or avoided, more than 2.5 million people have been enabled to cope to some extent with climate events and more than 430,000 people have gained access to clean energy.

Table 3: Overall assessment of whether the targeted outcomes have been achieved (DFID (ed.) 2019, p. 12f.).

Outcome indicator	Target	Summary of progress
1.) Tonnes of CO_2 equivalent reduced or avoided	226,000 tonnes	➢ Score: **C** Substantially did not meet expectation ➢ Achieved: 110,817 tonnes (Source: last annual review)
2.) Increase in the number of **people able to cope with the effects of climate change** (climate resilience)	1,328,000 people (at least half female)	➢ Score: **A++** Substantially exceeded expectation ➢ Achieved: 2,653,782 (Source: end of programme report – January 2019)
3.) Increase in the number of **people with improved access to clean energy**	17,600 people	➢ Score: **A++** Substantially exceeded expectation ➢ Achieved: 435,874 (Source: end of programme report – January 2019)

As highlighted in table 3, it has not met its own expectations in terms of reducing greenhouse gas emissions, but has exceeded its self-imposed targets in terms of number of people able to cope with the effects of climate change and number of people with increased access to clean energy. Overall, DFID considers the project to be good value for money in terms of its contribution to the reduction of estimated living costs and its other economic and social benefits.

Most of the greenhouse gas emissions reduction has been made possible through investment in the private sector, where in particular new agricultural initiatives, climate-friendly cooking solutions, innovations and energy-saving industries have contributed to this task. Coping and adaptation abilities of people, households and communities, in turn, have been mainly influenced by vulnerability-oriented interventions through which better preparation and adaptation against climate change disasters has been enabled. In this regard, measures affected people directly and indirectly. Among other things, measures included the production of sorghum with high diversity, short-cycle crops, a more drought-tolerant silk production, better water and natural resource management as well as enhanced preparation due to climate information services. In addition, through the project, livestock enhancements, governance reforms, technical assistance and new financial assets were provided, allowing people to better cope with the effects of climate disasters. Access to clean energies, then again, has been enhanced by supporting and installing new technologies such as solar lights and cookstoves that rely on sustainable resources. In this respect, poor rural populations in particular were supported and demand for clean energy was much higher than originally expected, which is why the project was able to reach a larger number of people.

As mentioned above, the outcome indicators of StARCK+ were made possible by interventions in the private and public sectors and by strengthening civil society engagement. To increase private sector investment and innovation, StARCK+ implemented pilot programmes to create new and strengthen existing climate-friendly businesses, products and services, with a particular focus on marginalised groups and women. Using a range of financial instruments and funds, the project was expected to lead to a rapid expansion of innovation and investment in low-carbon and adaptive technologies, services and assets. These instruments and funds focused, among other things, on new climate-resilient agricultural initiatives, strengthening industries towards climate protection, clean cooking solutions and new business models for renewable energies. The project, thus, filled a gap that had not been filled recently by other financial services or development programmes in Kenya. In total, 29 new companies were founded within the project with the aim of taking advantage of the opportunities offered by climate resilience and addressing adaptation processes through new products, climate technologies, clean energy or financial services. Although the success of these companies will only become apparent in the future, there are some indications that the majority of these companies are profitable due to significant market demand, so that they are likely to be durable. These new companies and their respective supply chains have created almost 700 new jobs in the energy, agriculture, cooking and environment sectors. StARCK+ has supported and financed new climate-resilient business projects and economic growth.

In addition to the private sector, StARCK+ intended to strengthen the public sector through governance reforms and civil society advocacy. With regard to the first mentioned, it was achieved that adaptation funds were made available in some counties and that climate resilience was anchored in respective budgets. More generally, local communities have been empowered to improve their resilience to climate change by mainstreaming climate resilience into county budgets and development plans. This provides a predictable source of decentralised climate finance so that climate actions prioritised by local communities can be implemented. It also reduces dependency

on external funding. New available resources have been used, for example, to train government officials on how to implement climate resilience measures and to develop climate information services. In addition, participatory community management has been expanded to enable locals to better voice their concerns and contribute to local climate resilience strategies. In so doing, community capacities were enhanced, leading particularly to a better management of natural resources as well as an increased awareness of the necessity of social and economic climate investment. However, whilst the mainstreaming of climate resilience into budgets sounds promising, the transition of budgets into decision-making processes has yet to be tested under more difficult conditions where tough trade-offs must be made.

At national level, the project helped to ensure the timely adoption of the Common Country Assessment, which is a guide that articulates context, opportunities and challenges that Kenya faces to achieve sustainable development (OLVER and MORARA 2018). In addition, StARCK+ contributed to the operationalisation of the National Climate Change Adaptation Plan of Kenya and related policies, providing a legal framework for action against climate change at national and a template for action at county level.

In terms of civil society engagement, the project improved community capacity not only to raise awareness of climate change resilience measures, but also to hold government officials accountable and better articulate the demand for private sector investment. With 20 new or modified policy regulation measures adopted or influenced at national and county level, the project contributed to more climate resilient legislation and regulation through advocacy. In addition, numerous StARCK+ civil society programmes have reached almost half a million people. These programmes helped the various communities, for example through new solar energy systems, the provision of reliable water supply, new options for agriculture and livestock or carbon sequestration sub-projects. To make advocacy interventions long-lasting and sustainable, learning conferences, studies and papers were conducted, focusing on climate resilience through climate-friendly agriculture, financial instruments, private sector engagement, technical assistance or clean energies.

In summary, the project has taken a holistic approach to climate change resilience through its interventions in private, public and civil society sectors. It should enhance preparedness, protection and adaptation measures, such as community-based climate information services, more climate-resilient agriculture and livestock management, or the successful strengthening of markets through new businesses offering climate change adaptation tools. According to the final project completion review, StARCK+ has also shown some signs of transformational impact, as many measures have fundamentally changed livelihoods instead of just adapting them to changing climatic conditions. Concerning the private sector, transformation processes shall occur because of the reconstruction of some parts of the agricultural sector, which effects many households and communities in the long term. At the same time, the newly established climate funds are expected to transform the business sector into a more climate resilient one that takes into account both climate change adaptation measures and clean energy sources. Moreover, changes in local governance by adjusting respective development plans and raising awareness of locals may also have a transformational impact. By changing attitudes of politicians and the population alike, there is hope for a better understanding of the urgency of adapting to a more climate resilient society. Overall, capacity building activities took place mainly in local communities, with the intention of creating a more climate-resilient society through private sector innovation and investment, appropriate governance interventions and improved civil society engagement (DFID (ed.) 2016b, 2107, 2018, 2019).

4.4 Resilience programmes by international institutions

4.4.1 Background – FAO, resilience and the strengthening of agriculture in East Africa

In addition to development programmes carried out by foreign development agencies and NGOs, there are also specific projects to strengthen resilience, which are implemented under the main responsibility of international institutions. Here, teams of international institutions act as leading project managers and development workers within their own projects.

Against this background, below is a presentation of the United Republic of Tanzania Resilience Strategy of the FAO. It is examined how FAO intends to contribute to reducing development problems through this project (FAO (ed.) 2019). FAO's main objective is to ensure food security and improve living conditions, inter alia by improving production and distribution of food, strengthening rural populations, raising food standards and promoting economic growth. In this respect, the organisation's main instrument is the provision of technical assistance to less developed regions to increase food production (FAO (ed.) 2018b). FAO stresses that hunger and poverty cannot be ended without resilient livelihoods and that emergency preparedness against natural hazards and crises is essential. With a special interest in agriculture and food security, FAO aims to prepare the most vulnerable people for crises and to increase resilience of households, communities and institutions. Resilient agricultural livelihoods are key to feeding present and future generations, which is why they are seen as the greatest safeguard for rural populations against hunger and malnutrition (FAO (ed.) 2014, 2017b, 2018, 2019).

With regard to East Africa and Tanzania, FAO has published two other interesting development programmes related to resilience and the corresponding programme for Tanzania. The organisation has put on the way the Country Programming Framework for United Republic of Tanzania and the East Africa Resilience Strategy. The first programme is broadly aimed at strengthening agriculture and food production in Tanzania through better planning and investment, increased food security, improved market access and enhanced resilience to natural and social threats such as climate change or unsustainable management of natural resources. The United Republic of Tanzania Resilience Strategy aims to contribute to this programme by strengthening the resilience of agricultural livelihoods, thereby improving food security and nutrition. As regards the East Africa Resilience Strategy, the intention is to strengthen resilience throughout the region by creating local and regional socioeconomic stability. By addressing simultaneously various interrelated natural, social and economic shocks affecting agriculture, FAO will work to improve the capacity of communities to prevent disasters or at least reduce their impact in East Africa. The United Republic of Tanzania Resilience Strategy aims to ensure food security and socioeconomic stability in the country, thereby contributing to the achievement and maintenance of overall stability in East Africa (FAO (ed.) 2017, 2018, 2019).

4.4.2 FAO’s The United Republic of Tanzania Resilience Strategy

Tanzania's agricultural sector employs the majority of the rural population and generates about 30% of GDP. The sector is vulnerable, however, to many natural, social and economic threats such as droughts, floods, disease, food price fluctuations, resource conflicts, poor market structures or insufficient storage facilities. As these different threats to the agricultural sector can occur

simultaneously and periodically, the resulting exposure can affect wellbeing both in the short and in the long term. Food insecurity and malnutrition remain major challenges for Tanzania, particularly for the most vulnerable.

FAO has developed a resilience strategy for Tanzania and its agricultural sector. The main objective of the strategy is to strengthen resilience of agriculture-based households and communities to enhance food availability and secure adequate nutrition. To achieve this, the intention is to reduce the vulnerability of the four main types of crises affecting agriculture, namely natural hazards, food chain crises, socioeconomic crises as well as violence and conflict. By combining prevention, reduction and adaptation measures, the aim is to tackle the natural and social causes of food insecurity and malnutrition. Besides public institutions that support the development of climate-resilient livelihoods, the implementation of this strategy intends to particularly support the most vulnerable rural communities. These include small farmers, female-headed households and people living in regions with a high potential for conflict. The strategy is structured as a multi-hazard, multi-sector and multi-stakeholder approach, thus addressing the aforementioned crises simultaneously on several levels. It is foreseen to implement the strategy in six different geographical areas between 2019-2022, covering most of Tanzania. The following image illustrates this.

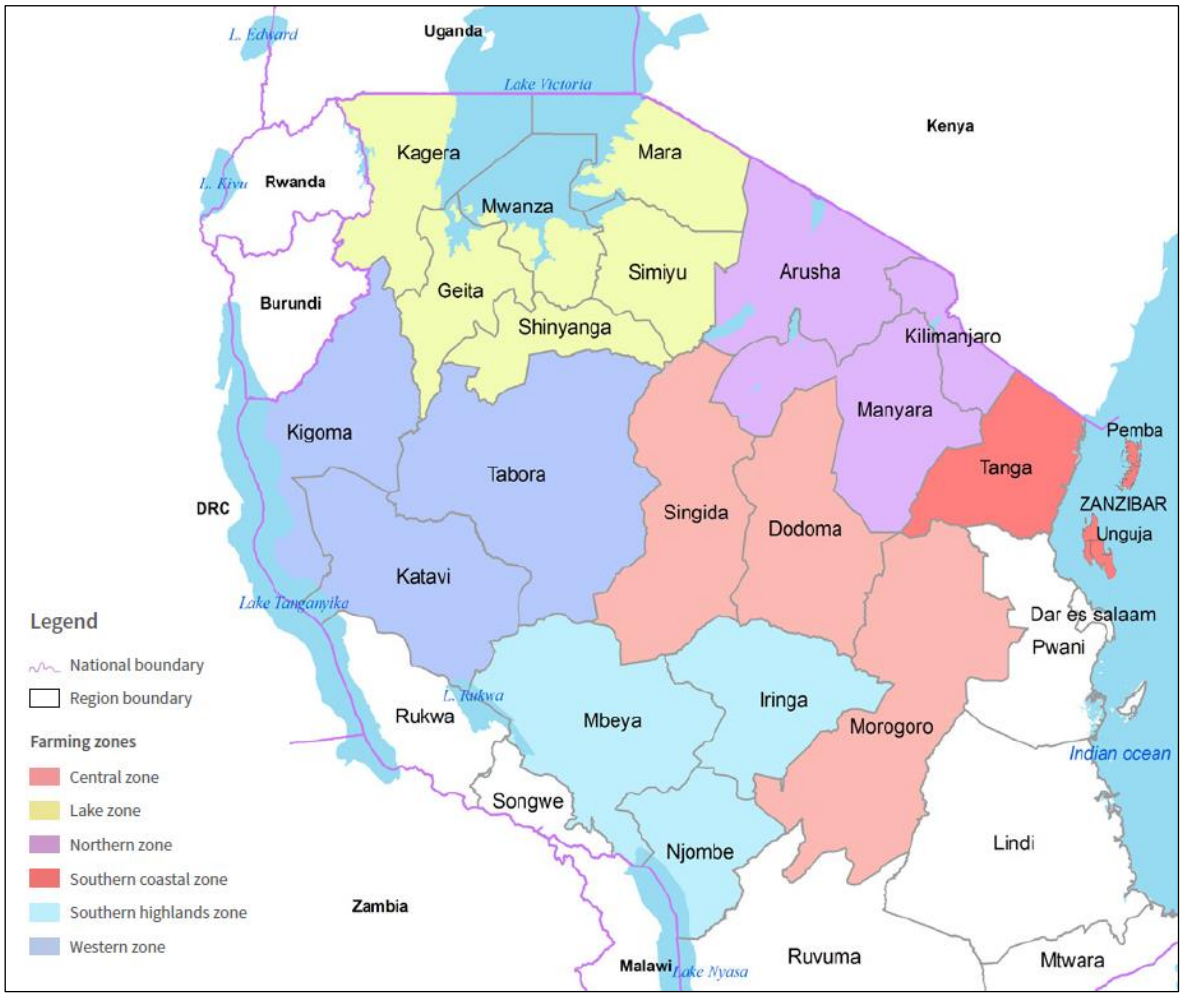


Figure 10: Location of the six geographical target areas of the resilience strategy FAO (ed.) 2019, p. 10).

In order to achieve its main objective, the strategy foresees the implementation of four different outputs, which in turn are characterised by different sub-outputs. The main objectives of the strategy are as follows:

1. **evidence-based and risk-informed policies, strategies and plans promoting resilience of livelihoods to threats and crises supported**
2. **early warning and risk-informed systems for potential, known and emerging threats established and strengthened**
3. **protection, prevention and mitigation of impacts of crisis and disaster risks on communities and households supported and strengthened**
4. **improved preparedness for and response to crises and disasters through effective coordination**

First, since local governments have limited capacity to effectively assist local farmers in adopting resilience practices, FAO seeks to promote risk-conscious policies and to empower local governments and institutions to implement national resilience strategies on the ground through concrete actions. By expanding and reviewing existing policy plans for agriculture, food security and nutrition, the aim is to better reflect resilience to disaster risks in these plans. Furthermore, the intention is to train local government authorities to better formulate, implement and enforce resilience strategies for food and agriculture and, in doing so, promote a better coordination between key public and private stakeholders. In that regard, it is foreseen to take actions that promote, for instance, sustainable land and water use, integrated food systems, natural resource management, easier access to finances whilst also reducing the potential for conflict. With enhanced local government capacities, provided resource shall also indirectly lead to a better food utilisation at household level (e.g. through local food education) and strengthened basic service facilities, including seed testing laboratories and advisory services.

The second output focuses on early warning, as risk information systems in Tanzania are currently either completely absent or unable to provide sufficient and early information. To better monitor and collect potential risks and share information with local populations, FAO's resilience strategy includes the establishment of early warning information centres to enhance preparedness and response mechanics that are intended to prevent and mitigate disaster impacts. Against this backdrop, food security and nutrition analyses are planned to be conducted. In this context, statistics on food security, nutrition and the damage potential of disasters should be collected by gathering meteorological, agricultural and food market data. Capacities of the Tanzania Meteorological Agency should be enhanced. The information collected and shared will include warnings on weather, animal and plant diseases, floods and earthquakes, thereby raising awareness, especially among small farmers. In addition, advisory services are provided for improved nutrition-sensitive food production, diversification and post-harvest management.

Building on enhanced risk information policies and early warning systems, FAO's resilience strategy further aims to introduce responsive practices and new technologies to households and communities. The objective, here, is to strengthen livelihoods of farmers, pastoralists and fishers through the communication of new sustainable, affordable and risk-conscious practices. In that regard, it is foreseen to promote better natural resource management practises and measures with the intention of diversifying livelihood activities so that impacts of agricultural disasters can be mitigated. By providing training on new technologies and disseminating information to build resilience among community members, the aim is to anchor shock-responsive interventions in

society. Participatory trainings will be provided to communities to educate farmers on how they can better process and add value to their agricultural products. In this regard, the strategy foresees the creation of farmers', fishers' and pastoralists' associations, organisations or cooperatives to enable local people to better voice their concerns.

The fourth output, lastly, aims at improving preparedness and response to the consequences of disasters. The intention is to strengthen capacities of communities so that they are more effectively able to recover in time from disasters and to properly manage and adapt to a disaster's aftermath. Hence, resources are planned to be used for the implementation of participatory processes to encourage various stakeholders (e.g. research institutions, NGO or the private sector) to work together on solutions for better disaster response, livelihood diversification and agricultural emergency responses. Furthermore, the existing support infrastructure shall be enhanced and so-called food storage centres be established.

Finally, the United Republic of Tanzania Resilience Strategy is a strategy to enhance resilience against food, nutritional and agriculture disasters. With its focus on rural Tanzania, it intends to improve food security and agriculture production. The strategy is rather general and its objectives resolve around strengthening resilience locally and proactively so that agricultural-based households do not suffer from malnutrition and economic shortages when a disaster occurs. Focus is put on preparation, mitigation and response measures. Funds will also be made available to improve understanding of disasters and their impact on agriculture and rural livelihoods (FAO (ed.) 2019).

5 Resilience projects of NGOs in Kenya

Resilience concepts have found their way into practical development projects and are being implemented by various NGOs in Kenya and Tanzania as an instrument for strengthening capacities against disruptions and shocks. NGOs are currently able to receive large amounts of funding for resilience programming (FRANKENBERGER et al. 2014b).

As outlined in chapter two, resilience building relies on a long-term approach to improve absorptive, adaptive and transformative capacities of households, communities or other systems (BÉNÉ et al. 2012). Resilience programmes run by NGOs therefore aim to improve these capacities. However, they are generally better suited to enhance absorptive and adaptive capacities at local level. In this respect, they promote and strengthen, among other things, adaptation to climate change, conflict sensitivity, agriculture and food security, market access, improvement of infrastructure, local governance, ecosystem restoration or education and knowledge transfer (PFR (ed.) 2015). The intention is to reduce vulnerability to future shocks and stresses by better preparing and adapting. Here, NGOs usually take part in participatory processes with communities in order to jointly gather knowledge, disclose problems and find appropriate solutions to improve the relevant capacities. NGOs, however, are not viewed to best be able to increase transformative capacities. At national level, they are generally not well suited to influence specific transformation processes for the respective systems. At local level, in turn, they can at least partially initiate or influence transformational change, especially when local governments do not have the resources to implement (national) resilience strategies at local level on their own.

It is quite common for a resilience project to contain many sub-projects and sub-measures, all of which are being implemented more or less simultaneously in the project area. These projects and measures focus on specific, context-related issues and, in combination, lead to various capacity improvements. Resilience projects of NGOs hence focus on a variety of issues and are not compulsorily limited to a specific thematic theme. Because implementation processes differ from one another and the resources required for them are not always available to each individual NGO, some NGOs have now entered into strategic partnerships with other NGOs, donors or development agencies. Since it is almost impossible for a single NGO to carry out all the extensive, cross-sectoral and multi-scale activities on its own, strengthening resilience usually requires a joint approach of analysis, planning and programming. The intention behind strategic partnerships is therefore that resilience approaches can best be integrated holistically when practitioners from different development sectors work together (FRANKENBERGER et al. 2014b, MITCHELL 2013).

Resilience strategies are based on the questions 'resilience for whom?' (e.g. household, community, youth) and 'resilience to what?' (e.g. flood, food insecurity, social conflicts) and are therefore always based on context-specific conditions. NGOs usually implement resilience concepts to strengthen shock-prone households and communities, but there are also NGO-led projects that pursue other objectives and just integrate some resilience-building measures as sub-processes to support the core objectives of the respective projects (FRANKENBERGER et al. 2014b, BOUSQUET et al. 2016). For instance, in one of its main thematic areas, disaster management, the NGO World Vision focuses on resilience as a contributing factor to save threatened livelihoods (World Vision (ed.) 2020d).

In the following, three NGOs and their resilience projects in Kenya are presented. In addition to their basic understanding of the concept and how they intend to use it to improve living conditions, the following sub-chapters explain in which thematic areas the NGOs and their resilience concepts

are applied, which people in which geographical areas they want to help and what their most important results are so far. The outlined NGOs are Partners for Resilience, World Vision and Resilience Action International[8].

5.1 Partners for Resilience – building community resilience against climate change in Isiolo County, Kenya

Partners for Resilience (PfR) is a global network of around 50 civil society organisations that aims to strengthen resilience of communities and individuals against disasters. The network started its cooperation in 2010 with five different Dutch NGOs and NPOs. Today it is supported by various other stakeholders from public and private sectors and is active in ten different countries around the world from grass-root to national level. It focuses primarily on building resilience to climate-related natural hazards and intends to include in its programmes in particular the most vulnerable and marginalised population groups. In that regard, the NGO intends to include climate change adaptation as well as the management and restoration of ecosystems in its approaches. The rationale behind the creation of PfR is that practitioners in humanitarian aid, development cooperation and climate change adaptation are best placed to build and implement holistic resilience approaches when they work together. As Kenya is a disaster-prone country affected by environmental and social hazards and threats, PfR is active in the country to strengthen and protect livelihoods of vulnerable communities (PfR (ed.) 2019, 2020,b,c). It has three main objectives, namely:

1. **To increase the resilience of communities to disasters, climate change and environmental degradation**
2. **To increase the capacity of civil society organisations to apply disaster risk reduction, climate-change adaptation and ecosystem management and restoration measures and engage in policy dialogue**
3. **To make the institutional environment from international to grass-root level more conducive to integrating disaster risk reduction, climate change adaptation and ecosystem-based approaches**

RfR and its alliance members have tried to achieve these goals in practice by implementing a development programme in Kenya from 2011 to 2015. Their target area was *Isiolo County* and part of the *county of Laikipia* following the Ewaso Nyiro river basin, central Kenya. As the area is frequently affected by droughts, floods, social conflicts, degradation of ecosystems as well as human and animal diseases, resilience measures have been implemented to prepare, cope with and adapt to these threats. In total, PfR states that more than 40,000 community members have benefited (PFR (ed.) 2015). The programme consisted of many sub-programmes, of which five selected studies are highlighted below to show examples of how resilience measures were implemented practically. Based on these, a brief summary of PfR's resilience measures in Kenya is given, including challenges and lessons learned.

[8] The following project summaries are written in presence or past tense, depending on whether the respective projects have already been completed or are still ongoing.

5.1.1 First case study: Hot springs restoration boosts pastoralists' livelihoods

Hot springs serve as reliable sources of water for pastoralists and their livestock in *Isiolo County* and have therapeutic and medicinal value as intestinal de-wormers. At the same time, hot springs increase fertility, cure skin diseases and further increase the milk production and body mass of livestock. They are therefore essential for the livelihood, health and economic situation of pastoralists, who visit the hot springs at least once a year. Due to uncontrolled use, hot springs were environmentally degraded and therefore had to be restored. Problems that arose were usage conflicts between ethnic groups, long queues due to the limited water flow, diseases caused by contaminated water or even conflicts between humans and animals, as the hot springs are also used by elephants.

PfR carried out a participatory assessment to learn from local people how to restore hot springs in the best way possible and how the ecosystem in general can be managed more efficiently and sustainably. Pastoralists were not only involved in gathering knowledge but also in planning and implementation processes. Among other things, desilting through excavating sand, building underground passages to divert water, constructing water troughs as well as fencing around the perimeter of the main hot springs to minimise wildlife intrusion have led to the restoration of the hot springs, combined with reduced potential for conflict. As highlighted in chapter 4.1.2, pastoralists are particularly dependent on finding available water sources. The restoration of existing water sources has therefore led to an improvement of the livelihoods of pastoralists in surrounding communities. To ensure maintenance, a local water management committee has been established and trained to oversee operations and proper usage rights in the future.

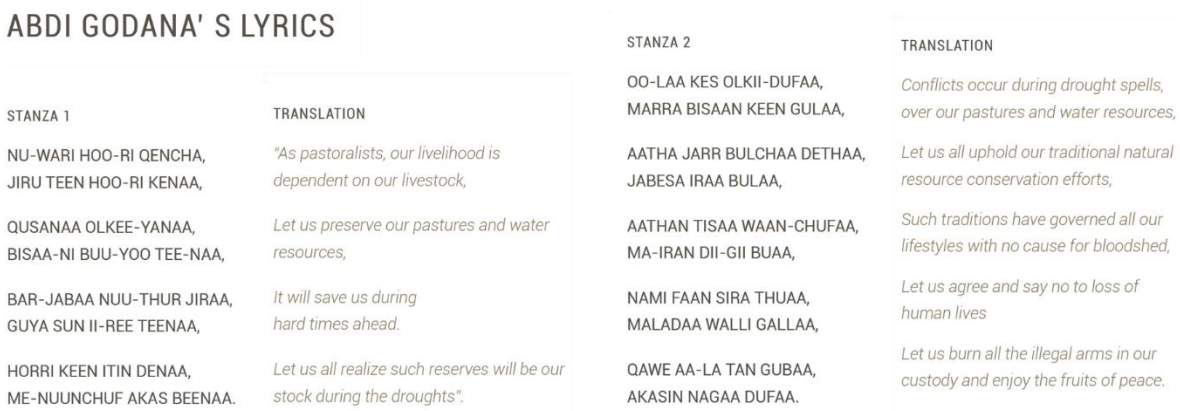
In the context of negative impacts of climate change, PfR outlines that resilience of local communities has been strengthened as pastoralists and their livestock now have better access to clean and safe water. By coping with the shock of degraded hot springs, economic security has been enhanced and pastoralists have reported that fewer livestock are either sick or dead. At the same time, environmental conservation was ensured and there were fewer social conflicts due to water sources. The sub-programme has strengthened resilience of the communities by reducing the likelihood of being affected by this shock, making the associated environmental, economic and social problems less worrying (PFR (ed.) 2015).

5.1.2 Second case study: Let's sing and dance for community resilience

Singing and dancing have always played a central role in the culture of pastoralists in *Isiolo County*, as they are fundamental to cultural rites. During rainy seasons, which is generally a time of great joy as there is enough food for pastoralists and livestock alike, singing and dancing are at their peak. Some community members dance with an intensity that puts them in a trance-like state.

As singing plays such an important role in the culture of pastoralists, PfR decided to use singing as a communication channel to raise awareness of disaster risk reduction measures and to disseminate early warning information to the public, so that pastoral peoples can better prepare for the adverse effects of droughts. To this end, the network appointed a local musician, Abdi Godana, as cultural ambassador. By now, he is widely known in the communities as an influential cultural personality and his band plays regularly at community events and political rallies. In addition, his songs are played on the local radio station, reaching thousands of listeners. PfR supported the singer and his band by providing musical instruments as well as professional coaching

and mentoring by other renowned Kenyan musicians. The band also had the opportunity to play at the global conference of disaster risk reduction in Geneva, Switzerland.
Since it is quite common for pastoralists to share knowledge through dancing and singing, resilience of the communities should be increased through messages in the songs to influence positive behavioural changes. In particular, the fact that community action is needed to improve resilience to climate change-related disasters is conveyed through the music of Abdi Godana. Moreover, the musician's songs stress the importance of saving resources before a drought and reducing potential for conflict during one, as the following figure illustrates[9]. More broadly, the intention was to strengthen community resilience by improving preparedness and awareness of communities using music (PfR (ed.) 2015).



ABDI GODANA' S LYRICS

STANZA 1	TRANSLATION
NU-WARI HOO-RI QENCHA, JIRU TEEN HOO-RI KENAA,	*"As pastoralists, our livelihood is dependent on our livestock,*
QUSANAA OLKEE-YANAA, BISAA-NI BUU-YOO TEE-NAA,	*Let us preserve our pastures and water resources,*
BAR-JABAA NUU-THUR JIRAA, GUYA SUN II-REE TEENAA,	*It will save us during hard times ahead.*
HORRI KEEN ITIN DENAA, ME-NUUNCHUF AKAS BEENAA.	*Let us all realize such reserves will be our stock during the droughts".*

STANZA 2	TRANSLATION
OO-LAA KES OLKII-DUFAA, MARRA BISAAN KEEN GULAA,	*Conflicts occur during drought spells, over our pastures and water resources,*
AATHA JARR BULCHAA DETHAA, JABESA IRAA BULAA,	*Let us all uphold our traditional natural resource conservation efforts,*
AATHAN TISAA WAAN-CHUFAA, MA-IRAN DII-GII BUAA,	*Such traditions have governed all our lifestyles with no cause for bloodshed,*
NAMI FAAN SIRA THUAA, MALADAA WALLI GALLAA,	*Let us agree and say no to loss of human lives*
QAWE AA-LA TAN GUBAA, AKASIN NAGAA DUFAA.	*Let us burn all the illegal arms in our custody and enjoy the fruits of peace.*

Figure 11: Abdi Godana's lyrics and translations of one of his songs (PfR (ed.) 2015, p. 17).

5.1.3 Third case study: Drought cycle management introduced in primary schools curriculum

In order to improve awareness, knowledge and skills of coping with droughts and their effects, PfR introduced resilience actions in primary schools. In total, 60 teachers, pupils and community members from ten selected primary schools were trained as strategic spokespersons for early warning information in their respective communities. As primary schools are a place where many people meet regularly, they seemed to be suitable as information centers for early warning. At the schools, symbolic flags of different colours were hoisted, indicating the current phases of the drought cycle. Depending on the flag colour, appropriate preparatory and countermeasures were disseminated with help from the Kenyan metrology services and the National Drought Management Authority. Key components of local drought management include adequate preparedness and mitigation measures and coordination of relief efforts when a drought is most severe. Green, yellow, orange and red flags symbolise whether the current drought situation is normal, alert, alarming or emergency, as illustrated in the figure below.
In addition, the objective was not only to prepare for and cope with droughts, but also to contribute to a general reduction in greenhouse gas emissions. Therefore, schools and their pupils took additionally part in the 'solar lamps for trees campaign'. Around 1,500 trees were planted at the schools, each of which was adopted by a pupil or one of his family members to ensure their survival

[9] To check out one of Abdi Godana's songs, go to https://www.youtube.com/watch?v=rIqi-c2egfY (last access: 18.12.2020).

and a continuous water supply. As there are some regions, where water is scarce and can only be used as a source of drinking water for pastoralists and their livestock, PfR presented instead some 760 solar lamps there. These lamps do not rely on fossil fuels and are therefore cost-efficient and at the same time climate and environmentally friendly. They are used in schools where they can be installed to extend learning hours in the morning or evening, or they can be installed in domestic homes for lighting to prolong the duration of housework and at the same time scare away wild animals.

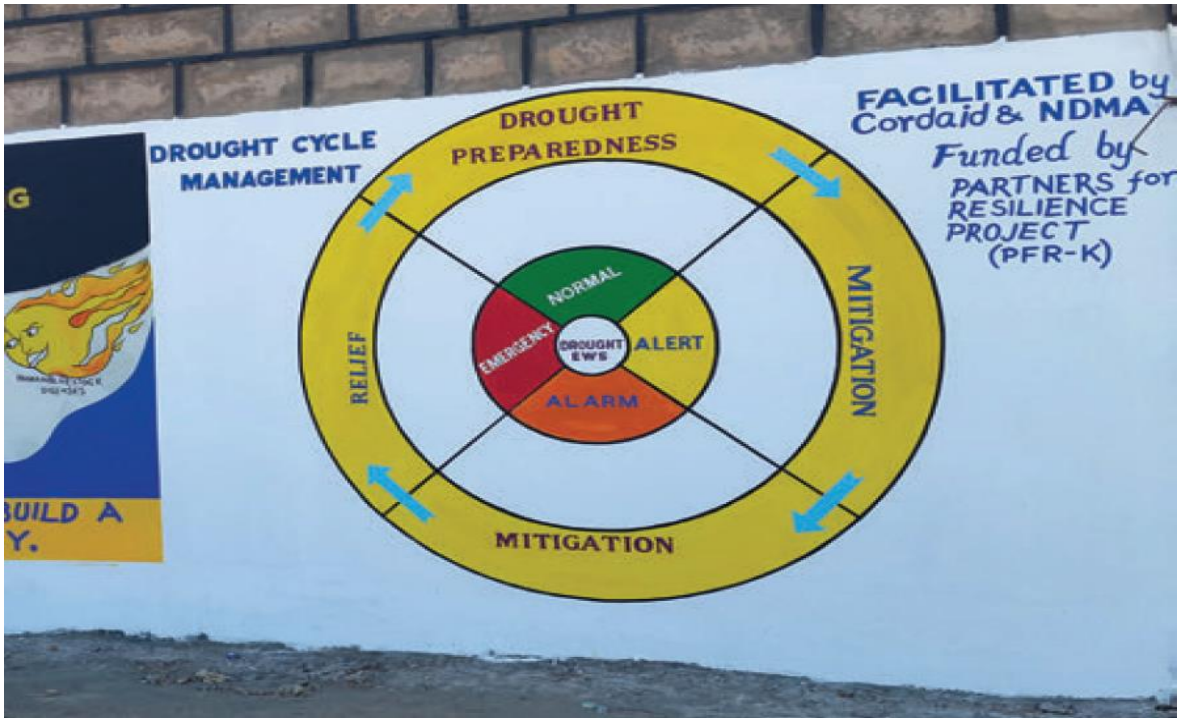


Figure 12: Drought cycle management (PfR (ed.) 2015, p. 25).

Based on the assumption that the education of children can lead to long-lasting and transformative changes within local societies, this case study by PfR aimed not only to increase the preparedness and coping capacity of local pastoralists against drought and climate change. Rather, pupils can act as social drivers of change by becoming aware of how to strengthen resilience to these threats and by providing incentives for proactive ecosystem management and restoration. The communities' resilience is thus strengthened through preparatory and coping measures, but there is hope that social change will also take place through students' own future action (PfR (ed.) 2015).

5.1.4 Fourth case study: Disaster preparedness yields positive results – resilience against bushfires

Bushfires that occur mainly during drought periods threaten the livelihood of pastoralists as they can destroy large areas of pastureland in *Isiolo County*. According to local communities, these bushfires represent a major setback as they occur regularly. In 2011 and 2012 alone, seven bushfires occurred, damaging over 6,000 hectares of forest ecosystems and leaving more than 650 livestock farmers vulnerable as property and lives were destroyed. Fires are more frequent and more severe due to rising temperatures and less rainfall. In addition, pastoralists leave embers on their homes when they move to another area, which can also lead to fire outbreaks. Occasionally

pastoralists deliberately set fire to pastureland when host communities have prevented them from accessing pasture and water resources. Traditional contingency plans and response mechanisms have been rendered obsolete by the repeated occurrence of these bushfires.
With help of PfR, local contingency plans against bushfires have been revived by supplementing them with modern information and techniques. Local contingency plans were implemented with the intention of strengthening the preparation and coping capacities of the communities against these fires. Plans were developed through so-called participatory disaster risk assessments where members of local communities gathered and provided knowledge that then was transferred to the respective plans. To help contain bushfires, emphasis was placed on reducing inter-community conflict and raising awareness so that bushfires should not occur in the first place. 45 members of local communities as well as county administration officials such as the Kenyan Wildlife Service have been sensitised through community meetings. Participants are encouraged to pass on the precautionary measures to as many individuals as possible. In addition, new firefighter scouts were recruited and trained to ensure sufficient mobility during outbreaks.
According to PfR, increased awareness of the dangers bushfires can cause, combined with new emergency plans, has enabled communities in *Isiolo County* to either prevent or mitigate the effects of bushfires. Rather than spending comparatively more on fighting bushfires, less funding is now needed as resources have been redirected to build greater preparation capacities in communities to secure pastoralists' livelihoods. As a result, resilience of communities has been strengthened as the capacity to withstand bushfires has been improved. Resilience is achieved here through preparatory measures against a shock (PFR (ed.) 2015).

5.1.5 Fifth case study: Dawning of a brighter future – the case of agro-pastoralists and pastoralists adopting fish farming

Changing weather conditions have affected the livelihood of pastoralists in *Isiolo County*. As floods and droughts have become more frequent and severe, losses in livestock and crop production have been recorded, threatening the food security of (semi-) pastoralists. In addition, communities are unable to return to their original pre-disaster living conditions because recovery periods have been shortened. As a result, the communities have suffered repeated setbacks, making some of them largely dependent on food aid.
To encourage new forms of food consumption, mudfish farming has been introduced in communities to provide them with new food sources to help them adapt to climate-related disasters. Because the Ewaso-Ngiro River, where the sub-programme was carried out, can withstand long dry periods without losing much of its total volume and contains abundant mudfish, the introduction of fish farming was seen as a comparatively easy way to increase resilience to drought disasters and thus ensure food availability.
However, fish hunting and eating is not common in the region and in some cases even culturally inappropriate, so that it was necessary to convince people and impart knowledge about how to actually catch, cook and preserve fish. PfR introduced fish farming and consumption to pastoralists in surrounding areas. A participatory assessment was carried out, revealing community vulnerabilities such as water and food shortages or conflicts between tribes. Fish farming was identified, here, as an alternative livelihood, making the economic and food situation of the communities more diverse and robust. PfR held meetings with community members and government officials to teach them the nutritional value of fish as well as cooking techniques. The

network also provided fish and scooping nets as well as tarpaulins, which made fishing much easier. Initial results show that some of the fish caught was used to sell on local markets in the county. It is estimated that these benefits alone have enabled some 40 households to meet their basic needs through this new source of income.
Overall, the integration of a new food source has increased the diversity of livelihoods, benefiting entire communities as the amount of fish caught exceeds the amount needed for the fishers themselves. Surplus fish can be sold to other community members. This new food source appears to be quite resilient and able to withstand the effects of drought. Although there is still a long way to go to convince all surrounding community members to actually eat fish, and in addition market access is limited due to poor infrastructure and storage facilities, there is nevertheless hope that this project will have a long-term impact. Resilience to food shortages has been strengthened as communities have adopted new ways to increase food production (PFR (ed.) 2015).

5.1.6 PfR's resilience measures and their contribution to enhanced living conditions

The selected case studies show different ways of strengthening resilience to climate-related disasters in *Isiolo County*. Presented case studies all took place more or less in the same region and are thus embedded in a similar context: climate change-related disasters threaten livelihoods of pastoralists as ecosystems become degraded and resulting social conflicts are on the rise. Food security is at risk.
Through various sub-programmes, PfR intended to strengthen the resilience of communities in the region to natural disasters, thereby reducing the likelihood of being affected by food insecurity. Knowledge about what is actually threatening livelihoods and how to initiate resilient countermeasures has in many cases been revealed through participatory processes. Members of local communities were encouraged to share their views with programme officials. Furthermore, by involving community members in specific processes, the long-term maintenance of some results may be achieved as the local communities' understanding of resulting benefits has been consolidated.
The sub-programmes aimed to improve resilience by increasing preparedness and adaptability of local populations against disasters and shocks. Against this background, almost all case studies emphasised the implementation of some preparatory measures. This includes measures to raise awareness of disaster's multi-scale and multi-scope impact so that locals feel the urgency to better prepare for them on their own. Alternatively, it can be strategies through which precautionary measures are implemented within the sub-programmes themselves. Adaptation measures, on the contrary, shall strengthen communities' capacity against disasters by making livelihoods more robust or more diverse as well as improving ecosystem management and restoration. Overall, preparation and adaptation strategies together strengthen resilience to disasters and further mitigate the associated problem areas. As shown in the case studies, respective measures took place at local level. Through the outlined measures, awareness has been raised, damaged ecosystems restored, social conflicts defused and economic sources and food production in general diversified.
Lessons learned include the importance of having the local population on board as participants either during planning and implementation of the programme or after its completion. The idea behind this is that it will allow the best possible solutions to be disclosed and maintained, ensuring

that communities can benefit from potential advantages in the long term. Here, it can be essential to have new or adapted contingency plans at both the community and county level. It is emphasised that these plans continue to consider local knowledge, but also identify new ways of dealing with more severe and frequent hazards. Finally, PfR stresses that although preparation and adaptation measures can strengthen resilience in *Isiolo County*, long-term success including economic diversity and food security may be limited due to inadequate infrastructure, incorrect political legislation or emerging potential for social conflict between different communities. Therefore, PfR expects that the programme has increased resilience of communities to climate change and related environmental, social and economic threats. However, in order to achieve a long-term structural change towards an even more resilient society, more efforts are needed to strengthen in particular the capacities of civil society organisations, institutions and local governments (PFR (ed.) 2015).

5.2 World Vision – strengthening resilience of households and communities in Kenya

World Vision is an international evangelical aid and advocacy organisation. As one of the largest development aid organisations worldwide, its main objectives are humanitarian aid and developmental education. With a particular focus on children and families, it works and interacts with local, national and global partners. Its topic areas resolve around health, education, social rights and economic development opportunities for youth. At the same time, the NGO intends to address other development and poverty-related issues such as climate change, water and sanitation, food security and disaster risk accordingly. In this context, World Vision views resilience concepts as an option to improve livelihoods of youth, households or communities and to enhance nutrition and general wellbeing of families and children (WORLD VISION (ed.) 2018, 2019, 2020).

In Kenya, the organisation is widespread in 37 counties and implements development projects in five interconnected key areas: education and child protection, water supply and sanitation, health and nutrition, disaster management or livelihoods and resilience. The last two in particular are interlinked and related to resilience concepts. Disaster management projects are primarily focused on providing emergency relief before, during and after crises through measures that enhance resilience of young people and vulnerable communities, thereby focusing on food distribution, early warning and emergency response. Projects within the key area of livelihoods and resilience, in turn, focus beyond traditional issues of disaster response. Since resilience concepts are seen as an option to increase wellbeing in general, these projects also focus on enhancing capacities of households or communities in the long term to ensure that food security, economic development, reduction of social conflict potential or the strengthening of local institutions is either secured or made possible. Responding to natural hazards is therefore an important part of World Vision's resilience concepts but by no means the only purpose of the respective projects in this key area (WORLD VISION (ed.) 2020,b,c,d). For example, resilience-related projects aim to further improve agricultural practices, environmental protection as well as new financial, business and market opportunities (WORLD VISION (ed.) 2017, 2020c,).

World Vision is implementing a total of 13 projects in Kenya to improve resilience and livelihoods. Most of them have either already been completed or are about to be completed in the next few years (WORLD VISION 2020c). The projects are usually implemented in partnership, with additional budget and human resources being provided by development agencies or other NGOs. They are usually geographically limited to one or a few counties. In the following, some of World Vision's

projects in Kenya are highlighted to exemplarily show objectives, strategies and, where available, achievements. This is to illustrate how the projects' measures intend to strengthen resilience and how this, in turn, may contribute to improved household or community wellbeing and food security. Summing up the projects, progress on key achievements will then be demonstrated.

5.2.1 Project one: Community resilience enhancement against environmental threats

The main objective of the project is to reduce environmental degradation in *South Alego*, a small community in western Kenya. In order to preserve the environment, various activities are carried out. These include environmental, social and economic activities that shall indirectly benefit the entire community population and directly up to 5,000 participants.

To stop the current processes of environmental degradation, the project intends to raise tree seedlings in nurseries. By encouraging youth groups and communicating the urgency and benefits of tree nursery in the region, the project aims to involve local young people in the project whilst at the same time seeking long-term change. In this respect, planting of fruit and firewood trees will strengthen the local ecosystem against degradation and make it more robust to forest fires, although the overall forest cover is increasing. Economic benefits are also possible as agroforestry can provide alternative sources of income through fruit tree cultivation or beekeeping. The project further foresees to educate communities and government officials about laws related to environmental protection by disseminating information on existing legislations.

Another aim of the project is to promote an alternative and more sustainable use of energy within the community. Through the implementation of new technologies such as solar energy, cow dung charcoal or energy-saving stoves, the amount of energy needed shall be reduced and energy dependency simultaneously limited. Intended to use for cooking, this ultimately should reduce costs. The project is expected to be completed in 2021, which is why final results are not yet available. However, resilience in this project focuses on the whole community in *South Alego* and means environmental resistance to degradation due to increased vegetation cover as well as increased use of renewable energy (World Vision 2020e).

5.2.2 Project two: Integrated climate protection and resource conservation project

The objective of this project is to improve living conditions and a more sustainable use of natural resources in *Suba County*, western Kenya. In order to better cope with adverse impacts of climate change, more than 10,000 marginalised subsistence farmers are to experience an improvement in their daily lives. Their resilience against climate change and environmental degradation should be strengthened.

Similar to the abovementioned project, the process of replanting degraded land, combined with an improved agroforestry system, is seen as an important factor in achieving environmental protection whilst increasing economic benefits. The project also aims to disseminate new energy saving options, e.g. through more modern cookstoves. However, this project goes even further, as the overall objective shifts towards climate protection and resource conservation. Consequently, the project also focuses on other priorities, including the promotion of soil and water conservation

technologies as well as updated land use protection and disaster preparedness plans. In order to advance climate protection through resource conservation, the project aims not only to improve living conditions during the respective project period, but also to continue to act as an accelerator for transformational change. For this reason, education on the importance of environmental protection and disaster preparedness is to be provided in primary schools.
Overall, the aim is to improve resilience in the communities through resource conservation and a more sustainable, greenhouse gas-reduced way of life. Increasing vegetation cover, new local energy sources and strengthening civil society shall contribute to this (WORLD VISION 2020f).

5.2.3 Project three: Marafa livelihood and economic development project

This project aimed to build resilience and improve livelihoods in *Magarini County* in southeast Kenya by focusing on three main themes, all of which are related to agriculture and food. Firstly, it intended to improve crop production, using new technologies and a better rainwater harvesting system. Secondly, poultry production was to be increased and lastly, agricultural products should be given a higher economic value through new outlets in consumer markets and an overall improvement in marketing. More than 37,000 people were expected to benefit directly and indirectly from the project.
To achieve its three objectives, the project focused on improving food security by enhancing crop production and diversifying livestock farming. New technologies as well as knowledge transfer were used for this. Food security should be strengthened in the long term, which is why funds were made available to preserve or improve the local environment and its natural resources so that agriculture production is not threatened in the future. In addition, it was also planned to strengthen savings and lending capacity, as this was seen as essential to boost economic development and create growth. The project continued to contribute to economic development by improving value chains in the livestock and agricultural sectors, thereby generating more profit for the employees in *Magarini County*. Three selected value chains, namely cassava, pineapple and local chicken were particularly promoted by enhancing their commercialisation, thus making them more profitable.
According to World Vision, the project has improved livelihoods and resilience to food crises by enhancing food security and diversity as well as environmental protection. By the end of fiscal year 2019, total household income has increased through better market-based production and saving mechanisms (WORLD VISION 2020g).

5.2.4 Project four: Integrated management of natural resources for resilience in arid and semi-arid lands

This project has the overall objective of improving natural resource and rangeland management and promoting more diverse livelihoods in Kenya's semi-arid and arid regions. It is intended to increase resilience of households vulnerable to climate change-related shocks. The project is taking place at larger scale in five arid and semi-arid counties, directly and indirectly affecting about 35,000 households and more than 200,000 people. It aims at strengthening the counties' resilience through economic, social and environmental measures. In addition, the results of the project are planned to be long lasting as research and knowledge gained through the project will be disseminated to local communities.

The project has three different outcomes. The first outcome is about securing livelihoods and strengthening market systems that support sustainable management of natural resources. Diversified income opportunities are to be developed in a way that not all of them are threatened by a single climate threat. Improved market structures will also be created to promote an economic cycle that can rely on a wide range of tradable goods. In this regard, it is foreseen to link markets to sustainable resource management of natural resources and products, both to diversify livelihoods and to improve environmental protection. Like many other resilience projects, the report stresses that financial services are crucial to livelihood enhancements, as they can provide loans, accelerate growth and secure market systems.

Secondly, this project focuses on better ecosystem services through a more sustainable management of land, forest and water resources. The promotion of new and improvement of existing water sources and improved forest and pasture management will contribute to this. More sustainable and renewable energy sources will also be promoted. In order to protect or restore ecosystems in the long term, capacities against natural disasters shall be strengthened. This should enable the management or restoration of ecosystems, but also strengthen resilience to concomitant social and economic threats.

Since the project does not relate to a single county but to entire (semi-) arid regions, the third outcome aims in particular at strengthening governance structures with regard to a more sustainable management of natural resources. This includes governance structures at the community-, county- and national level. In this context, the intention is to increase state support for natural resource management through technical assistance and increased budget allocations. Better management of natural resources should also lead to fewer conflicts between tribes or communities over natural resources. At the same time, a growing understanding of appropriate natural resource management at local level can also increase the social responsibility of local county authorities. Laws, policies and strategies should therefore be reviewed so that natural resource management is better integrated into the respective plans.

In summary, although focus is on improving natural resource management and coping with climate-related disasters, social and economic measures are also included in the project. Resilience shall be strengthened through better resource management and through other capacity-building measures that enhance local knowledge, skills, attitudes and practices so that the mentioned objectives can be achieved and maintained. The project, among other things, intends to enhance local market development, launch interventions to extend local value chains, putting communities in the situation to conserve natural resources on their own, promoting conflict sensitivity, strengthening public participation as well as fostering the role of women and youth within the communities (WORLD VISION 2020h, 2020i).

5.2.5 World Vision's resilience projects and their contribution to improving capacities of households and communities

As explained in chapter 5.2, the highlighted projects are designed to increase resilience and improve livelihoods by ensuring food security whilst addressing social and economic development processes. Resilience is interpreted as an option for reducing social and environmental threats, mainly through community and household capacity building. This usually implies improving social, economic and environmental living conditions. Although many projects related to resilience are not yet completed and the information value is sometimes limited and presented in a rather general way, some basic understandings can be stressed nonetheless.

It is common for World Vision's resilience and livelihood projects in Kenya to focus on food security in line with the protection or improvement of the environment. Better management of natural resources and water availability is supposed to build capacities of local communities. This capacity building, in turn, strengthens resilience to disasters as local people have more resources to cope with and have enough food to avoid significant shortages in times of crisis. In this context, it is important to emphasise that capacity building is not only driven by better resource management, but also by the results of social and economic improvements in the respective projects. Usually, the intention is to increase social, environmental and economic benefits alike in order to enhance livelihoods and initiate long-lasting change. Economic and social issues relate to improved access to markets and financial services as well as improved local governance, greater local participation and better trained local authorities. This should lead to changes and adjustments in policy goals and plans, thereby integrating resilience and livelihood measures (WORLD VISION (ed.) 2019, 2020i).

World Vision has presented overarching key achievements and progresses for all its livelihood and resilience programmes in Kenya combined. These are illustrated in the table and figure below, showing how many households or farmers have experienced certain improvements in terms of their personal capacity building in the fiscal years 2017, 2018 and 2019. Looking at the figure and table, it appears that agriculture and natural resource management improvement, better financial management and the advancement of local value chains have benefited a comparatively large number of households or farmers.

Table 4: Resilience projects of World Vision in Kenya (WORLD VISION (ed.) 2020i, p. 7f.).

Progress on interventions to enable caregivers provide well for their children	Number of Households		
	FY17	FY18	FY19
Households enabled to access sufficient food	6,582	6,635	10,702
Households adopting nutrition sensitive practices	1,578	2,390	5,844
Households adopting recommended post-harvest management practices / technologies	11,340	12,782	22,585
Households adopting climate smart agricultural technologies	5,538	8,196	24,941
Farmers enabled to utilize LVCD and currently engaged in atlest one selected value chain	3,546	4,514	17,480
Producer groups who have sold collectively a value added product	371	1,602	858
Savings groups that were enabled to function	485	535	421
Youth involved in starting small businesses	3,138	4,128	3,749
Community members participating in peace building and conflict resolution activities	550	3,306	11,191

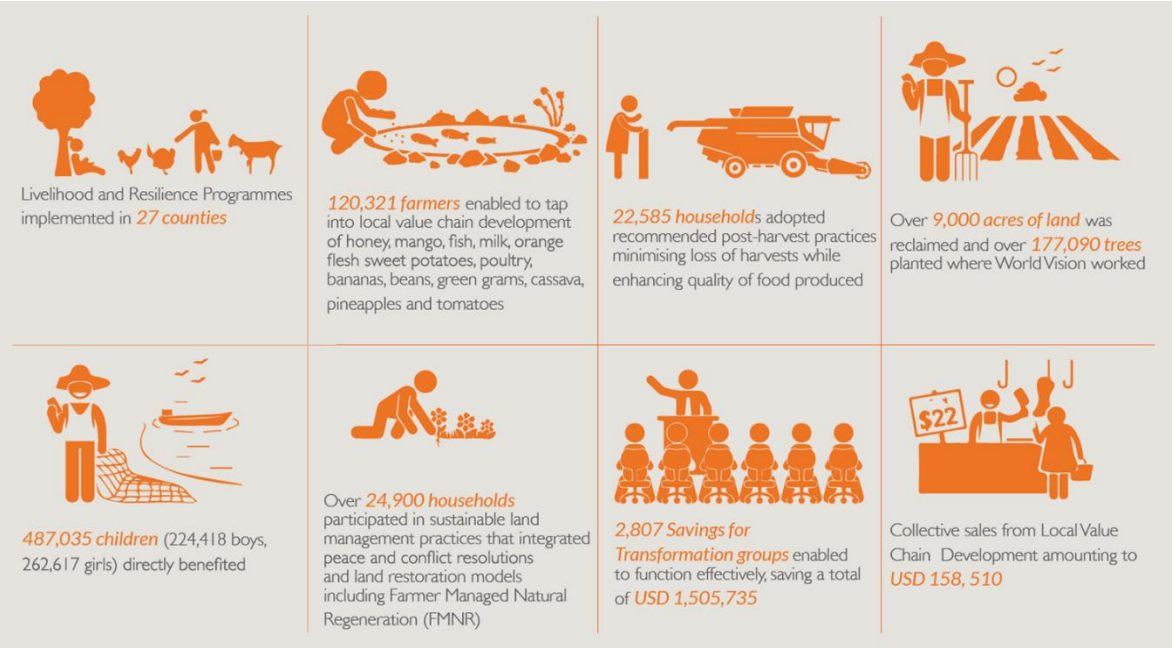


Figure 13: Indicators of key achievements of the livelihood (WORLD VISION (ed.) 2020i, p. 7f.).

As a result, many households have been put in a position to be adequately self-sufficient. Notably, the numbers in the table and figure seem to be smaller than the numbers in some of the projects as these figures only refer to a single financial year rather than the whole project duration. According to World Vision, all projects combined have not only contributed to strengthening the resilience of households and farmers but have also helped almost half a million children directly (WORLD VISION (ed.) 2020i).

5.3 Resilience Action International – resilience for refugees in Kakuma, Kenya

Resilience Action International (RAI), formerly known as Solidarity & Advocacy with Vulnerable Individuals in Crisis (SAVIC), is a refugee-led NGO in Kenya that aims to help displaced youth to have a better future. Founded in 2010 in the Kenyan refugee camp of *Kakuma*, the organisation has grown steadily, currently has 45 full-time employees and has reached out to 10,000 refugees since its inception. RAI intends to increase resilience of young people to enable transformational changes within the camp. The NGO focuses on two main objectives, namely improving sexual and reproductive health as well as better education and livelihoods. Young refugees and young women in particular should be able to have control over their own lives, bodies and reproductive health. Building on this, refugees should better be able to receive education, livelihood and gain economic independence. RAI intends to promote economically empowered, self-sufficient refugees by improving access to reproductive health services, education and job opportunities. By empowering young refugees to create better pathways for their own future, the aim is to strengthen their resilience to social and economic shocks or inequalities. Practically, RAI offers courses for refugees to increase their knowledge of reproductive health and to acquire skills for their own educational and economic success. In 2019 alone, five different courses were offered to a total of 911 participants, mainly in language skills and reproductive health. RAI works in Kakuma refugee camp only.

Table 5: Number of refugee youth who completed RAI's courses in 2019. ASRH stands for Adolescent Sexual & Reproductive Health (RAI (ed.) 2019, p.7).

Course	Male	Female	Total
English	317	132	449
Small Business Start-up	36	13	49
ASRH	80	144	224
Tailoring & Fashion Design	19	85	104
Digital Literacy	55	30	85
Total	507	404	911

To fulfil its main tasks in the long-term, the NGO has three strategic objectives contributing to this. The strategic objectives are as follows:

Strategic Goal 1: Increase comprehensive reproductive health information and services among young people
Strategic Goal 2: Increase access to education and skills building for young people
Strategic Goal 3: Promote economic development opportunities for young people

Kakuma camp, located in the north-west of Kenya, currently accommodates almost 200,000 refugees and is considered the largest refugee camp in the world (Hale 2020). As civil wars, environmental disasters and associated social and economic conflicts in neighbouring countries have increased, livelihoods are under constant threat, resulting in an influx of more than 90,000 refugees between 2013 and 2016 alone. This exceeds the camp's original capacity by far and further complicates the traditionally poor living conditions. Infrastructure is generally inadequate, employment opportunities are lacking and disease and malnutrition are widespread. As the majority of refugees are children or adolescents, external and internal support is particularly essential to improve the grave situation in the camp.

For adolescents, pregnancy and reproduction as well as a lack of educational and livelihood opportunities are particularly worrying. As knowledge about reproductive health is limited and access to contraceptives is generally not available, unintended pregnancies are increasing among teenage women with associated health risks or sexually transmitted diseases. Statistically, almost a quarter of women between the ages of 14 and 19 become pregnant. At the same time, pregnancies have economic and educational consequences as it is difficult for women to go back to school after giving birth and even more difficult to integrate into the labour market.

Further, even though public schools are available, they are overcrowded and sex education is hardly taught. About 50% of children in Kakuma camp do not attend school, and even when they do, the quality of education is limited due to unqualified teachers and inadequate classrooms, desks or books. Only six percent of refugees of high school age actually attend high school and only one percent of young refugees are enrolled in tertiary or technical education. Reasons why young people do not attend school include pregnancies, financial restrictions, forced labour, forced marriage or inadequate sanitary facilities. Without vocational training, it is even more difficult to find a job, leaving young parents trapped in a vicious circle of poverty.

Due to these setbacks, health and employment opportunities are threatened and there is danger that refugees not only struggle to cope with problems within the camp but that they struggle even more when they leave the camp as they cannot compete with others for job. RAI intends to provide solutions through its technical and vocational courses as well as its sexual and reproductive health

programme, both of which shall contribute to long-term economic opportunities for young refugees in the camp. RAI's educational programme offers refugees vocational training with a special focus on resulting employment opportunities within the refugee camp and on local markets. In comparatively short courses, the participants are taught technical and social skills in the world of business. More specifically, professional barriers are broken down through courses in English, business creation as well as tailoring and fashion design. By offering English courses for beginners, intermediate and upper intermediate levels, refugees acquire important soft skills for communication in general and business marketing and negotiation in particular. The courses for business creations, in turn, aim to strengthen the participants' competence to launch their own businesses and manage them accordingly. In addition to general entrepreneurial skills, the objectives, here, include business plan writing, marketing and market research skills. As the production of clothing is already established in the camp, refugees wishing to work in this economic sector will be able to acquire the necessary skills in RAI's courses. RAI, in cooperation with other NGOs, has also trained young refugees in basic computer skills. In total, more than 700 participants completed the respective courses in 2019.

Moreover, the sexual and reproductive health programme provides access to related knowledge and clarifies personal rights. It also promotes contraception to reduce pregnancies and sexually transmitted diseases. Health services and clinics are planned to be expanded and access to them shall be improved through accurate, relevant and culturally sensitive education processes. Awareness is raised throughout communities via workshops and the provision of educational materials. Among other things, RAI provided condoms and explained how to use them correctly, and trained community members to better communicate sexual education and pregnancies prevention measures in general. Notably, hundreds of comparatively older community members have also been trained to advise young people on family planning.

The organisation, through its three main objectives, intends to enhance resilience of local youth against social and economic shocks. However, as young people become more aware of the social as well as financial damage that a pregnancy can cause and the importance of ensuring adequate education, they not only increase their own capacity against these threats. Rather, the long-term objective is that they pass on their experience to family members, friends and children, thus contributing to social change themselves. RAI, hence, wants to pursue transformational changes within the camp. These changes increase the coping capacity of refugees in general, e.g. by preventing them from becoming unemployed and therefore becoming exclusively dependent on aid or even starting criminal activities. Instead, since they receive internationally recognised certificates for their course attendance, they can start a business within the camp or find a job for a fee when they either obtain citizenship in Kenya or return to their home countries. For women in particular, new educational opportunities and a lower probability of early and unplanned pregnancy are of importance. They become more independent and gain agency over their body and personal situation. This shall promote gender equality, at least partially.

Overall, RAI aims to strengthen resilience to social shocks in the short term through education and awareness raising for better family planning. In the long term, this should lead primarily to economic independence for young refugees. In line with the theoretical understanding of resilience for social systems (in this case a refugee camp), particular emphasis is placed on transformational change (RAI (ed.) 2019, SAVIC (ed.) 2016, 2017).

6 Analysis and discussion on how resilience concepts are understood and implemented in East Africa

In the following chapter, statements are made with regard to the main research question of this master thesis outlined in chapter 1.4, and it is analysed how concepts of resilience are understood and implemented in Kenya and Tanzania. At the same time, subsequent sub-questions are also addressed. The formulated statements are based on the information provided by the resilience projects presented in chapters four and five. The chapter is outlined as follows: First, an overview is given about objectives, subject areas and the overall context of resilience concepts in East Africa, before demonstrating how the concept is understood conceptually. Then, concrete measures to strengthen resilience are identified, whereby a distinction is made between economic, ecological, social and institutional measures. Based on the critical assessment of resilience concepts presented in chapter 2.4, it is then evaluated whether and how this critical understanding can also be found in practice. Lastly, it is also discussed how the concepts of resilience and vulnerability are linked in the projects.

6.1 Major objectives, subject areas and the overall context of resilience concepts in East Africa

The resilience concepts presented in this master thesis mostly refer to dynamics between the environment and society. They intend to stabilise a SES against a certain natural disaster whilst adapting it to associated environmental, social and economic threats. In this respect, the intention is to better live with a recurrent threat by strengthening the respective assets and variables of the system. The resilience concepts presented in the previous chapters are characterised by the fact that they are always for and against something. They act in favour of a particular system, which they want to make more resilient, and they act against natural disasters, which adverse impacts they want to reduce. An exception is the resilience understanding of RAI, as the NGO uses the term to address a social system (a refugee camp) and its deficits. Environmental disasters are not of immediate concern.

More broadly, the projects relate to climate change and an accompanying increase of probability and severity of natural disasters and hazards (cf. HALLEGATTE et al. 2020, PFR (ed.) 2015). Since the most severe natural hazards in Kenya and Tanzania are drought and floods (GOVERNMENT KENYA (ed.) 2013c, 2017, 2018), many of the resilience concepts highlighted aim to strengthen either resilience to these disasters themselves or to the problems associated with them. Resilience projects of development agencies, in this respect, aim to initiate holistic measures against droughts and floods, as well as against climate change in general. PfR and World Vision, in turn, have further implemented resilience projects with the intention of reducing environmental and natural resource degradation. Other subject areas against which resilience measures are implemented are diseases, social conflicts or price fluctuations. As RAI is a special case, its resilience measures are directed against insufficient education, early pregnancies and lack of economic prospects for youth.

The demonstrated resilience projects also use resilience to strengthen certain system variables. Here, targets are very individual and are related to the respective disasters. When it comes to drought management, resilience concepts are implemented to enhance food and water security as well as making agriculture and livestock more robust. In terms of flood resilience, the aim is to

establish and expand risk management practices, leading to environmental and social investment opportunities. Resilience concepts of World Vision have the overarching goal of enhancing livelihoods through environmental, social, economic and institutional development. StARCK+, in turn, has led to resilience concepts being implemented that capture benefits of a low carbon emission development. Lastly, RAI's intention behind resilience strengthening in *Kakuma camp* is to promote economic development opportunities.

The geographical scope of the projects also varies considerably. Two projects focus on strengthening the resilience of Kenya as a whole and most of Tanzania respectively. Other projects tend to operate on county level and implement their measures within one or a few counties. Still other projects are implemented for cities only or for a refugee camp. Whatever areas are to benefit from the programmes, the actual measures are almost exclusively carried out at local or household level. Combined measures, in turn, should then strengthen the general resilience of counties, regions or entire countries. In this regard, both terms community and household are not precisely defined so it is not clear what can be expected from the terms given the specific and different cultural and social context[10]. It appears, however, that both terms refer to a number of individuals that is many times smaller than the total number of people living in a single county. For instance, PfR's operations address different communities within *Isiolo County*, Kenya.

Since the terms community and household can mean many things, outlined resilience concepts are aimed at different target groups even though they all intend to enhance community and household resilience. In drought-affected regions, focus is mostly put on (semi-) pastoralists. Resilience concepts against flooding aim to strengthen resilience of urban citizens, especially those who are most exposed to this type of threat. FAO's and World Vision's resilience projects address rural, agricultural communities, with a special emphasis on the most vulnerable parts of population such as smallholders, female-headed households or communities affected by conflict. RAI's main objective is to strengthen resilience of refugees. The length of the projects differs as well, with project durations between three and nine years. Notably, except for TURP, RAI and a few projects of World Vision, all projects are intended to last for a comparatively short period of three to five years. Hence, the projects are designed for a shorter period of time than, for example, FRANKENBERGER et al. (2012) or TANGO INTERNATIONAL (ed. 2012) consider necessary to holistically address issues of vulnerability, restore livelihoods and sufficiently strengthen resilience. Further, as resilience projects in the field of development are a comparatively new phenomenon, projects exclusively have been launched in the last decade and many of them have only recently been completed or are still ongoing.

The number of people benefiting from the projects also varies considerably. This is partly due to the different sizes and periods of time of the projects and partly due to unclear terminology, as it is not defined what 'benefiting' means in the specific projects' contexts. The figures vary between 10,000 benefiting refugees due to RAI and 2.5 million Kenyan citizens due to StARCK+. World Vision claims to have reached more than 100,000 farmers and half a million children through all its resilience projects, and PfR estimates that it has influenced 40,000 lives through its resilience

[10] ECoRAD actually addresses the vagueness of the term 'community', stating that for pastoralists it "can mean an administrative zone such as Sub-location for administrator, a kraal for those that graze around, a clan for elders, or all the users of a water pan for herders. This means people are forming and living in a different unit of society depending on the purpose and activities they serve" (GOVERNMENT OF KENYA (ed.) 2015, p. 79).

projects in *Isiolo County*. TURP and ECoRAD have not yet published how many individuals they have reached out for. Yet, numbers must be treated with caution, as evaluations are either absent or not available and it is not clear how exactly, to what extent and for how long their situation has improved.

Regarding the context in which the projects are embedded, the overall thematic problem can usually be understood and thus the general right to exist of the respective resilience projects can be conclusively justified. However, it is not always stated in concrete terms why the projects are taking place precisely in a certain area, on a certain scale and for a certain period.

The basic justification for the resilience projects outlined is based on the fact that households and communities in Kenya and Tanzania are confronted with negative impacts of disasters more often and for longer durations (cf. HUHO and MUSYIMI 2016, cf. RUDARI et al. 2018). By this token, they can be trapped in a permanent state of recovery, as they face setbacks every time a disaster occurs. As they are often unable to cope with disasters on their own and to initiate appropriate countermeasures, it seems necessary to provide national and international assistance to proactively strengthen their livelihoods (cf. BARRET and UPTON 2018, cf. BOUSQUET et al. 2016, cf. FRANKENBERGER et al. 2012). Resilience concepts prove that they are able to do so, as they cover several thematic areas and disciplines and can thus pursue different objectives simultaneously. Since a holistic approach seems to be required to manage the risks associated with a particular disaster, resilience programmes are well suited for this purpose (cf. BÉNÉ et al. 2012, cf. LINKOW et al. 2019, cf. RUNGIUS et al. 2018).

Concerning droughts and environmental degradation, the measures are justified as those disasters may result in economic burdens and may also negatively impact other factors such as education, infrastructure or water supply. The rationale behind flood resilience is that flooding can cause serious and long-lasting economic and social problems like diseases, damaged properties or reduced mobility. Then again, building resilience against climate change impacts can be justified in East Africa because it implies many socioeconomic problems, particularly for women and vulnerable groups. Agricultural resilience's right to exist is because by implementing various approaches, natural hazards, food chain crises' and conflict potential may be reduced. RAI, for its part, justifies its action by the need for social change in the refugee camp and for a more resilient youth against lack of education and early pregnancies.

As regards the explanation of the specific project scope, information content varies. The NGOs World Vision and PfR do not outline why they operate in specific counties and why they implement certain resilience measures. PfR shows at least some content-related reasons as they note that the "area is affected by frequent drought, flood, conflict, eco-system degradation, [and] human and animals diseases" (PfR (ed.) 2015, p. 5). World Vision publicly gives no explanation as to why they implement their projects in certain areas. ECoRAD, in turn, reflects the fact that measures to promote resilience against droughts in their project area make sense, however they do not demonstrate why exactly they implemented their measures in the two counties. StARCK+, then again, outlines reasons why it is useful to implement resilience strategies in Kenya against climate change, but does not constitute why the project takes a holistic country approach, which is in stark contrast to the other projects. FAO demonstrates its large-scale approach due to its strategy being aligned with other regional and national objectives of the institution. Content-related, they further express that their six project areas (compare figure 10) are based "on their comparatively higher levels of crop, livestock and fisheries production, coupled with their high vulnerability to threats and shocks for food security and nutrition" (FAO (ed.) 2019, p.10). RAI's focus on resilience

measures in *Kakuma camp* naturally evolves, as refugees in the camp founded the NGO. Based on the assumption that local refugees know best about local problems and resources, the NGO may be able to contribute to social change in the camp. Finally, TURP arguably provides the clearest reason why it wants to focus its activities on cities in general but has so far only directed its efforts to *Dar es Salaam*. Through its own surveys, the programme has outlined that Tanzania's cities are particularly ill prepared to cope with flooding and their respective aftermaths. As *Dar es Salaam* is the country's largest cities, it is especially important to enhance resilience there. At the same time, the city is the economic, social and cultural centre of Tanzania, and by strengthening resilience, this status should be maintained in the future.

6.2 Conceptual understanding of resilience concepts in East Africa

Except for RAI, the conceptual understanding of all the projects presented is to strengthen resilience by improving local capacities through better preparation, mitigation and adaptation to a specific disaster type and its numerous and interrelated effects. Furthermore, many projects want to directly or indirectly initiate transformative social changes within their scope. However, the emphasis is different for each project, with some projects, for example, giving priority to the preparation and mitigation of shocks, whereas others aim to adapt or transform systems to better cope with the long-term consequences of a disaster. In a broader sense, projects of development organisations and NGOs certainly have a similar basic understanding of the term and share similar intentions. However, development organisations tend to take a holistic approach within their project scopes, whereas NGOs rather tend to implement more specific measures in their respective (sub-) projects. Development agencies structure their strategies to cover a wide range of communities and issues simultaneously, and to address a disaster through different interventions at different levels and over different periods of time. NGOs, in turn, carry out various projects based on their general understanding of resilience and thus contribute to the overall goals of the respective organisation. Their (sub-) projects, however, seem to consist of only a few measures and are therefore more likely to aim at preparing for, mitigating or adapting to shocks and disasters. Some projects of PfR and World Vision, for example, focus only on either improving preparedness before a shock or adapting to its consequences.

Projects with the specific goal to withstand shocks and mitigate the effects of disasters are TURP, ECoRAD, FAO's resilience strategy and the majority of PfR's sub-projects. The main objectives are to take measures to improve living conditions before a disaster occurs and to raise awareness of its impacts. They also aim to counteract the direct consequences during a disaster. For example, ECoRAD aims to improve living conditions under normal weather conditions before a drought and to minimise a drought's direct impacts. FAO plans to primarily strengthen and support communities and households through better early warning information and risk-informed policies and strategies, and PfR's sub-projects further include measures to disclose impacts of disasters, making it more urgent for local people to prepare themselves. TURP intends to improve risk identification, enhanced planning of risk mitigation as well as better-coordinated emergency management activities.

Projects that are more concerned with initiating measures to better manage the short- and long-term consequences of disasters seem to be StARCK+, most of World Vision's projects and RAI's operations. In this respect, World Vision's main objectives are to improve capacities for better response and recovery after disasters and to modify the respective SES so that it is easier to prepare

for future disasters. StARCK+ has apparently demonstrated adaptation and transformation effects, especially through its interventions in the public and civil society sectors. Finally, RAI's goal is to fully transform the system. The aim is to restructure the system in such a way that social injustices and weaknesses are significantly reduced. Therefore, its understanding of strengthening resilience is different from the other projects, as it is understood as the ability to change the respective system rather than strengthening it.

In principle, the understanding of resilience found in general resilience literature is also reflected in the projects outlined in this master thesis. The majority of the projects aim to strengthen a system against a natural disaster, not only by preventing and withstanding its direct threats, but also by implementing adaptation and transformation processes that should enable the system to cope better with long-term consequences and future disasters or hazards. In this context, the projects also include an understanding of strengthening resilience through improved absorptive, adaptive and transformative capacity (cf. BÉNÉ et al. 2012, cf. FOLKE et al. 2010). The respective development organisations disclose either through their objectives or by outlining their resilience concepts their intentions to strengthen system capacities.

Furthermore, the different intensities of the various capacity increases can also be observed, with some projects aiming mainly at improving absorptive capacity and others more at adaptation and transformation capacity. However, the risk that resilience concepts are wrongly divided into concepts that aim either on only maintaining or only changing a SES cannot be determined based on the presented resilience projects. Instead, projects that place special emphasis on strengthening absorptive capacities also have measures in their programme that are designed to strengthen adaptive and transformative capacities and vice versa (cf. BÉNÉ et al. 2012, cf. BOBAR and WINDER 2018, cf. CARTER and BARETT 2006).

Finally, the general understanding of resilience to strengthen social systems is also reflected, albeit only in RAI's measures. They primarily seek to change social systems, thereby including and, if necessary, changing institutions and power relations. Transformation processes are in fact the only factors in strengthening resilience, which changes the objective from strengthening the system to changing it (cf. KECK and SAKDAPOLRAK 2013, cf. KEMMERLING and BOBAR 2018).

6.3 Measures to strengthen resilience

In chapter four and five, various measures were highlighted to demonstrate how the respective resilience projects intend to strengthen resilience in practice. Defined measures are linked specifically to the main objectives and their sub-outcomes. For instance, ECoRAD has implemented specific measures to achieve its six main objectives and TURP implements measures in accordance to its four thematic pillars. Taken together, the projects' objectives shall be achieved through a large number of sub-projects and sub-measures. However, since the general understanding of resilience is similar and some objectives may also overlap in terms of content, it is quite possible to distinguish general measures according to specific thematic priorities. Against the background of capacity building and the specific circumstances in which the projects are embedded, resilience measures can be divided into four thematic priorities. These are economic, social, ecological and institutional measures to strengthen resilience. Below, these four thematic areas are outlined in detail and specific actions and intentions are demonstrated. Notably, this distinction obviously serves the purpose of clarity. In practice, some measures have influence in more than one thematic area. Just like the same measures can strengthen preparation, mitigation, adaptation and

transformation processes alike, they can also influence different thematic areas at the same time (cf. BÉNÉ et al. 2012, cf. PENDALL et al. 2010). For example, measures that are primarily designed to strengthen the environment may also have social and economic impacts. A clear thematic demarcation of the individual measures, as is done in the following, is therefore not always given in practical implementation.

6.3.1 Economic measures to strengthen resilience

The need to strengthen economic factors of a system against shocks is widely accepted within the projects. All projects justify this either by the potential economic downturn caused by the specific disasters or by the potential economic improvements that can occur if resilience is strengthened. Many measures are therefore aimed at mitigating the negative impacts of a disaster on the economy, strengthening economic recovery and introducing measures to bring long-term changes in the economic sector.

By and large, the specific measures in the resilience projects are designed to make the economic system more robust or diversified so that it can better cope with and adapt to the effects of a specific disaster. The idea behind this is that it makes sense both to strengthen the current economic situation and its main determinants against the respective disaster and to diversify the economy so that there are more determinants that are not affected by the disaster-related problems.

For its part, in order to make the economy more robust, ECoRAD has implemented various measures to strengthen the livestock of pastoralists, including improved pasture management, the provision of new water sources, improvements to local market infrastructure and more viable livestock through new breeding mechanisms and a heifer exchange programme. PfR has also claimed to have made livestock of locals more robust through restructuring a local ecosystem. FAO's strategy, in this regard, is structured to make the agricultural sector more robust by expanding the production and value-added chains of agricultural goods, establishing local food storage centres and facilitating access to micro-credits from financial institutions. World Vision also states that one of its projects has made the agricultural sector more robust by improving crop production, increasing chicken farming and focusing more on marketing to end markets.

To diversify the economy, ECoRAD, in turn, has launched promotional activities for new economic goods such as salt, honey or agriculture. StARCK+ outlines that the private sector has been made more diverse by creating new businesses for climate-resilient products. In turn, FAO's resilience strategy envisages the promotion of alternative livelihood measures (e.g. agro-processing). PfR has introduced fish farming in a community to provide a new, disaster-resistant resource that can be used for self-supply or for sale. World Vision intends to improve access to markets and financial services in a variety of projects, thus opening up new local economic circles and promoting local value chains. It further intends to promote new sources of livelihood income, such as agroforestry, new agricultural products and other livestock species. RAI foresees to improve economic opportunities in the refugee camp, thereby making the overall economic situation more diverse. For instance, participants of their operations have launched small retail-shops in *Kakuma camp*.

Overall, measures to make the economy more robust are primarily aimed at mitigating the direct consequences of a disaster and improving absorptive capacity. Measures aimed at making the economy more diverse should in turn enable a faster recovery of the respective system and initiate

transformation processes. Consequently, measures should also improve adaptive and transformative capacity.

6.3.2 Ecological measures to strengthen resilience

As most of the projects are about coping with a natural disaster, ecological measures are launched to stop or mitigate negative environmental impacts or to restore and strengthen ecosystems in general. Environmental objectives encompass achieving sustainable NRM, including land and water management, ensuring environmental protection whilst decreasing environmental degradation or reducing carbon equivalents. In doing so, the intention is to enhance local capacities, either by preparation and mitigation measures or by recovery or transformation ones. This depends on whether the intention is to preserve and protect the environment from degradation and destruction, or to restore and adapt it after it has already been partially degraded. Therefore, measures are diverse and context-related.

Against the background of strengthening NRM, ECoRAD has implemented various measures, focusing on better usage of existing water sources as well as the provision of new ones. Measures included new boreholes, water pans, pipelines, a rock catchment system and a solar system to pump water. TURP, on the other hand, wants to protect the environment from degradation by planning to enlarge rivers, increase vegetation cover to stop soil erosion or improve water quality through new sanitation facilities. Ecological measures in StARCK+ are primarily intended to reduce carbon sequestration through better water and resource management and a more environmentally friendly agriculture. In addition, clean and sustainable energy options for cooking should be promoted. FAO's resilience strategy has similar goals and aims to strengthen and protect food and ecosystems alike.

Concerning the NGOs, PfR has implemented measures to restore and strengthen ecosystems. Firstly, it has restored hot springs by excavating sand, building underground tunnels and constructing troughs. Secondly, it has initiated a tree planting campaign with children. World Vision's interventions are intended to rehabilitate land, forest and water sources and therefore include planting fuelwood trees, raising tree seedlings in nurseries, promoting water conservation technologies and increasing the use of natural energy sources for cooking. As the intention of RAI is to build resilience within a refugee camp, no environmental measures have been implemented so far.

Although the results initially have an impact on the ecosystems in which the projects operate, the effects are naturally also intended to improve livelihoods of households or communities. Since the overall aim is to strengthen the resilience of a SES, ecological measures also have impacts on human beings, and the basic idea is that these measures reduce the disaster potential for societies and ecosystems alike (cf. ASIAN DEVELOPMENT BANK (ed.) 2015, cf. FOLKE et al. 2010, cf. LINKOW and TRUMP 2019). Therefore, these improved ecosystem services affect livelihoods, as they impact disaster resilience in general, but can also lead to e.g. improved food security, economic opportunities or a more refined society. The outlined measures can strengthen resilience due to enhanced absorptive, adaptive and transformative capacities. Measures are implemented to withstand shocks, but ecosystem restoration and increased (and protected) vegetation cover in particular can also lead to adaptation and transformation processes within a system and enhance corresponding capacities.

6.3.3 Social measures to strengthen resilience

As resilience projects operate at community level, many projects have launched activities with the intention of changing social processes and thus strengthening and empowering communities to better cope with the respective disasters. Most of the activities aim to strengthen resilience by improving disaster preparedness and initiating transformative, long-term change.

The most frequently mentioned social interventions are improving education and awareness of a particular disaster, its impacts and responses, as well as reducing the potential for social conflicts. The reasoning behind improving education and awareness is the assumption that this can lead to locals being better prepared to deal with a disaster. For example, PfR intended to raise awareness using music. The NGO also provided drought education in primary schools and provided early warning information by means of a hoisted flag that indicated whether there was a drought or not. Furthermore, emphasis was put on raising awareness on how to avoid bushfires. World Vision educated children in primary schools about environmental protection and disaster preparedness, and provided training on local laws and policy plans. For example, environmental clubs have been established in schools to set up tree nurseries and plant tree seedlings in watershed areas. In return, StARCK+ has provided local communities with learning papers on its results, e.g. on climate-friendly agriculture, clean energy or technical assistance opportunities. ECoRAD has delivered trainings and workshops for local people to improve their understanding of drought risks and solutions. TURP has educated communities on the need to reduce and clean solid waste and FAO's strategy intends to train locals in more efficient food production, post-harvest management and the use of new technologies. In addition, the institution envisages disseminating information on agricultural products and NRM to local communities. As the objectives of RAI differ from the other resilience projects, focus is mainly on the implementation of social measures. In this context, the NGO trains locals in reproductive health education to reduce the number of early pregnancies. In addition, courses were offered to teach locals technical and social skills, such as the English language, how to start a business and fashion design.

The importance of reducing social conflict potential is also outlined in several projects. Societies should be strengthened in ways that reduce conflict potential due to natural resources and possible resource scarcity. Especially regarding the lasting success of the projects, it is considered essential to enable the communities to live together peacefully. ECoRAD, World Vision, PfR and FAO have highlighted that they have implemented or plan to implement measures focusing on this aspect. Measures include inter-communal meetings, trainings for police and tribal leaders, peace marathons, inter-communal children's camps or strengthening indigenous institutions. It is noteworthy that many economic, ecological and institutional measures in the projects also have an indirect peacebuilding and social conflict-reducing effect.

Other social measures in the projects are adapted specifically to the given circumstances. For example, ECoRAD, TURP, FAO and PfR have all set out community and contingency plans to strengthen coping capacities and civil society locally. Furthermore, StARCK+, ECoRAD and some of Word Vision's projects indicate that they aim to some extent to strengthen the role of women in (mostly) patriarchal societies, especially by expanding their economic and political roles. Other social measures include FAO’s intention to strengthen or establish local non-governmental associations, organisations or cooperatives so that the local population and farmers can better represent their interests and voice their concerns, and PfR’s intention to train firefighters to increase social capacity against bushfires. TURP, in turn, intends to strengthen formal and informal networks through future community risk reduction plans, thereby expanding lending activities,

mutual aid, collective enterprises or informal insurance schemes. RAI's long-term objective is to expand health services and clinics in the refugee camp.
Overall, social measures should lead to a more self-sufficient society with individuals being aware of disasters and their effects. However, social measures are primarily intended to act as a countermeasure against a specific natural threat. Although social injustices are addressed (e.g. through peace-making processes), the resilience projects presented are not aimed at holistically changing social structures and their weaknesses, nor do they properly address underlying power structures. The aim is rather to adapt a social structure and not to promote social change. For instance, ECoRAD critically outlines that the project has not provided any long-lasting benefits for the education and health sectors, even though this is "necessary because sustainable growth and human-capital development in pastoral communities cannot be achieved in the long-term without such basic services" (ibid., p. 159).
In direct comparison, however, it becomes clear that measures to strengthen resilience are not to be achieved through social measures, but primarily through effects on the environment or the economy. The social character of the projects is certainly present, but the scope of the measures and their effects appear comparatively small. Strengthening community resilience in the projects is therefore not primarily aimed at social, but at economic and ecological processes. The social measures presented in this context are predominantly aimed at increasing the adaptive and transformative capacity of the respective systems, as the objective is to adapt and change system variables in order to better cope with future disasters or shocks.

6.3.4 Institutional measures to strengthen resilience

Local capacity improvements are not only achieved through enhanced natural, social and economic coping potential with disasters, but also through measures that shall enhance state governance at local or county level. Both Tanzania and Kenya are characterised by low state governance capacity in small-scale regions or counties, meaning, among other things, that local state authorities are not well equipped to provide basic government services, implement local and national development plans or maintain positive results of development projects (cf. ALAT (ed.) 2011, cf. NGIGI and BUSOLO 2019). For these reasons, some resilience projects intend to strengthen local, government-led institutions. The underlying assumption is that results can best be achieved and, more importantly, maintained if local government bodies and authorities are strengthened. Hence, measures to strengthen state institutions should on the one hand lead to a successful implementation of the respective resilience concept by enhancing capacities to prepare, mitigate and recover from a disaster. On the other hand, these measures stand out explicitly for their transformative impacts because strengthening local institutions may have positive impacts for the respective system that goes beyond simply making it more resilient.
Measures are primarily designed to train local state authorities and to implement local governance reforms. ECoRAD, in that regard, has offered trainings and knowledge to government employees, teaching them about drought management, the usage of new technologies and methodologies as well as ethnic group tendencies. TURP has trained DarMAERT staff so that their understanding, planning, practices and executive actions against flooding have improved. In StARCK+, resources have also been deployed to train government officials on how to implement climate resilience through practical decision-making and how to provide climate information services to the public. According to the resilience strategy of the FAO, government agencies should be trained to

strengthen their capacity to advise the public on agricultural resilience and to strengthen public and private partnerships. PfR has trained officials from the Kenya Wildlife Service on how to deal more effectively with bushfires.
Local government reforms are about strengthening or integrating resilience into local government plans and processes, consolidating e.g. disaster risk, climate change adaptation or ecosystem-based approaches. StARCK+ has presumably the biggest focus on it as the project has led to the modification of 20 state and county regulations and has managed to integrate climate resilience into the budgets of some counties. Similarly, FAO plans to strengthen food and agriculture resilience in local government plans and further intends to contribute to the development of strategies on how to translate the objectives of national agriculture plans into local action. Next, actions of World Vision shall lead to enhanced governance of natural resources by increasing budget allocations and technical support for NRM at county and national level. Other measures to strengthen resilience institutionally are the development of government-led early warning information centres, the strengthening of the Tanzania Meteorological Agency or the extension of seed testing laboratories. In total, FAO and StARCK+ have the most institutional measures to strengthen resilience due to their large-scale approaches. Still, except for RAI, the other agencies and NGOs have also recognised the importance of strengthening local state governance capacities. The outlined measures aim at enhancing absorptive, adaptive and transformative capacities. Training officials is mostly about absorptive and adaptive capacities. However, anchoring resilience in county budgets and government plans can also have transformative effects on society that are long lasting, as they are hardly reversible and may ensure more self-sufficient local structures. Measures that strengthen governance reforms and plans are therefore intended to enhance resilience particularly through transformative capacity improvements.

6.4 Conceptual criticism of resilience concepts

Since resilience concepts are criticised with regard to theoretical shortcomings and practical usefulness (BÉNÉ et al. 2012, WALSH-DILLEY et al. 2013, MITCHELL 2013), it is necessary to clarify whether this criticism is reflected in the projects presented in order to make statements about possible weaknesses of the concepts in East Africa. In doing so, it is critically analysed to what extent the normativity of resilience concepts, their system-maintaining objective, transfer of responsibility, connection to neoliberal ideologies and non-inclusion of underlying social power structures can be found and what effects this has on the results of the projects.

6.4.1 The normativity of resilience concepts in practical understanding

Resilience as a concept has been criticised for its vagueness and normativity, as the term is not used uniformly but is framed and adapted by development actors and agencies according to their needs and interests. In addition, there is a risk that this is at the expense of appropriately incorporating contextual hazards and system properties (MITCHELL 2013).
Regarding the projects outlined, it appears that the concept has been adapted to the interests of the implementing organisations since they use the term to address their overall targets as well as specific projects' contexts. Interestingly, their general understanding of the term differs only slightly from one another and is also similar to the basic understanding of the term presented in chapters one and two. The vagueness of the term is mainly because the understanding of the term itself is

comparatively general and the term is used for different thematic issues, against specific threats and for specific system properties. Even though the general understanding of resilience is similar, the term therefore encompasses a broad spectrum of topics as well as a diverse set of practical measures.

In a broader sense, except for RAI, all projects and NGOs outline a general understanding of resilience as a concept for enhancing capacities through better preparation, mitigation and adaptation of a system against a specific disaster. For instance, PfR identifies resilience as "the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions" (PFR (ed.) 2015, p.5). The idea of transforming a system even further is also part of many projects but is not always clearly formulated. In contrast, RAI considers resilience more as a tool for channelling transformative change.

World Vision, FAO and RAI adapt the measures associated with the term to the objectives and needs of their organisations. FAO, for example, adapts the term as a tool for improving food security and nutrition. World Vision uses the concepts to increase (child) wellbeing and to help the most vulnerable. RAI understands resilience as a personal character trait of refugees to be self-sufficient and to have agency over their own bodies and lives.

Other projects, in contrast, do not pursue their own interests, but implement resilience concepts based on context-dependent hazards and threats. ECoRAD, TURP and PfR's sub-projects base their actions primarily on both specific threats and system variables. TURP, for example, outlines their resilience measures based on an assembly of problems. It emphasises that flooding has severe consequences for cities and that lack of data information, inadequate land use planning systems and a significant infrastructure gap are major weaknesses that have to be overcome to achieve flood resilience. ECoRAD demonstrates the need to build resilience to drought due to the long-lasting effects of this disaster and the inability of local people to prepare and adapt on their own.

Another factor that contributes to the normativity and vagueness of resilience in practice is the implementation of projects through many sub-projects. These sub-projects are diverse and address environmental, social, economic or institutional issues for a specific community within a specific timeframe, making resilience in practice even more multi-faceted. However, these sub-projects and sub-measures are implemented independently and the interconnectedness of them is not shown. Therefore, no information is provided on the feedback dynamics between them and instead it is simply assumed that the sub-projects together strengthen resilience. This is a notable shortcoming of some of the projects, showing that a profound understanding of system variables and their connection to each other has not been adequately considered.

Overall, resilience in practice is characterised through its normativity. The term is sometimes interpreted as reflecting the interests of the main implementing agencies, but some projects and their activities are also primarily based on contextual hazards and threats.

6.4.2 Resilience concepts and their notion to maintain systems and keep things as they are

The critical assessment in chapter 2.4 has demonstrated that resilience concepts are tied to the idea of keeping things as they are since the intention is to maintain basic system structures against threats and disasters. The aim is to improve a system through modifications rather than through

complete transformations (WALSH-DILLEY et al. 2013, RUNGIUS et al. 2018, PIKE et al. 2010). The question of whether this can be found in the projects presented depends on how system maintenance and system transformation are defined. For simplicity reasons, in the following, system maintenance is understood as the goal of absorbing negative impacts of disasters and the intention to focus on adaptation measures. System transformation, in contrast, means that system structures, rules, power relations, goals or paradigms change fundamentally (cf. BIRNEY 2016). Following this idea, it is nevertheless obvious that the projects pursue different approaches. Some projects are more concerned with preserving systems, others place more emphasis on transformation. Furthermore, due to their multi-faceted nature, many resilience concepts aim at both preserving systems and initiating transformational changes in the future.

TURP, ECoRAD and the sub-projects of PfR are based primarily on system fostering. Their basic understanding is that a specific disaster has a negative impact on a system and that resilience should enable the maintenance of its core functions and structures. The emphasis is on preparation, mitigation and adaptation to a shock situation. In addition, the projects specifically outline the problems associated with a disaster and thus attempt to justify the need to keep the system structure intact. Adaptation to disasters is of far greater importance than complete system transformation.

The resilience strategies of FAO and StARCK+ have placed greater emphasis on system transformation, simply because of their project scope. Due to their holistic approaches, the project results, if achieved, can lead to transformative changes in both countries, e.g. through ensured rural food security, strengthened vulnerable households and communities or enhanced civil society and local governance processes. However, their bundles of measures are also characterised by the fact that they are intended to lead jointly to fostered and adapted systems. Thus, these projects also focus on system maintenance, but their results can channel long-term system changes.

The presented projects of World Vision, in contrast, focus on improving resilience and livelihoods. If projects are primarily aimed at strengthening resilience, this usually involves the preservation of systems, e.g. by improving environmental conservation processes. If, however, the aim is to strengthen livelihoods, the focus is more on transformation processes, as these projects are intended to bring about major changes in the economic framework conditions.

Finally, and unlike the other projects, RAI intends to initiate transformative processes in the refugee camp. Since the organisation's objective is to lead to behavioural change and to an improvement of living conditions in the camp, the main aim is to bring social change. The conditions in the camp are considered so poor that in order to strengthen resilience to social injustices a fundamental system change must be pursued. Hence, the NGO does not seek system maintenance but system change.

In general, most resilience projects, except for RAI, follow a system-maintaining approach. The basic idea of keeping things as they are and fostering systems is thus certainly reflected in the projects. However, the resilience projects also intend to change and adapt some system structures, which can directly or indirectly lead to transformative system changes as well. Overall, the projects are characterised by a pronounced systems thinking. Despite vague formulations, all projects aim to influence specific systems in different ways.

6.4.3 The transfer of responsibility from development organisations to local populations and civil society

Another criticism of resilience concepts is the increasing transfer of responsibility from the state and development agencies to local populations and civil society (JOSEPH 2013, ZEBROWSKI 2013). Indeed, the presented resilience concepts outline that it is common practice to integrate locals into the projects, whether in identifying problems and possible countermeasures, in implementation processes or in ensuring maintenance after project completion. Resilience concepts seem to be most promising when local government authorities and civil society organisations are involved in the identification and implementation processes alongside locals. Since strengthening resilience requires actions in several disciplines, the responsible agencies and NGOs usually establish beneficial partnerships with communities, research institutions, government institutions, civil society organisations or other development agencies and NGOs.

In this regard, ECoRAD's objective is to create self-reliant resilience communities by working with local populations and government bodies. In the short term, the established DMC shall be taken over by local communities and governments. Furthermore, government officials' individual capacities against drought disasters shall be increased. In the long term, communities' dependencies of external support shall be gradually reduced, thereby transferring responsibility to locals and county institutions. TURP intends to complete its surveys, gather and analyse its data and implement its measures through the incorporation of students, local communities and city officials. Based on the assumption that, depending on the city district, certain population groups know best which processes can contribute most to ensuring resilience to flooding, an attempt is being made to involve a diverse range of social classes and communities in the project.

Next, StARCK+ implements its actions with the help of many national and international organisations as well as locals. The project improved the participation of marginalised groups in processes to improve governance, climate change adaptation and NRM. In the context of private sector reforms, it worked with some UN sub-programmes, microfinance institutions and the Kenya Association of Manufacturers as implementing partners. To strengthen advocacy for civil society, the project collaborated with 23 sub-organisations. Furthermore, to improve governance interventions at the local level, the project cooperated with NGOs as well as Kenyan and UK institutions. Finally, FAO intends to involve universities and other research institutions for context analysis, policy formulation and technology development and transfer, as well as local and indigenous institutions for conflict mitigation. In addition, market-based interventions will be facilitated with the help of private farmer organisations and the Tanzanian government will be brought in for technical advisory services and support in policy and strategy development.

The NGOs implement their resilience measures also in accordance with local population and other civil society organisations. World Vision, in this regard, aims to enhance existing local structures, communities and institutions with help of local individuals. The main objective is to strengthen civil society in the long term, thereby transferring responsibility to locals. PfR also shifts responsibility to locals as the organisation implements and maintains resilience measures jointly with their help. Further, RAI works together with young adults in and around *Kakuma Camp*, local NGOs, international volunteers and the Kenyan government. The organisation views itself as a starting point for transformational change in the camp, as the intention is that participants will independently pass on their experiences through the projects to other camp inhabitants.

Finally, against the background of strengthening local communities, projects have in fact shifted responsibility to locals and other institutions in order to strengthen local structures and government agencies as well as to ensure maintenance after project completion.

6.4.4 Resilience concepts and neoliberal ideologies

The popularity of resilience concepts is attributed to their adherence to a neoliberal, free-market ideology (KEMMERLING and BOBAR 2018, WALKER and COOPER 2008, WALSH-DILLEY 2013). In principle, this idea is also reflected in the projects presented, as they almost all aim to strengthen resilience by adapting and changing economic activities. Market reforms, however, primarily refer to local economic cycles. The aim is to make the local economy more robust and diverse to better cope with disasters. However, the argument put forward by JOSEPH (2013) that resilience concepts should help to integrate the global South even more into the world market is only sporadically found. Instead, development agencies and institutions proclaim to implement predetermined international and national objectives and frameworks at local scale, such as the SDGs or Kenya's policy of ending drought emergencies. Therefore, the outlined resilience concepts can nonetheless be seen as an international form of neoliberal governance through which donors and agencies pursue their own agenda and interests. They simply pursue other goals than improving international economic relations.

At local level, the intention of all projects is to promote economic reforms, either by strengthening the local economy against shocks or by initiating processes to change the economic situation in general. In the context of resilience to drought, market reforms aim to make the local economic system more diverse and robust and to increase the potential for participation in economic activities. This may include developing and facilitating access to new markets and promoting new sources of income. StARCK+, in turn, has strengthened the Kenyan economy in adapting to climate change. FAO intends to strengthen the agricultural sector to achieve food security at local level. Resilience to flooding in the broader sense is applied to strengthen urban economic cycles against disruptions. World Vision aims to improve economic empowerment, especially for children, youth and the poor. However, this is also done at local county level, for example by developing and upgrading local value chains. RAI considers the lack of economic opportunities as a basic problem within the refugee camp. The NGO tries to give refugees a perspective so that they can find work in the surrounding area or in the camp. In total, the projects undoubtedly reflect the opinion resulting from the general resilience literature that resilience concepts implement market economy reforms in order to offer solutions to cope with future disasters (cf. KEMMERLING and BOBAR 2018). Thus, one can assume that neoliberal ideologies are indeed further embedded in development projects.

Regarding the integration into the world market and increasing international economic relations, a differentiated picture emerges. The majority of resilience concepts do not outline that their measures will significantly affect international economic relations. Many projects even explicitly aim to reduce international dependencies. In this context, PfR's, ECoRAD's and RAI's projects are in no way intended to influence the international flow of goods. StARCK+ as well as World Vision's projects and FAO's resilience strategy do not elaborate on this either. Given the scale of the projects, it could be assumed that their impacts in terms of economic transformation in the countries will be so significant that this could lead to increased integration into the world market. However, this has not been elaborated thus far and is not a direct objective of the projects.

The only resilience project that is to some extent based on the idea of promoting international economic relations is TURP. No other project is built on such a strong rationale to protect and strengthen the economy. Under the guise of strengthening resilience and helping the most vulnerable, it is actually clear that maintaining the economic importance of *Dar es Salaam* is paramount and that measures are primarily designed to achieve this. Since the city is the central economic, social and cultural hub of Tanzania, there are concerns that there could be far-reaching consequences for the whole country if the city literally goes down the drain. Accordingly, national interests and all previous investments so far have flown to the city. Strengthening resilience in *Dar es Salaam* is not only intended to increase the city's economic potential, but also to ensure that the city becomes attractive for international investment and to increase international economic relations.

Apart from TURP, no other project appears to have a significant impact on global economic relations. Resilience concepts in East Africa can nonetheless be seen as an international form of neoliberal governance, as donors assert their own interests. JICA and DFID, for example, provide guidelines for future resilience measures through their projects and FAO's resilience strategy is set in the context of the institutions' goals to promote agriculture and strengthen rural resilience in East Africa. Neoliberal governance is more evident in the implementation of global goals and interests of agencies and NGOs through resilience projects. Involvement in international economic relations is hardly addressed.

6.4.5 Resilience concepts and social power structures

Resilience concepts have been criticised for their inadequate understanding of social power structures because this can lead to the underlying causes of poverty and vulnerability remaining concealed and unchanged (cf. WALSH-DILLEY ET AL. 2013, BÉNÉ et al. 2012)

The projects examined give a mixed picture in this respect. In general, many of them view economic and ecological processes as crucial for increasing resilience. The importance of understanding and changing social power structures is thereby mostly neglected. That does not mean that they are not addressed in the projects, just that their relevance is comparatively low.

Regarding the projects presented, some of them do not deal with social power structures or at least do not provide specific information on them. Others do not address social power structures either, but refer to the real need to integrate a better understanding of them into future projects. Then again, other projects intend to develop their resilience measures based on a differentiated understanding of the underlying social power structures of the respective system.

Except TURP and RAI, no project has built its actions on a profound understanding of social structures, as no resources have been or are being provided to obtain sufficient information on this. Some basic knowledge of the society and culture in which communities are embedded is known to development organisations, but profound knowledge of social structures is either not developed or not referred to.

To incorporate at least some basic understandings about local societies and their vulnerabilities to the respective disasters, many projects integrate locals in the projects through participatory processes. In doing so, the objective is to gain local knowledge about underlying system structures, which is then used to adjust specific measures. However, participatory processes themselves are also subject to errors and cannot necessarily reveal all social power relations. For instance, ECoRAD critically outlines that their project could be biased towards young men because they speak English

and are therefore more likely to be picked as participants in these processes. Therefore, their knowledge may disproportionally influence the understanding of social structures as well as decision-making processes. The perceptions and experiences of other parts of society may remain hidden[11]. At the same time, PfR highlights the fact that the influence of local people on general knowledge acquisition is constantly being reduced in its projects. As the context of local vulnerability changes, e.g. due to climate change or population growth, external scientific contributions should instead be included on a correspondingly larger scale.

On the contrary, TURP and RAI have acquired a more profound understanding of social structures and underlying causes of poverty and risks. In this context, TURP has conducted two vulnerability studies to identify more precisely who, where and how people suffer from flooding as well as the general social conditions in which individuals are situated. Particularly the community risk reduction plans should be built on this knowledge. Next, RAI is a NGO that was founded in the refugee camp in which it operates. All its employees live in the region. Due to the perception that locals have a more profound understanding of social power structures, the NGO's employees know first-hand about the most unjust social structures in the camp. The NGO's goals of reducing early pregnancies, improving access to education and enhancing job opportunities are based on a personal understanding of the social power structures in the camp. In addition, group discussions conducted with young refugees have strengthened the NGO's viewpoints.

Regardless of the understanding of social power relations within the individual projects, all projects aim to improve and change certain social structures in order to strengthen capacities. Social measures directly and indirectly aimed at changing social power relations are, for instance, peace-building missions, the strengthening of local institutions, the provision of contingency plans, raising awareness of certain disaster impacts or improving (access to) education.

However, as there appears to be a lack of sophisticated knowledge about social power relations and the underlying sources of poverty, the respective measures must certainly be examined in a critical way. Since the real reasons for poverty and disaster risk may be unknown to the implementing agencies and NGOs, the project's measures may not be able to counteract them sufficiently in the long-term. As some of the presented resilience projects are particularly designed to help the weakest members of society, this turns out to be problematic. A detailed understanding of social structures is necessary to understand how exactly a disaster impacts society and how countermeasures can best be implemented. If this understanding is not sufficiently demonstrated, it may not be clear who exactly belongs to the most vulnerable, how their risk exposure becomes visible in the first place and how they can actually be helped. In this context, ECoRAD, for example, calls for a better understanding of community characteristics, different mentalities as well as the inhomogeneity of individuals due to different lifestyles, ethnicities, genders or generations. Overall, it is precisely for this reason that it is important to evaluate the projects presented. In doing so it can be demonstrated whether the resilience projects built their measures on a sufficient understanding of social power relations and whether their measures positively influence these. Alternatively, it may be shown that exclusionary practices remain anchored in society even though the projects have strengthened resilience (cf. BOUSQUET et al. 2016, PETERSEN 2014).

[11] To gain more information on how participatory processes can be implemented and what needs to be considered, check out Kumar (2006) for a detailed overview.

6.5 The link between resilience and vulnerability

As outlined in this master thesis, resilience and vulnerability are vaguely linked, with both terms perceived as antonyms of each other. More resilience leads to less vulnerability and more vulnerability leads to less resilience. The link between the two terms in the field of development is that the intention is usually about moving from a state of vulnerability to a state of resilience (BÉNÉ et al. 2012). At the same time, disaster risk is seen as a reason for the vulnerability of individuals, thereby justifying resilience approaches against these disasters to reduce vulnerability.

The basic link between both terms is echoed in many of the projects presented, asserting the raison d'être of the projects through vulnerable individuals, households and communities as well as the fear of becoming vulnerable because of future disasters. By strengthening resilience, vulnerability shall be reduced or even eradicated. In this context, ECoRAD has outlined that the semi-settled population within its project area is particularly vulnerable to drought and livestock reduction and therefore has implemented measures to diversify their livelihoods. In addition, vulnerability should be reduced through peace-building programmes in areas populated by different ethnic groups. StARCK+ justifies its measures based on Kenya's vulnerability to climate change and aims to strengthen resilience to counteract this accordingly. FAO's strategy justifies its objectives because agriculture-dependent communities in Tanzania are vulnerable to food insecurity and malnutrition. Therefore, by preventing and mitigating the effects of related disasters, the aim is to address the root causes of communities' vulnerability. The strategy is perhaps the best example to show that the intention is to move from a state of vulnerability to a state of resilience. TURP also plans to reduce the vulnerability of households and communities by enhancing resilience. In this respect, the intention is to transform vulnerable communities into flood-resilient city quarters.

In contrast, the NGOs presented provide comparatively little information on vulnerability. PfR, for its part, has intended to strengthen vulnerable populations by introducing fish-farming and offering a new source of livelihood. World Vision has set itself the goal of lifting the most vulnerable out of poverty and has made building resilience one of its key objectives to achieve this. However, the NGO does not publicly disclose its understanding of vulnerability in its resilience projects. RAI has stated that the NGO particularly supports women from vulnerable social backgrounds where pregnancy rates are higher. In sum, it can be argued that the objectives of resilience projects are not only but also justified by the vulnerability of a given system to certain disasters. The intention is indeed to reduce vulnerability and move from a state of vulnerability to a state of resilience, with both terms functioning as antonyms.

Another profound finding of the conceptual understanding of both terms is that a differentiated understanding of what vulnerability implies is of importance in resilience concepts (cf. BÉNÉ et al. 2012). In this respect, the projects show differences. TURP and FAO deal with this issue most. TURP outlines that there is not much information about how precisely individuals in cities are vulnerable to flooding. Since the objective of the project is to reduce poverty of the most vulnerable, this poses problems. Against this background, TURP has focused particularly on gathering knowledge about who is vulnerable to flooding and how this vulnerability becomes apparent. The project has spent resources to analyse flood-risk areas based on social and financial vulnerabilities of individuals and further conducted two socioeconomic vulnerability studies. In doing so, a closer examination of what is behind the term vulnerability was disclosed and this knowledge shall be used to implement countermeasures, for instance through the provision of CDRRPs. FAO's strategy also points out the importance of identifying the most vulnerable as a precondition to implement resilience measures. The institution refers to the Tanzania Vulnerability Assessment Committee Results 2015, which

outlines how precisely communities in Tanzania are vulnerable concerning food, nutrition and physical health (cf. SADC (ed.) 2015). Based on their results, preference is given to smallholder farmers, women-headed rural households or communities with a high potential for conflict over natural resources. Furthermore, the six geographical target areas (compare figure 10) are identified due to vulnerability to food insecurity and potential for malnutrition. TURP and FAO's strategy are thus definitely examples that show that a profound understanding of vulnerability is the basis for elaborating resilience in the projects.

ECoRAD and PfR have also outlined that they have taken steps to gain a better understanding of what vulnerability means in their specific project context. They have conducted participatory processes to gain a better understanding of the problems and vulnerabilities of local individuals. In this context, it is shown that the differences in vulnerability to droughts can be most clearly demonstrated between pastoralist and (semi-) pastoralist communities. However, ECoRAD critically notes that an even better understanding of vulnerability to droughts is needed, as pastoralists are not homogeneous and neither is their vulnerability. Both ECoRAD and PfR intended to gain knowledge about the vulnerability of individuals, but did not do so comprehensively.

StARCK+ is the only resilience project presented where the objective is not only to get a better understanding about the term, but also to actually implement vulnerability-focused interventions. Although the project does not go into detail here, it is presented that the activities contributing to increased numbers of people able to cope with climate change impacts also spanned "interventions with a vulnerability focus […]. Vulnerability-focused interventions, while not targeted at increasing preparedness or resilience against specific climate hazards, can improve community's capacity to react and adapt to a wide range of stresses brought about by climate change" (DFID (ed.) 2019, p. 13).

Finally, it can be stated that the term vulnerability indeed finds use in the presented resilience concepts. Vulnerability is understood as an antonym of resilience and the intention is to reduce vulnerability by strengthening resilience. However, except for StARCK+, the intention is rather to justify the resilience projects because of communities being vulnerable to certain disasters. Specific vulnerability concepts or measures are hardly ever implemented.

At the same time, the amount of information on how vulnerability is understood varies considerably, with some projects having a deep understanding of the term and others not. Therefore, there is a risk that projects without sufficient understanding of the term unintentionally implement resilience measures that are not at all suitable to reduce vulnerabilities and strengthen livelihoods in a comprehensive manner (cf. PETERSEN 2014, cf. BOUSQUET et al. 2016, cf. MITCHELL 2013). Particularly resilience projects of World Vision, PfR, ECoRAD and RAI do not outline a profound understanding of vulnerability and hence their outcomes have to be treated with caution as to how precisely they are able to reduce vulnerability.

7 Method criticism and limits of the master thesis

The content presented in chapter six is based on a documentary analysis. A major advantage of this method is that the data and material are already available and accordingly only need to be collected, summarised and analysed. However, the informative value of the analysis stands and falls with the information content of the respective resilience concepts of the projects. A brief critical comment on this is made below. This should clarify and make aware of the implicit limitations and possible sources of error of this thesis. Since the projects and NGOs were chosen because of the availability of information, their density in terms of content, the aim to examine different thematic areas and the attempt to include projects from both countries, a critical look is taken at how this has affected the thesis. Subsequently, resulting limitations in terms of content are outlined and it is shown whether some research questions could therefore not be answered adequately.

The general availability of resilience concepts did not pose any problems in this respect. Over the last decade, countless resilience projects have been launched in East Africa and it appears that almost all major development agencies, international institutions and NGOs have at least at some point already dealt with resilience and respective projects. However, whilst there is much general knowledge about resilience projects in East Africa, information tends to be made available to the public in the form of short project descriptions, often on the respective (project) homepages or via downloadable factsheets. The number of detailed available project reports is limited and even these are about projects that are still ongoing or just recently have been completed. Hence, they rather outline how and under which circumstances resilience should be strengthened instead of evaluating project results in a critical manner. Positive outcomes presented should be taken with caution, as they have not necessarily been properly measured or evaluated[12]. At the beginning of the literature and documentary review, many existing projects, documents and information were considered to be much better in terms of content than they eventually turned out to be. Nevertheless, there was still enough information and enough projects to conduct a documentary analysis.

Yet, the prioritisation had to be changed. At first, it was planned to integrate views about resilience from local NGOs. However, it quickly became apparent that their information value was insufficient and that the homepages of the respective NGOs were also characterised by a lack of server availability or virus susceptibility. For these reasons, except for RAI, all the NGOs selected in this thesis are not domestic but global organisations active in East Africa.

The selected resilience projects of development agencies and NGOs differ from each other in terms of content, but all were suitable for making statements on some of the key research questions. Differences arise with regard to the depth of content, as some projects disclose in detail how resilience is to be strengthened, whilst others only provide information in general terms. The criticism of the content of the projects themselves relates more to a lack of self-reflection within the project reports and to the fact that some reports also aim to present themselves in the best light possible. For example, TURP often praises itself in its annual reports and lacks a critical

[12] The question of how to measure resilience concepts is critically discussed in the resilience literature. However, it is not explicitly addressed in this master thesis. In short, the need to evaluate successes of resilience concepts is given because resilience is a process rather than a property of a system. Simply stating that resilience has been strengthened is therefore not enough. Instead, it is necessary to consider and outline how resilience levels vary temporarily and locally, and how feedback dynamics influence a given system. This is usually done through evaluations rather than final project reports (cf. PENDALL et al. 2010, cf. BARRET and UPTON 2018, cf. CONSTAS and BARRETT 2014).

examination of its actual results. In addition, many projects are still in progress, which is why not all measures have been completed yet. This is not only a problem with regard to the lack of evaluations, but also because the content at the beginning of the projects tends to focus on preparatory processes rather than on concrete resilience measures to adapt the respective systems. Consequently, this can lead to a misrepresentation of the understanding of concepts and implementation in East Africa, as focus is too much on preparatory measures.

Concerning the different thematic areas, it is critical to note that the projects were chosen to present the most interesting selection of themes and disasters. However, this does not provide information on the total number of resilience projects against a specific disaster, and so it remains unclear against which shocks resilience concepts are predominantly used in Kenya and Tanzania. A general overview indicates that there are many more resilience concepts against droughts and a few more against floods, and still others that are more concerned with social issues. In both countries, for instance, there are resilience projects to strengthen social capacities, such as the healthcare system, access to education or protection against national and international terrorist threats. However, these were not examined in this paper. The selected resilience projects therefore only represent an excerpt of the overall understanding of resilience in both countries.

Another reason why the respective projects were chosen was the idea of highlighting resilience projects in both Kenya and Tanzania. However, there appear to be many more resilience projects in Kenya and it has proven difficult to find projects in Tanzania that can be summarised and analysed well in terms of content. As for the NGOs, none provided sufficient information value. In hindsight, if one had wanted to evaluate the projects only according to their information content, it might have been better to focus on Kenya alone.

Content limitations of the analysis, in turn, essentially result from the fact that resilience is conceptually very general, as well as projects that only formulate their results in general terms and thus remain superficial. Furthermore, due to the different circumstances in which the projects are embedded and the different measures behind the term, not every project is suitable for adequately answering all the research questions presented in Chapter 1.4. In total, questions about key objectives, potential benefits, subject areas as well as measures can be elaborated through all projects, whereby the concrete information content varies. Statements on the conceptual understanding of resilience and the relationship between resilience and vulnerability, in contrast, are based on only a few projects. Regarding the critical assessment of resilience concepts, depending on the thematic area, some projects can contribute more, some less and some nothing at all to the analysis. However, this is not necessarily a problem because the lack of a certain critical understanding of resilience in a project is still a statement that can be analysed.

The biggest point of criticism in terms of content, which cannot be adequately answered in the analysis, is the lack of elaboration of what is actually meant by the terms household and community. Information can be provided on the temporal and spatial scope of the projects but since the specific interventions are almost exclusively aimed at strengthening resilience at either the household or community level, this ambiguous terminology poses a significant problem. It makes it more difficult to understand why, where, how and for whom resilience concepts were applied at all. This fact complicates the understanding of resilience in East Africa. In future resilience analyses, early attention should be paid to whether detailed information is provided on this.

8 Outlook: Resilience as a new development approach in Kenya and Tanzania

Resilience is the new big thing in development discourses. And at first glance, the term sounds promising. Strengthened resilience enables individuals, households or communities to better prepare for a disaster, mitigate and recover from its direct impacts or even initiate transformation processes. Based on the understanding of resilience in global (development) discourses, resilience can be understood as the ability of a system to withstand and recover from shocks whilst adapting and transforming system structures to better be able to cope with future disasters and long-term stresses. The popularity of the term can also be seen in East Africa where resilience is applied practically in many development projects and is further integrated in national politics. By summarising and analysing resilience projects of development agencies and NGOs, this master thesis has demonstrated a clearer understanding of the term in practical development work in Kenya and Tanzania. Since the occurrence of (natural) disasters has become more probable in East Africa, the concept is seen as having the potential to proactively address associated problems and thus tackle threats and hazards before they become unmanageable.

As promising as resilience concepts may sound in theory, they have yet to prove themselves in practice, as they have only been applied in development cooperation for just under a decade. This thesis has therefore outlined how resilience is understood practically in terms of its basic characteristics, conceptual understanding, measures and potential shortcomings.

It has been shown that resilience projects aim to stabilise a SES against a natural disaster, which can be a drought, a flood or an environmental degradation. At the same time, the intention is to strengthen local communities. Whereas the scope of the projects ranges from a refugee camp to the entire country of Kenya, concrete measures are being implemented locally. Furthermore, the presented resilience projects are designed to last between three and nine years.

Another finding of this thesis is that the conceptual understanding of resilience in development discourses is reflected in practical projects. Resilience projects intend to enhance absorptive, adaptive and transformative capacities of households or communities. In this regard, measures are aimed at positively impacting the environment, the economy, the society as well as local institutions. Notably, measures for the environment and the economy are paramount whilst social measures are less important in comparison. Institutional measures are due to low local governance capacities of state authorities.

In this context, measures to strengthen absorptive capacities refer to making the economy more robust, preserving and protecting the environment as well as training state authorities on how to cope with shocks. Adaptive capacities are strengthened by making the economy more diverse, restoring degraded ecosystems and raising local awareness against future shocks. Lastly, transformative capacities are to be strengthened by educating locals (especially youth) about the need for fundamental and long-term changes within their community as well as adjusting local governance structures and plans.

Another point addressed in this thesis is a critical assessment of potential shortcomings of resilience concepts. The question of whether resilience concepts are suitable for addressing and reducing poverty-related issues appropriately and in the long term depends on whether these are also reflected in practical development projects. It has been shown that many resilience projects in Kenya and Tanzania are indeed characterised by potential weaknesses, as they, for example, transfer responsibility to locals, reinforce neoliberal ideologies or neglect the importance of social

power relations. The latter point is also reflected by the fact that a profound understanding of what makes a community vulnerable to certain disasters is usually not comprehensively addressed in the resilience projects presented in East Africa.

This thesis was conducted against the background of discussing whether resilience is indeed the promising concept it is thought to be in the wake of increasing disaster risk. It has been demonstrated that the concept sounds promising because there is a need to proactively address natural disasters in the field of development. Resilience concepts contribute to this by reinforcing the importance of environmental factors in development discourses. As societies in East Africa are increasingly affected by crises and their consequences, the resilience approach offers a new way to address the accompanying uncertainties and threats. It is based on a wide range of measures to cope with disasters that would otherwise have severe and long-lasting consequences. As a holistic approach, resilience takes into account not only the disaster itself, but also social, economic and environmental consequences. If this holistic approach proves successful and practicable in the long term, resilience projects can indeed offer a new and innovative approach to development work.

However, the current perception of resilience as a panacea against all kinds of threats and disasters should be treated with caution, as a critical understanding of the term is necessary to avoid possible shortcomings. In line with the projects presented, resilience shifts development discourses towards the environment and the economy. There are concerns that social measures and a profound understanding of underlying social structures will be neglected. This can lead to the implementation of measures that increase resilience but do not significantly change livelihoods or advance poverty reduction.

In general, a key to demonstrating the potential of resilience projects in practice are evaluations. As many projects are still ongoing, these have not yet been carried out in many cases, which is why more qualitative statements on the understanding of resilience in practice will presumably be made in the coming years. However, these evaluations should not only analyse resilience in terms of the extent to which measures strengthen systems against disasters, but also in terms of their impact on social change, power relations and resource allocations. Before this is not conclusively elaborated, resilience should not be perceived as a fresh and sophisticated development concept. Yet, if these evaluations conclude that resilience projects have predominantly successful and long-lasting impacts and take into account the potential shortcomings presented, it may be that resilience ends up being an approach capable of tackling development issues anew. Alternatively, if evaluations conclude that resilience concepts fall short of actually providing practical approaches to coping with disasters and strengthening livelihoods comprehensively, resilience could end up as another buzzword or even failed approach in the field of development.

Finally, the examination and analysis carried out in this master thesis has shown that resilience projects are indeed perceived and implemented as a new approach to address disaster risk in Kenya and Tanzania. Next to development agencies and NGOs, national governments also use the term in development plans as a target figure against climate change impacts. Behind the term is the hope of proactively reducing the impacts of natural disasters. As East Africa is vulnerable to natural disasters, the term promises solutions to some of the most urgent and problematic issues in the region. The thesis has demonstrated that whilst the basic idea behind resilience is certainly interesting and valid, resilience projects should not be implemented in practice without an analysis that takes into account potential shortcomings.

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Declaration of Academic Integrity

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