



KERE RESILIENCE PLAN OF THE ANDROY REGION, MADAGASCAR

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HUMAN SCIENCE

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GLOSSARY

AGR	Income Generating Activities
PSP	the participatory scenario planning
PRR	Recovery and Resilience Plan
PDR	Regional Development Plan
BNGRC	National Bureau of Disaster and Risk Management
CPGU	Cellule de Prévention et Gestion des Urgences
IGOs	Intergovernmental Organizations
NGOs	Non-government Organizations
JICA	Japan International Cooperation Agency
UNDP	United Nations Development Program
CDRF	Community Disaster Resilience Framework
WASH	Water, Sanitation and Hygiene
STEEP	Social, Technological, Ecological, Economic, Political
SWOT	Strength, Weakness, Opportunity, Threats
CIKR	Critical Infrastructures and Key-Resources
BIANCO	National Bureau of Anti-Corruption
SIDGS	Integrated Strategies for the Development of the Grand South
GRET	Groupe de Recherche et d'Echanges Technologiques
ADRA	Adventist Development and Relief Agency
CRS	Catholic Relief Services
AES	Water Supply for the South
FID	Intervention Fund for Development
FDA	Agriculture Development Fund
USAID	the United States Agency for International Development
ECHO	the European Commission Humanitarian Aid
OCHA	the Office for the Coordination of Humanitarian Affairs
FAO	the Food and Agriculture Organization
ONN	National Nutrition Office
WHO	the World Health Organization?
UNICEF	the United Nations Children's Fund
PTF	Technical and Financial Partners
WB	the World Bank
GELOSE	Gestion LOcale SÉcurisée
WWF	World Wildlife Fund

ANGAP	Madagascar National Parks
WHH	Welthungerhilfe
WFP	World Food Program
IFVM	Anti-Locust Agency
IDPs	Internally Displaced People
CRIC	Comité de Réflexion des Intervenants en Catastrophe
IOM	the United Nations Office of Migration

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EXECUTIVE SUMMARY

Hazards as a peripheral and incidental element of the complex human-natural systems have caused disastrous challenges to humans since the beginning of time, but thanks to their survival capability, people have been able to overcome these hardships. During recent decades, however, the increased frequency of anthropogenic hazards has made the consequences of disasters more pronounced, leading to an increase in loss of lives, livelihoods, and biodiversity. This persistence of loss and the ever-increasing threat of more pronounced and complex disasters prompted a paradigm shift from the traditional mitigation-response-prevention model to a more self-sustained people-centred approach the disaster resilience (Manyena, 2006; Davoudi et al., 2012).

The disaster resilience paradigm has gained prominence since the start of the 21st Century. With central foci on enhancing capabilities of communities to cope well with disasters, it seeks to stimulate new thinking that focuses more on resources, adaptive capacity, and systems for self-sustenance. It seeks to enhance people's existing survival capability so they can overcome disastrous events and "bounce back better" from their impacts without a reliance on help from the outside world. This resilience plan seeks to build a set of capacities that enable the Androy Region to cope well and bounce forward from the *Kere*.

The *Kere* is a recurrent complex starvation phenomenon that claims thousands of lives per of year of occurrence. Affecting the southernmost area of Madagascar, it traps the entire subregion, including the Androy Region, in an entrenched state of poverty. The INSTAT (2014b:209) has classified ≈97% of the region's population as "very poor". In recent decades, local national media broadcasts have consistently depicted horrifying images of starved individuals and alarming reports of *Kere* casualties. Cognizant of the significance of relief aid to *Kere* survivors, this Plan is built upon the "New Way of Working"¹, whereby development and emergency response complement one another. It provides strategic and operational guidance to counter, remove and reduce *Kere* root causes with developmental endeavours. Because resilience of the "community as a whole" (the region) is a set of

¹ <https://www.un.org/jsc/content/new-way-working>

capacities, resources and systems, and the *Kere* is a dynamic socioecological disaster, resilience endeavours are informed by a collective insight into future *Kere* events through participatory scenario planning.

The participatory scenario planning engaged the research-planner, the community and stakeholders (government and non-government) in a collaborative transdisciplinary workshop to generate a strategic plan that envisions multiple plausible scenarios of future *Kere* events. Considering the Androy Region as an open system exposed to an environment that is vulnerable, uncertain, complex and ambiguous, the process examined internal and external parameters that can prompt *Kere* related uncertainties. This process engendered four plausible *Kere* scenarios: the Asarabe, the Faosa, the Maty ty O'ndaty, and the Sakave. Each of these *Kere* scenarios is tied to sets of key activities that, if properly implemented, can trigger transformational change that would reduce the likelihood of the foresighted *Kere* event. The strategic operation plan exhibits detailed interventions aimed toward building the resilience of the Androy Region.

WORDS OF THE GOVERNOR OF THE ATSIMO-ANDREFANA REGION

The Region of the Androy is committed to enhancing the resilience of all our community

through our Regional Development Plan, which outlays our long-term vision to end the suffering from the *Kere* by creating a livable and prosperous Androy.

One of the key strategic objectives of our Development Plan is to create an inclusive, safe and connected community, which the regional resilience plan will play an integral role in achieving. This Plan provides the Region and our partners a developmental roadmap to a resilience pathway over the next 10 years. This plan also identifies key issues and priorities, while endeavouring on the huge developmental tasks ahead of us.

Through the regional *Kere* resilience plan, we will work with our partners and the community to make the Androy a region where every citizen can prepare and respond to the *voy Kere* regardless of outside help; to become a more resilient region that enables individuals, families, *tariha* and *raza* to recover more quickly and with greater strength when faced with *Kere* related hardship.

The Governor

SECTION 1: THE BASIC PLAN

1.1 INTRODUCTION

The *Kere* is a catastrophic phenomenon that has been affecting the Deep South (the Grand South) since 1929. Traditionally perceived as a drought induced food crisis, it is, according to Ralaingita et al. (2022), the compounded effects of multiple socioecological factors. These include, but are not limited to: desertification, El Niño effects, drought, poor governance, inaccessibility, poverty and insecurity. The anatomy of the *Kere* discussed by Ralaingita et al. (2022) discloses a complex causation of interacting parameters whereby humans are both catalyst and victim. Dynamic and multifarious, each *Kere* event differs in trigger factor, scope and intensity mostly, workshop participants identify crop failure as the common cause. When the *Kere* occurs, population and animals are exposed to thirst, hunger, illnesses, and violence wherefrom scores perished but also many survive. That is, those with higher *fiohira* (resilience) survive while those with lower resilience perish. Resilience thus refers to ways by which people survive and overcome the *Kere*. This plan is built upon these aptitudes that people of the Androy Region exhibit to cope with and survive the *Kere*.

Disaster resilience is the approach that seeks to empower the community to recover and become self-reliant in the face of adversities. Traditionally, disaster resilience is a risk-based approach. That is, to achieve resilience through mitigation and reduction of risks posed by specifically known hazards e.g. cyclone and drought (Folke et al., 2010; Cavallo, 2017). From a resilience thinking paradigm, this type of approach is termed as “the specified resilience approach” as it deals with the resilience "of what, to what" (Folke et al., 2010; Berkes and Ross, 2013).

Difficulty emerges when unknown or novel-hazardous risks emerge (e.g. COVID-19).

Complementary to this positivist-reductionist attitude is the all-hazards approach to resilience the general resilience.

Unlike specified resilience approach that centers (emergency) interventions and plans on disaster risks based on threats and risks assessment, general resilience does not specify hazard risks. It is

based on the thinking that the community is a complex system that constantly adapts to its environment regardless of disturbances. It is a collective behavioural and a processual ability that allows the region's inhabitants to bounce back or to bounce forward from disturbances (Paton and Johnston 2017:124). Fundamentally, it's the inherent characteristic that drives people's determination to life. This characteristic encapsulates competency or capacity to absorb, to adapt and to transform from disturbances which can be enhanced and empowered with a well-thought out futurist scientific approach involving victims and concerned stakeholders (Dos Santos and Partidário, 2011) the participatory scenario planning (PSP).

The PSP simultaneously engages the *Kere* victims with exogenous actors to explore and scan key uncertainties that may shape the future (Goodspeed, 2020:21) of the Androy region regarding the *Kere*. The recurring *Kere* has led to loss of countless lives and entrapment of the entire population of the region to an entrenched poverty (PRR BNGRC, 2016). Whilst this ongoing situation presents a pressing challenge to both the community and government, it also offers opportunities whereby decades of *Kere* experience incubates knowledge. The PSP captures these knowledges, through which innovation emerges and resilience building efforts can begin. This community-centered process establishes the foundation of this plan. It aims to solve a protracted problem with the full participation of the *Kere* victims, the government, and non-government entity. Best-suited for a well-defined open community boundary (the Androy Region's administrative boundary) that possesses certain level of power agency and autonomy, the PSP engenders a resilience plan tailored to the Androy Region.

1.2 THE REGIONAL GOVERNORATE OF ANDROY

The Androy Region is the southernmost administrative governorate of Madagascar. It covers an area of $\approx 20,000$ km², with a population of $\approx 906,000$ with a population growth rate of 2.7% (Androy PDR, nd). Sandwiched between the Atsimo-Andrefana and the Anosy Regions, it is a tribal territory of the N'tandroy ethnic group, but also home to other minority groups e.g. Mahafale, Antanosy and mixed (LAS FEWS NET, 2017). With the capital city of Ambovombe,

it has four administrative districts namely Ambovombe, Bekily, Beloha and Tsihombe, contains 51 communes and ≈ 881 fokontany (wards). The Androy is a semiarid land with an average annual rainfall of ≈ 400 mm unevenly distributed across subregions and throughout the year. The three main rivers (Manambovo, Menarandra, Mandrere) remain dry for much of the year. The water table in the sandy calcareous north is at ≈ 90 metres and at ≈ 200 metres in the crystalline south (JICA, Final Report, 2006:7-5). The region is permanently under the Tsiokatimo (trade wind) which is a strong, dry, dusty winds that affects mostly the littoral south.

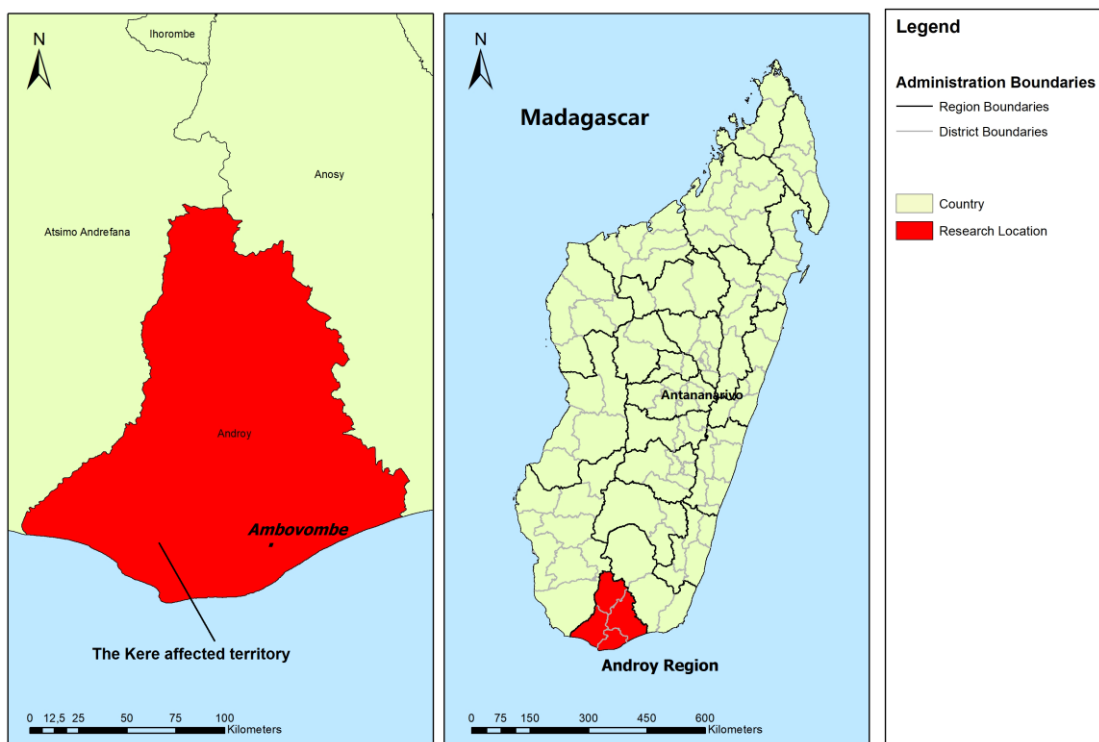


Figure 1 - Map of the Androy Region

1.3 OBJECTIVES

The Plan aims to provide a roadmap to building the resilience of the Androy Region to the *Voy² Kere*. Building resilience means intentionally guiding the Region system’s process of preserving functionality and enhancing livelihood quality, while retaining the essence of the Androy identity. It posits on three core objectives:

² Disaster

- To enable and enhance the Region’s institutional capacity to meet challenges posed by the recurring *Kere*;
- To strengthen the capacity of the fokonolo (community of people) to absorb *Kere* hardship, to adapt to the evolving *Kere* and to smoothly transform when the situation is untenable.
- To eliminate and reduce underlying factors that stimulate the *Kere*.

N.B: Because the *Kere* is a dynamic phenomenon, adaptive response to it is an ongoing process.

Thus, building the resilience to the *Kere* is a continual process.

UNDRR defines Capacity as: *the combination of all the strengths, attributes and resources available within an organization, community or society to manage and reduce disaster risks and strengthen resilience. It may include infrastructure, institutions, human knowledge and skills, and collective attributes such as social relationships, leadership and management*

(<https://www.undrr.org/terminology/capacity>).

1.3.1 PLAN ACTIVATION

This regional resilience plan is neither a crisis management plan nor an emergency operation plan, but more of a proactive preventive plan. Its activation is triggered by its approval, allowing for immediate commencement. The plan contains four scenario-contingent strategic actions and a set of ConOps strategic interventions. While the scenario-contingent strategic actions nullify and reduce the likelihood of occurrence of the identified *Kere*, ConOps strategic interventions would eliminate all forms of future *Kere*. Therefore, the implementation of the ConOps strategic interventions is highly recommended. However, the manner of intervention is better left to the discretion of the Androy *Kere* resilience authorities.

1.3.2 LEGISLATIVE AND STRATEGIC FRAMEWORKS

This plan, although constructed with the contribution of *Kere* survivors, government agencies and non-government stakeholders, takes on account existing government policies and the legislations relevant to the *Kere* as presented in Table 1.

Table 1 - Link between Existing Legislations and Policies with the Kere Resilience Plan

Policies and legislation	Specific Mentions	Kere Implication
The National Disaster Management Act Loi n°2015-031 ()	Establishing the nation polity in disaster management	Disaster risk reduction and crisis management
Decree N° 2019-1958 Ministry of Interior Affairs National Bureau of Disaster Risks and Catastrophes (The BNGRC)	Presidential Decree on re-engineering of attributions and organization of Government disaster management agencies	Coordination and emergency management
The National Plan for Desertification and Drought (Madagascar – Government, 2008)	Ministry of Environment 2008-2018	Section 5. Aligned National Plan Categorized under Priority Funding Zone
National Strategy of Disaster Management 2016-2030	National Strategic Policies the CPGU, the BNGRC (Madagascar – Government, 2016)	National strategies on disaster Risk management and crisis management
Recovery and Resilience Plan for El Niño induced Drought in the Deep South, Madagascar (PRR UNDP BNGRC, 2016)	The BNGRC and the UNDP Madagascar; Identification of El Niño impacted and underlying famine risks; contains strategic-actions – 2016	Targeting 7 districts <i>Kere</i> Hot-Spot. Ampanihy, Betioky for Atsimo-Andreana Region; Ambovombe, Bekily, Tsihombe, Beloha for Androy Region; district of Amboasary for Anosy Region
Stratégie intégrée de développement du Grand Sud de Madagascar	Informed by the PRR; General overview of the poverty in the Deep South; strategic vision for the emergence of the region	Multisectoral developmental programs; identifies and acknowledges protracted poverty issues
Plan Régional de Développement de la Région Androy	Set forth regional development challenges and area of priorities	Identifies multisector regional poverty reduction endeavours

1.4 THE CONCEPTUAL FRAMEWORK

This resilience plan is influenced by the resilience thinking paradigm. Resilience thinking concerns the dynamic and complex interaction between people and nature to form the socioecological systems (SESs) (Walker and Salt, 2006:14). It explores ways these interactions can be understood and managed in the face of disturbances such as the *Kere* (Folk et al., 2010). Resilience is the behaviour that enables the SESs, be it individuals, groups or the region, to deal

with the vulnerable, uncertain, complex and ambiguous (VUCA)³ environment it belongs to and depends on (Walker and Salt 2006:11). In dealing with the VUCA environment, the region learns to cope with and persist, incrementally adapt, or transform to a new functional structure should the situation becomes untenable (Ralaingita et al., in revision). Because of the dynamic change caused by the VUCA to the SESs, parts (humans and animals) may fail to cope and survive due to their *marefo* and *boroka* (fragile) state of the vulnerability (Walker, 2020). While vulnerability is the exposure of the community to potential harms and losses caused by the *Kere*, resilience reflects their capacity to persist and recover from it. Conventionally, vulnerability is expressed as the function of risk and hazard but, this research planning perceived it as the inverse of resilience (Kasperson and Kasperson, 2005; Manyena, 2006; Lei et al., 2014; Bahadur and Tanner, 2014). Simply put, when the region of the Androy loses resilience; it becomes vulnerable to the *Kere*. Inversely, the *Kere* occurs because the region is vulnerable.

This *Kere* resilience plan is constructed upon the conceptual framework based on the disaster resilience framework proposed by McAslan (2011) and operationalized with the 3D resilience framework introduced by Béné et al. (2011, 2016) as shown in Figure 2. The framework builds upon three community capitals called resilience enablers: institutional/procedural, social and physical as shown in Figure 2. It hypothesizes that community resilience can be built through enhancing of these three enabling capitals (Ibid). Each enabler has a set of attributes as follow:

- *Physical enablers*: comprised of the improvement of the critical infrastructures and key resources (CIKR) within the community boundary, e.g., roads, WASH, IT utilities, food and health. These enables are enhancing to improve community's absorbency, adaptive and transformative capacity.
- *Institutional/Procedural enablers*: instrumental in creating a *Kere* specified management institution/program; to plan and coordinate program interventions: e.g., emergencies, risk

³ <https://www.vuca-world.org>

reduction programs and people-centric Early Warning System (EWS). These enablers are enhanced to improve community's absorbency, adaptive and transformative capacity.

- *Social enablers*: focused on building the community's social capital (through community engagement in bridging and linking) and enabling social change via enhancing of education, modernizing of agriculture, re-alignment of the Dina for collective good e.g. management of natural resources and social security. These enablers are enhanced to improve community's absorbency, adaptive and transformative capacity.
- *Disaster Resilience sustained outcomes*: physical lifelines support improved livelihood, easy flow of goods and information; procedural/institutional systems support the flow of information, coordination of developmental effort, response operations and acquisition resources; and social systems support the community's collective engagement. Synergic achievement of these key components enhances people's absorptive, adaptive, and transformative capacities, leading to a sustained collective resilience pathway as shown in Figure 2.

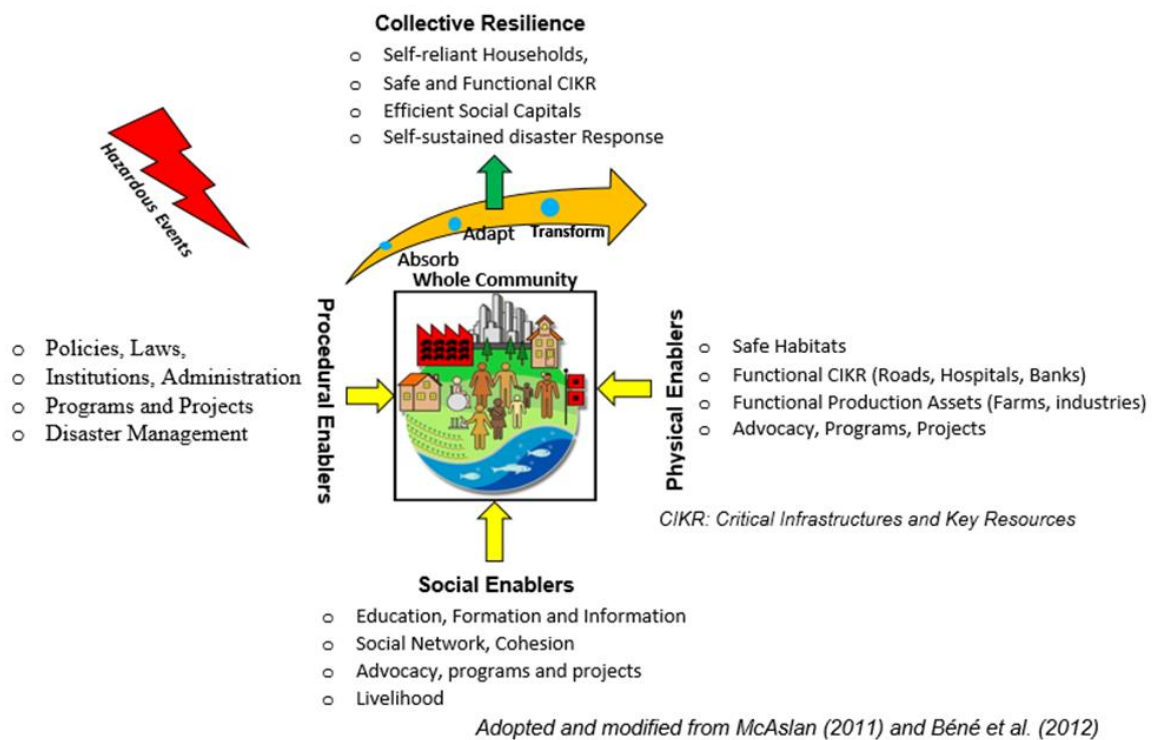


Figure 2 - Conceptual Framework for Community Kere Resilience Building

1.5 THE RESILIENCE PLAN

This Plan aims to provide the Androy Region with an operational capability to handle the *Kere* and related developmental challenges. This will reduce the pressure put on the central government and relax the region's almost total dependency on outside aid. It will improve the region's capacity to empower its population to be self-reliant in the face of the recurring *Kere*, by focusing on building and promoting resilience. It seeks to break the everlasting status quo that retains the region in the eternal cycle of collapse-recovery. In short, it presents a framework that helps to build a regional system that can “withstand” the *Kere*.

This plan, which is a live document, can be embedded within a larger plan (i.e. a developmental program) and can also be incorporated into a tactical specified operations strategy.

It provides an overarching strategic framework of operations that includes institutional, social and physical resilience enablers, encompassing disaster risk reduction and management, social capital enhancement and lifeline capabilities. It sets specific objectives to be achieved in order to counter the root cause and progression of the *Kere* hereinabove emphasized.

It seeks to provide a community- and problem-based framework of cooperation and companionship between the community, regional governorate and technical and financial partners which have proven vital in saving lives and reducing the impact of the *Kere* to the population of the Androy. That is, it establishes a working structure of collaboration towards a set of shared goals and achievable objectives.

This Plan will guide the development of new Androy regional policies, strategies, intervention programs, services and advocacy campaigns that promote regional resilience. Where these already exist, this Plan will provide the guidance to further strengthen and support their outcomes.

This Plan was developed with the full participation of the people of the Androy and key stakeholders (regional government, IGOs, NGOs). Also, significant research, resources and

engagement were committed to ensure that it responds to the needs and aspirations of the community and reflects both regional and central government priorities, while applying the best practice.

This Plan is not an emergency plan, but it does contain emergency response and humanitarian interventions. This is a resilience plan that encompasses the dichotomy between humanitarian and development efforts (termed by the United Nations Agency as the New Way of Working <https://www.un.org/jsc/content/new-way-working>) and brings together all sectors with a direct or indirect link to the *Kere* for a common goal building the resilience of the Androy Region to the *Kere*.

1.5.1 WHAT DOES A RESILIENT REGION LOOK LIKE?

In consideration of the context of the Androy Region, this plan indicates that the following basic characteristics can reflect a resilient region:

- Effective governance and decentralized institutions: politically stable (diverse and inclusive); able to support developmental programs; adequate resources; in touch with local realities; should facilitate region-wide learning; possess *Kere* response capability; protect citizens from hazards and engage in crisis management and risk reduction; own and enforce adequate public policies that are able fulfil their role/responsibilities in terms of governance and administration in general regardless of adversity (Twigg, 2007)
- Enhanced social capital: involve local knowledge in any developmental programs; harmonize community's ownership of natural resources; communities have a voice in *Kere* relevant policy processes; heightened community cohesion; improve public awareness and education system; self-reliant and able to recover from disaster shocks and stresses with little outside intervention (Bahadur et al., 2010; Béné et al. 2012)
- Functional critical infrastructures and key-resources (CIKR): possess reliable supporting lifelines: roads, bridges, banks, gas stations, and IT; enjoy public safety

and protection; efficient structural and non-structural measures mitigation policies; compliance of public buildings and infrastructure with codes and standards; redundant with functional management ability, maintenance and ample supplies of strategic needs (www.fema.gov)

1.5.2 LINKAGE WITH THE NATIONAL AND REGIONAL POLICIES AND STRATEGIES:

This Plan takes on account elements that are presented in the SIDGS (Integrated Strategies for the Development of the Grand South, nd), the Recovery and Resilience Plan (PRR, BNGRC-PNUD, 2016), the Regional Development Plan of the Androy (PRD, 2018) and the National Contingency Plan Food Insecurity and Nutritional in the Grand South 2013-15 (IASC – BNGRC, 2015) as shown in Table 2.

Table 2 - Link between Kere Resilience Plan and the Androy PRD and the PRR

2. Strategic Orientation of the PRD Androy (P77) (Regional Development Plan, 2018)	The Kere Regional Resilience Plan Identified Actions
To improve access and sustainable economic development	end the regional isolation with road construction; modernize the existing archaic pastoral practice
Improve access to water for human, animal and agriculture	Re-invigoration of the hydraulic infrastructure and water
Protection and Conservation of the Environment	Regional reforestation and ecological protection; “living in harmony” with the natural resources.
Instauration of a good governance environment, protection of lives and properties as condition for a social and economic development	the opening of a regional office of the BIANCO (anti-corruption agency) to deal with regional corruption; application of a law adapted Dina for insecurity.
Consideration of sociocultural factors as an inhibitor or promoter of development	to inform cultural value and believe as a development asset not a strain.
Facilitate access to production assets (finances, land, economic infrastructure, energy etc.)	Advocate for the increase of fiduciary services (i.e. bank and credits);
Empowering of human capital through transfer of competence (formation, technical training etc.)	Promote vocational training.
Recovery and Resilience Plan 2016 for Drought Induced El Niño in the Grand South of	Identified Action the Kere Regional Resilience Plan

Madagascar (PRR 2016)	
2.4.1 Drought Recovery and Environmental Degradation	
1. Rebuild of Wells and Forage	Coordination of water acquisition and supply with the AES (Water Agency)
2. Rebuild of hydraulic infrastructures (dams, dykes, irrigation...)	Advocate for the construction of standardized hydraulic infrastructure e.g., impluvium, aqueducts, water pipelines, irrigation systems...
3. Forest Conservation	Community raising-awareness in “living in harmony” with the natural resources (fauna and flora); Utilize the Dina as an efficient tool to preserve the unique fauna and flora of the Androy.
2.4.2 Economic Recovery and Reduction of Structural Vulnerability	
1. Support to farmers and fisherman: training, provision of materials etc.; Livelihood Diversification and provision of seeds etc.	Promote the diversification of livelihood to include: <ul style="list-style-type: none"> • Shift to sea fishing. • Agriculture industry e.g., castor, cacti and Jatropha seed oils.
2. Contribute to job creation and better working conditions	Promotion of entrepreneurship and farmers’ cooperative in cooperation with the Ministry of Population and FID, FDA (Fiavota Project);
3. Promote the creation of AGR.	Promote entrepreneurship, credit and small loans e.g., Fiavota Project; Introduction and vulgarization of climate resistant seeds and market garden for cash and catch crops.
2.4.3 Institutional and Sociocultural Recovery	
1. Institution Capacity Building at Regional, districts, and communes’ levels	Incentivize skilled workers to work in Androy Region; Promote vocational technical training.
2. Sensitization for behavioral change, beliefs, traditions that promote or impede development.	To inform cultural values and beliefs as a development asset, not a hindrance
3. Strengthen the security at Districts and Communes levels	Promote the utilization of the Dina (traditional customary law) as a tool to: <p>Restore and preserve social order.</p> <p>Upgrade the role of local vigilante groups (Kalony and Jado).</p> <p>Advocate for the creation of advanced military posts with adequate resources (human and materials) in dahalo hot spots;</p>
4. Strengthen and revise the application of the Dina	Amelioration and application of Dina on the issue of insecurity fokonolo (community of people), Ministry Justice, Ministry of Interior, Regional Justice, EmoReg (regional security authorities)
The SIDGS	The Kere Regional Resilience Plan

3.3. Strategic Interventions	Identified Action the <i>Kere</i> Regional Resilience Plan
Axe 1: Infrastructures as the Engine of the Integrated Economic development: roads, Energy, Water	Advocate for the construction of national road to end the region’s isolation; Re-invigoration of the hydraulic infrastructure and water provision for sustainability;
Axe 2: Diversification and boost to Productive Sectors: Agriculture, animal breeding, and Mining	Promotion of modern agro pastoralism (capacity building); Promote diversification of livelihood
Axe 3: Governance, Security and Culture	Empower and enable the regional governorate to be self-sustained and self-reliant decentralization; To promote peace, social harmony and mutual support; To sensitize how traditions and customs inhibit development;
Axe 4: Human Capital: Education, Health, Protection and Social	Advocate for the strengthen of the education system; Advocate for the supply of necessary materials to Health centers implementation of advanced health post creation of mobile medical team;
Axe 5: Environment Preservation, Climate Change adaptation and Disaster Risk Resilience	Community raising-awareness in “living in harmony” with the natural resources (fauna and flora); Utilize the Dina as an efficient tool to preserve the unique fauna and flora of the Androy;
Axe 6: Humanitarian Intervention	Creation of an anti- <i>Kere</i> institution in the Androy Region pending of the level of decentralization; Renders the BNGRC sub-office of Ambovombe operational with adequate resources (human, technique, finance, materials) and power to do so; Creation and mobilization of <i>Kere</i> response volunteer group;

1.6 METHOD THE PARTICIPATORY SCENARIO PLANNING (PSP)

The PSP is the method utilized for this planning endeavour. It helps identify strategic actions based on scenarios of plausible future threats of the *Kere* to Androy Region. The PSP process requires participation by heterogeneous representatives of *Kere* survivors, government and non-government stakeholders (Rawluk et al. 2018). It engages participants in a social and mutual learning mode to discuss community mechanisms of resilience to the *Kere*, a better and more efficient way to deal with it and attempts to generate action-oriented strategic policy construction from scenarios of possible future *Kere* events (Otero-rozas, 2015; Cronwall & Jewkes, 1995). It results in two faceted outcomes. First, transdisciplinary multiple learning outcomes (Chermack

2011:35); for example, while reflecting on and learning from their socio-ecology dynamics, participants foster relational and social bonds among themselves and learn by being part of the planning process (ibid). Second, the scenario planning process enables collective reflection (Lindgren and Bandhold, 2009:35), discussion and identification of future risks associated with *Kere*, its dynamic, and identification of appropriate resilient strategic measures.

A three-day public planning workshop was held at the sub-office of the BNRGC in Ambovombe, Androy from October 27, to 29, 2019 (Figure 3). 21 participants represented the community, regional government (e.g. Environment, Agriculture, AES, Gendarmerie, Health, Population), and non-government (IGOs and NGOs) stakeholders. Participants discussed the answers of the key questions of “what could happen”, “what if” and “so what” to the Androy Region regarding future *Kere* events. “What next” determines potential risks that lurk in the future regarding the *Kere*. The “what if” fleshes out possible scenarios for analysis with an aim to generate actionable strategies. The “so what” reveals the necessary priorities, procedures and operations to each scenario-based action-plan.

N.B: Scenarios emerged from hours of methodological trial. They are the speculation of the spectrum of plausible, possible and preposterous futures of the Androy, vis-a-vis the *Kere*.



Figure 3: Scenario Planning Workshop in Ambovombe, Androy

1.6.1 OPERATIONALIZING THE PSP

1.6.1.1 The Breathing-In

The process begins with the “breathing in” that familiarizes the workshop participants with PSP conceptual approach and stimulates their strategic futuristic thinking. It consists of analysing the VUCA environment of the Androy Region from within and without. The analysis of the internal environment of the Androy region was done utilizing the SWOT method (strength, weakness, opportunity, threats) while the external analysis utilized the STEEP technique (social, technological, ecology, economic, political).

1.6.1.2 The Internal Analysis

This is the process of understanding the internal strength and weakness of the Androy Region regarding the *Kere*. The SWOT tool helps to examine “things” that enable or inhibit the resilience of the community of the Androy to the *Kere*. The simplified outcomes of the SWOT analysis are presented in Figure 4.

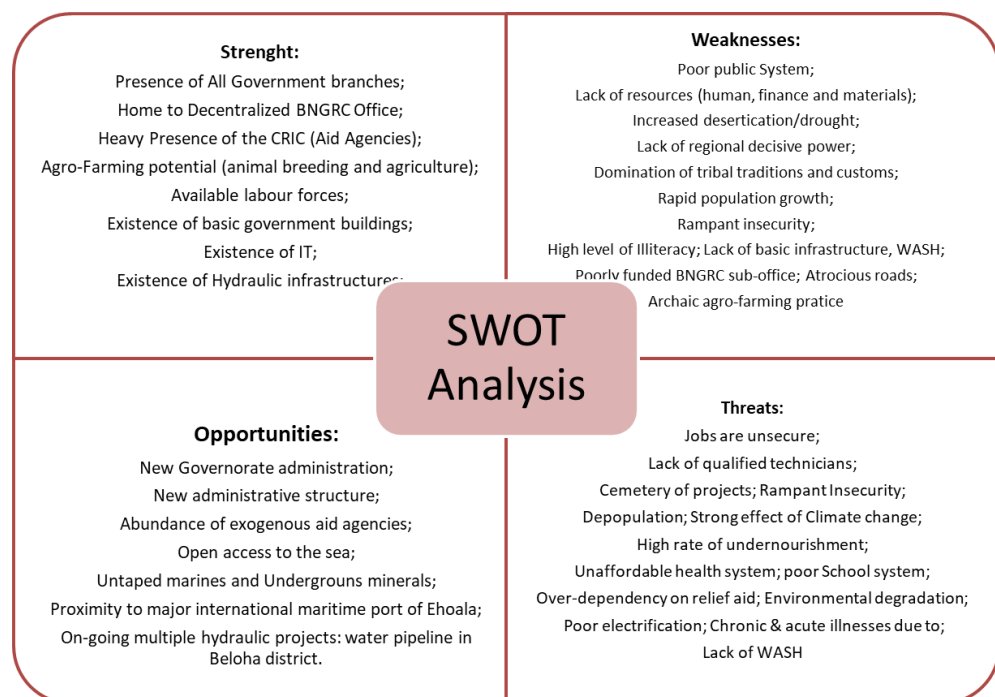


Figure 4 - Androy Region SWOT Analysis

1.6.1.3 The External Analysis

The STEEP Analysis tool is a framework to gauge how the external environment will impact the community (Chermack, 2011:103). It examines the impact of new developments on a community from five perspectives – Social, Technological, Ecological, Economic, and Political.

The process begins with the determination of the time-horizon (Lindgren and Bandhold, 2009:57; Chermack, 2011:90). Because scenario planning is a futuristic thinking, participants were challenged to determine how far into the future *Kere* scenarios will reach. After debates, projected estimates for time-horizons of twenty-five, twenty, fifteen, ten, seven, five, and three years were proposed, followed by a voting process. The voting process resulted in the time-horizon of ten years claiming the most votes. The next step articulates and validates the focal question of the PSP, via examination of underpinning issues pertaining to the *Kere* in the Androy:

In consideration of social, technological, economic, environmental, and political (STEEP) forces, what are factors (risks/threats) that are likely to drive change in the next 10 years to promote the ?

A sample of identified STEEP Forces are presented in Table 2.

Table 3 - Androy Region STEEP Forces Analysis

Social Forces	Technological Forces	Economic Forces	Ecologic Forces	Political Forces
<ul style="list-style-type: none"> • Rapid population growth • More youth in errand • Increased lawlessness and Insecurity • Lack of saving skills • Loss of tribal culture and values • Resistance to developmental change • School depopulation 	<ul style="list-style-type: none"> • Agriculture will remain archaic • Wireless Technology may improve agriculture • Dahalo will communicate with cell phones • Lack of basic infrastructures will continue: no road, no hydraulic utilities and health centres, schools • More projects will be buried in the Androy Cemetery of Projects 	<ul style="list-style-type: none"> • No-more zebu-cattle left • Decrease of households' incomes • High inflation • Absolute misery • Poor administration and pitiful regional economy • Drop in crop productivity • Foreign aid will destroy local market • Difficult flow of gods and products 	<ul style="list-style-type: none"> • Increase of anthropic pressure on natural system (bush fires, charcoal, cooking, and black coral-reef) • Increased illegal harvesting, trafficking and smuggling of rare fauna and floras • Continual non application of environmental protection regulations 	<ul style="list-style-type: none"> • Occurrence of major political unrests • More pronounced local power Struggle • Disintegration of social fabric • Blockage of exogenous aid (political manipulation) • Proliferation of Corruption (political implication) • Continuation of absolute political centralism

<ul style="list-style-type: none"> • Dependency on foreign food aid will further hike social idleness and laziness • More become undernourished 	•	<ul style="list-style-type: none"> • Continuous over-spending on havoria (traditional ceremony) • 	<ul style="list-style-type: none"> • Rapid formation of sand-dune and silting up of crop fields • More severe desertification/drought • Increased effects of El Niño 	
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1.7 SCENARIO DEVELOPMENT “WHAT COULD HAPPEN?”

This step is the most crucial and versatile part of the PSP process. It prioritizes examination and analysis of identified driving forces. Driving forces are predictable VUCA parameters that do not depend on any chain of events (Schwartz, 1991). The process brings together the data from the SWOT Analysis and the STEEP Forces. They were then discussed one-by-one to gauge the level of implication and susceptibility to drive change that may influence the formation and occurrence of future *Kere* in the next ten years. For instance, participants talked about the plundering of the Tangoaraky (black coral reef) during the *Kere* of 2014 and theorized that if nothing is done to change joblessness among the youth in the next ten years, such a situation will reoccur with poachers furnished with more advanced equipment nothing will be left under the sea with the ecological consequences⁴. After hours of debates, participants presented their resolutions which contains five driving forces: *severe desertification-drought, rampant insecurity, rapid population growth, the archaic nature of agricultural practices and a lack of knowledge on food conservation and transformative techniques.*

N.B: in the Antandroy dialect, both terms desertification and drought translate into *maintane* hence, the use of the combined terms: desertification-drought.

1.7.1 TREND ANALYSIS

The 5 identified driving forces provide the general trend. Driving forces can be predetermined, certain or uncertain. Among these five driving forces are two forces with the highest potential, the most significant and uncertain the critical uncertainties. Critical uncertainties are the most unpredictable driving forces, while the predetermined elements

⁴ The Kere is an ecological debacle triggered by the elimination of the primary Raketa-cacti vegetation in 1924.

are driving forces that are relatively stable (Chermack, 2011:128). The critical uncertainties are the key driving forces used to form scenarios that can challenge current thinking and provide insight into how the future might develop. To detect the critical uncertainties, participants agreed to a vote. This resulted as follows: rampant insecurity scored nine, while severe desertification-drought scored seven. Thence, the critical uncertainties are Insecurity and Desertification-Drought. The uncertainty matrix is shown in Figure 5.

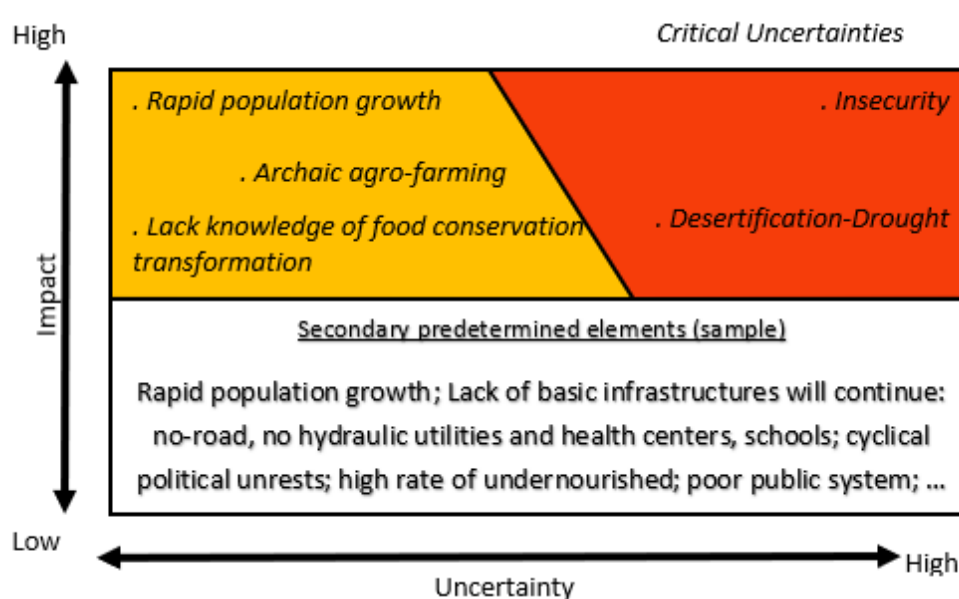


Figure 5- Androy Region Uncertainties Matrix

The 2009 political unrest triggered an unprecedented intensity of Dahalo⁵ activities in the Deep South. Workshop participants argued that since this political event, Dahalo raids changed to large groups of hundreds of individuals armed with modern firearms e.g., AK47 doing razzia from village to village. They considered it a drastic transformation from the traditional Dahalo bandits made of dozens of individuals, armed with spears or axes. Should the current poverty trend continue, dahalo raids are continued to grow in scale and sophistication within the next ten

⁵ Cattle rustlers and bush-rangers

years. It was discussed that major *Kere* of recent decades are linked to rampant insecurity this is likely to continue to be the case.

The coupled desertification-drought inflicts serious loss of biodiversity and furthers the lack of rain and land erosion. It was discussed that damage is done mostly during the *Kere* Form-2 (Ralaingita et al., 2022) when food sources disappear. Desperate people shift to a total reliance on the natural system to survive. When this occurs, the practice of slash and burn to seek new fertile soil increases, as does chopping down trees for charcoal and fuel wood. When the *Kere* grows in scope and intensity, desperate people shift to illegal activity which includes dilapidation of endemic fauna and floras (e.g., poaching of lemurs and tortoises), and illegal logging of rare wood (e.g., rosewood and diospyros ebony). In ten years, with the current rate of desertification-drought, workshop participants foresee the emergence of a new ecological catastrophe a new form of *Kere*. That is, the cumulative compounded effects of an ever-increased anthropic pressure on the ecological system, El Niño, and a possible socio-political event will trigger a novel *Kere*.

The trend analysis identified Insecurity and Desertification-Drought as the highest potential forces to influence the occurrence of novel *Kere* within ten years. The next step is to explore possible scenarios tied to these two critically uncertain forces.

1.8 BUILDING SCENARIO LOGICS “WHAT SHOULD HAPPEN?”

The scenario logics is about the plotting of the scenarios sometimes called proto scenarios (Delbecq and Van de Ven, 1971). It involves populating the two-independent variables: insecurity and desertification-drought into a 2x2 matrix referred to as the scenario matrix or scenario cross. Each variable is place on the X and Y axes of the matrix and assigned a degree of uncertainties. For Insecurity (on vertical axis Y), participants labelled the degree of uncertainty

as “either Peaceful or Perilous”; Desertification-Drought (on horizontal axis X), received the labels “either Heightened or Lowered”. Hours of debate and discussion resulted in four scenarios of the *Kere*, one in each quadrant of the Scenario Cross. Going clockwise, Scenario 1 depicts the best future; Scenario 2 illustrates the status quo the official future; Scenario 3 describes the worst future; and Scenario 4 portrays the alternative future. Participants were divided into four groups and challenged to brainstorm a relevant and plausible set of events related to each scenario to plot the scenarios:

- Scenario 1: What should happen if desertification-drought is low and security is peaceful?
- Scenario 2: What should happen if desertification-drought is high and security is peaceful?
- Scenario 3: what should happen if desertification-drought is high and insecurity perilous?
- Scenario 4: What should happen if desertification-drought is low and security is perilous?

Plots were then titled, outlined and presented to the workshop audience for discussion. The four developed *Kere* scenario stories are presented in Figure 5.

NB: each process involved informing participants, discussing and debating.

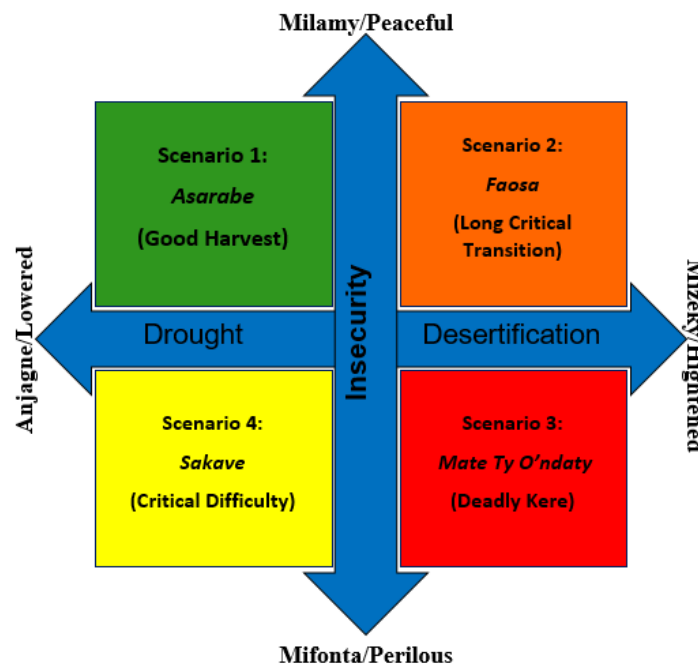


Figure 6 - Scenario Cross for the Androy Region

SECTION 2: FROM SCENARIO TO ACTION

...societal settings that empower people through appropriate governance mechanisms in ways that build trust, a higher level of resilience can be anticipated.

Paton and Johnston 2017:397

2.1 SCENARIO DEPLOYMENT “SO WHAT?”

2.1.1 SCENARIO 1: ASARABE (THE GOOD HARVEST)

The Asarabe (the Great Harvest) represents the desired future and the best scenario for the Androy Region. It implies the “*anjagne*” (good time) and represents the situation where sustainable measures to contain and to tackle the root cause of the *Kere* are implemented. Under this scenario, security is serene and geoclimatic conditions (desertification/drought) are favourable to agriculture. Crop and livestock production increase and yield good harvests. Governance is stable at the central level, and smooth functionality of administration at decentralised regional levels greatly benefits the Androy Region. Mismanagement and corruption are minimal. Lack of infrastructure including roads, hydraulics and public hygiene are addressed. Faulty *Kere* reduction infrastructures such as defective wells and dykes are reworked to comply with a strict set of technical standards. The regional public health system is accessible to the O’ndaty. The BNGRC sub-office in the Androy Region functions properly with a degree of autonomy and adequate resources.

2.1.1.1 Strategic Actions

Table 4 - Strategic Action for Scenario 1

Enabler	Identified Action
Institutional and Procedural	<ul style="list-style-type: none">• Empower and enable the regional governorate to be self-sustained and self-reliant decentralization• Creation of an anti-<i>Kere</i> institution in the Androy Region pending of the level/process of decentralization• Make the Cluster System/SAMS fully functional and able to penetrate the fokontany (wards)

	<ul style="list-style-type: none"> • Renders the BNGRC sub-office of Ambovombe operational with adequate resources (human, technique, finance, materials) and power to do so • Enable the anti-<i>Kere</i> institution to respond to all emergency crisis in coordination with the BNGRC and the CPGU • Empower the region to plan and implement risk reduction projects (structural and non-structural measures) with further involvement and support of the CPGU;
Social Capital	<ul style="list-style-type: none"> • Conception of a community-centred social capital building program: <ul style="list-style-type: none"> – To sensitize community on resources management (i.e. to stop over-expenditure on traditions and customs) – To build social cohesion, peace and harmony building – To inform cultural value and believe as a development asset not a strain • Promotion of modern pastoralism (capacity building) <ul style="list-style-type: none"> – To ameliorate crop species, the production, conservation and transformation techniques (Ministry of Agriculture, the Gret, Adra, CRS), farming credits – To enhance sea fishing activity – To inculcate the culture of entrepreneurship and co-operative • Promotion of local mutual aid association • Enhance the education system with the school canteen program • Promote a regional reforestation program
Physical and Infrastructure (CIKR)	<ul style="list-style-type: none"> • Provision adequate logistic materials for the <i>Kere</i> relief operation via the new anti-<i>Kere</i> institution and the BNGRC • Reinvigoration of local markets via direct material support to local farmers (by the anti-<i>Kere</i> institution) joint-operation with the Ministry of Agriculture and PTF⁶ (USAID, ECHO, OCHA, FAO) • Construction of strategic storage facilities in every district of the Androy • Advocate for urgent construction of national roads as well as urban and rural roads • Conception of an accessible/affordable <i>Kere</i> Health recovery and nutrition emergency program joint-coordination with the ONN, Ministry of Health, WHO, and UNICEF • Advocate for re- invigoration of school infrastructures joint-coordination with the Ministry of Education and PTF • Re- invigoration of hydraulic infrastructure and water provision for sustainability • Advocate for the increase of fiduciary services (i.e. bank and credits)

⁶ Technical and Financial Partners

2.1.2 SCENARIO 2: FAOSA (THE LONG CRITICAL TRANSITION)

The Faosa scenario represents a peaceful security situation and a severe desertification-drought. This denotes the outcome of failure to address the *Kere*'s impacts or its root cause. It depicts the status quo. Under this situation, the primary concern is drought induced crop failure. This stems from increased effects of El Niño to local microclimate, exacerbated by growing anthropic pressure on natural vegetation, via the overharvesting of the forest for charcoal, *kitay* (cooking wood) and timber, as well as the continual practice of slash and burn. The rapid loss of vegetation engenders a longer, more severe drought. As the soil loses vegetation at an alarming rate, desert land expands; rain and groundwater become scarce, crop production is hampered, and people become more transient, searching for better land to pasture livestock (zebu and goats) and/or to migrate. As a result, violent interethnic conflict erupts more often. The situation is so critically fragile that at any time, even a small *Kere* related hazard can make all hell break loose.

2.1.2.1 Strategic Actions

Table 5 - Strategic Action for Scenario 2

Enabler	Identified Action
Institutional & Procedural	<ul style="list-style-type: none"> • Enhance the capacity of the BNGRC Sub-Office of Ambvombe to be more active and directly involved in <i>Kere</i> response operation • Re-invigorate the regional disaster management committee to be operational in <i>Kere</i> response • Creation and mobilization of regional <i>Kere</i> response volunteer groups • Creation and operationalization of an emergency management service in the regional governorate structure supported by the BNGRC, the CPGU and the PTF (i.e. USAID, ECHO, WB, JICA) • Make the <i>Kere</i> early warning system inclusive of local knowledge • <i>Kere</i> food and necessary supplies should be purchased locally not imported • Timely regional needs assessment and regional primary emergency response • Better coordination of emergency response and aid to reflect the real needs of the <i>Kere</i> victims • Involving of the Ministry of Agriculture and Animal Husbandry in introduction of and supplies of climate adapted Seeds and identification/investment in “hydro-Agricole” infrastructure

	<ul style="list-style-type: none"> • Involving of the Ministry of Environment and Forestry in adapted regional reforestation, sand-dune buffering and ecological protection • Coordination of water acquisition and supply with the AES • Promote a positive involvement of politics and decision makers in the <i>Kere</i> reduction efforts
Social Capital	<ul style="list-style-type: none"> • Develop a capacity building program <ul style="list-style-type: none"> – to raise community awareness and involving in environment protection utilizing the GELOSE (La Gestion LOcale SÉcurisée) joint coordination with Ministry of Environment and Forestry and key stakeholders (i.e., WWF, ANGAP) – Involving of the Dina in preservation of the Forest (fauna and flora) • Promote diversification of livelihood <ul style="list-style-type: none"> – Re-invigorate the exploitation of sea resources joint coordination with the Ministry of Fishery and the GRET – Scale-up the vegetable-market practice to all community joint coordination with INGOs (ADRA, WHH, CRS) – Vulgarization of the new crop species for cash-crop, catch crop – Further develop the industrial crops: castor seed-oil, cactus seed-oil, etc. joint coordination with relevant technical entity and NGO e.g. the GRET – Promote entrepreneurship, credits and small loan e.g., <i>Fiavota</i> Project • Cultivate social harmony: promote social cohesion and mutual aid within sub-groups of people utilizing the IEC (Inform-Educate-Communicate) joint coordination with the Ministry of Population, Gendarmerie, the UN Agency and the NGO Peace & Justice
Physical & Infrastructures (CIKR)	<ul style="list-style-type: none"> • Explore the possibility of making an artificial rain to break the momentum of the drought • Advocate for the construction of standardized hydraulic infrastructure e.g., impluvium, aqueducts, water pipelines, irrigation systems in major cities and towns • Construction of standardized WASH (water, sanitation and hygiene) • Identification of potential site for <i>Kere</i> shelter and recovery centers • Provision and acquisition of <i>Kere</i> logistics, material and Aid Kits • Enhance storage capability for <i>Kere</i> operations in collaboration with sectoral stakeholders (IGOs and NGOs) • Identify potential point for a seaport in the Androy littoral

2.1.3 SCENARIO 3: MATY TY O'NDATY (THE DEADLY *KERE*)

The Mate Ty O'ndate scenario represents the perfect *Kere*. Under this scenario, the region experiences perilous insecurity and severe desertification/drought. Districts become no-go zones, dahalo bandits rule the land, and natural resources are looted. Lawlessness, poverty

and desperation become the norm and corruption runs rampant. Dahalo bandits become sophisticated with military level organization, utilizing modern firearms and mobile phones to communicate. The situation is so dangerous that people are afraid to go outside, to work the land, or pasture livestock. The land is dry with no rain for any crops to grow humans and livestock suffer hunger, thirst and illness. Critical needs such as food, water and medication may disappear and reappear at the market at exorbitant prices. Households sell possessions and properties at derisory prices and migrate away, resulting in waves of internally displaced people (IDPs). External aid agencies sub-contract aid distribution to local associations, where aid embezzlement of all kinds occurs. Attempts by the central government to restore order via military operations is met with fierce resistance but when operations end, the dahalo re-emerge in different locations.

2.1.3.1 Strategic Actions

Table 6 - Strategic Action for Scenario 3

Enabler	Identified Action
Institutional & Procedural	<ul style="list-style-type: none"> • Creation of a regional committee of Notables (<i>Olobe, Mpisoro, Hazomanaga</i>) to: <ul style="list-style-type: none"> – Discuss and handle spill-over effects of any political unrest that may occur at the central and regional government level to cause regional governance vacuum – Advocate for the creation of advanced military posts with adequate resources (human and materials) in dahalo hot-spot zones – Form an Ad Hoc entity to manage the crisis and restore law and social order • Promote the utilization of the Dina (traditional customary law) as a tool to: <ul style="list-style-type: none"> – Reserve and protect the natural resources (fauna and flora) – Restore and preserve social order – Upgrade the role of local vigilante group (Kalony and Jado) and private security (Zama) • Creation of an Anti-<i>Kere</i> institution under the regional governorate structure in close coordination with the BNGRC and the CPGU • Inclusion of the army in the decision making and <i>Kere</i> relief operations • Make the BNGRC (and the anti-<i>Kere</i> institution) a real lead responder to the <i>Kere</i> crisis management

Social Capital	<ul style="list-style-type: none"> • Urgent community awareness raising program (IEC) to: <ul style="list-style-type: none"> – Promote peace, social harmony and mutual support – Sensitize how traditions and customs inhibit development – Form response volunteer groups in each commune • Enhance livelihood based on traditional pastoralism <ul style="list-style-type: none"> – Introduction of climate resistant seeds in cooperation with the Ministry of Agriculture and INGOs e.g., GRET, ADRA, WHH) – Promotion of the utilization of the “<i>pilinomby</i>” (zebu-tracking chips) – Amelioration of existing cattle race Ministry of Agriculture and Animal Growing – Promotion of sea fishing with strong involving of the Ministry of fishery and stakeholders e.g., GRET – Introduction and vulgarization of climate resistant seeds and market garden for cash and catch crops – Promotion of entrepreneurship and farmers’ cooperative in cooperation with the Ministry of Population and FID, FDA (<i>Fiavota Project</i>) • Provision of <i>Kere</i> recovery seeds Ministry of Agriculture and local <i>Kere</i> risk reduction association
Physical & Infrastructure (CIKR)	<ul style="list-style-type: none"> • Restore social order <ul style="list-style-type: none"> – Safety Advocate for the provision of adequate military barracks to advanced strategic military posts in dahalo hot spots – Urgent dispatch of military to dahalo hot-spots close coordination with the EmoReg (regional security authorities) – Advocate for the provision of adequate materials and equipment to Gendarmerie advanced posts in dahalo hot spots • Advocate for the supply of necessary materials to Health centers implementation of advanced health post creation of mobile medical team • Identification of <i>Kere</i> shelter and recovery centres in <i>Kere</i>-affected districts • Conception of a mobile veterinary unit Ministry of Agricultural and Animal Growing • Discuss with IFVM (Anti-Locust Agency) for an efficient anti-locust operation • Enhance the existing school canteen program to every public schools • Advocate for the implementation of sustainable WASH program multisector coordination • Advocate for the construction of national road to end the region’s isolation • Explore the potentials of a seaport in the Androy

2.1.4 SCENARIO 4: SAKAVE (THE CRIPPLING TRANSITION)

The Sakave scenario represents an alternative future of the status quo where there is no desertification-drought, but the security situation is perilous. This is the "anjagne" where rain falls regularly and vegetation is green, people work the land and grow livestock, but the environment is hostile. Because of fear of attack, either in the fields or at home, people cannot work at full capacity. Consequently, food products are available in limited amounts. Dahalo bandits raid croplands (of cassavas, sweet potatoes, corn) and granaries then destroy plantations and burn granaries afterward. Cattle raids skyrocket with atrocities of all kinds. Relief aid continues to be carried out under difficult conditions. Dahalo bandits become sophisticated with modern firearms and wireless communication. Communities establish the Dinabe (traditional intercommunity customary law) and militias the Kalony and the Jado patrol villages and towns. Corruption runs rampant, increasing distrust in the administrative system. In safer districts, people continue to produce food, but in limited quantities. Thus, the *Kere* is moderate, continual and crippling.

2.1.4.1 Strategic Actions

Table 7 - Strategic Action for Scenario 4

Enabler	Identified Action
Institution & Procedural	<ul style="list-style-type: none"> • Advocate for: <ul style="list-style-type: none"> – Urgent implementation and opening of strategic military advance posts in dahalo hot spots with adequate resources and materials – the opening of a regional office of the BIANCO to deal with the corruption • Creation of an Anti-<i>Kere</i> institution in joint coordination between the region, the BNGRC and the CPGU • Amelioration and application of Dina on the issue of insecurity fokonolo (community of people), Ministry of Justice, Ministry of Interior, Regional Justice, EmoReg (regional public security authorities) and other stakeholders • Initiate a process to establish trust in the justice system • Conception and implementation of a risk reduction program.
Social Capital	<ul style="list-style-type: none"> • Conception of a “living in harmony program” (in collaboration with Komity pour le Fampivavanam-pirenena, the Peace & Justice, other)

	<ul style="list-style-type: none"> • Assemble and mobilize regional committee of Notables (Olobe, Mposoro, Hazomanaga) • Social reinsertion of IDPs and capitulating dahalo • Conception of “living in harmony program” in collaboration with Ministry of Environment: <ul style="list-style-type: none"> – Raise awareness for sustainable use of natural resources (fauna and flora) – Utilize the Dina as an efficient tool to preserve the unique fauna and flora of the Androy – Adapted reforestation program • Promote the diversification of livelihood to include: <ul style="list-style-type: none"> – Shift to sea fishing – Agriculture industry e.g., castor, cacti and Jatropha seeds oils • Advocate for a rework of the education system <ul style="list-style-type: none"> – Boost attendance – Provide incentives (e.g., school canteen) – Incentivise skilled educators to work in Androy Region. – Promote vocational technical training – Prioritize natives for local job opportunities
Physical & Infrastructure (CIKR)	<ul style="list-style-type: none"> • Advocate for the provision of adequate military barracks and resources to advanced strategic military posts in dahalo hot spots • Advocate and conceptualize a program that supplies: <ul style="list-style-type: none"> – farmers with affordable tools and materials – Fishers with adequate materials and equipment • Identify and open a <i>Kere</i> shelter and recovery centers in collaboration with SAMS/Cluster/CRIC • Conceptualise an IDP re-insertion program in joint partnership with the Ministry of Populations and the IOM (United Nations Office of Migration) • Promotion of utilization of “pilinomby” (zebu-tracking chips) • Promote the creation of centres for community mutual aid that would facilitate microfinance to support <i>Kere</i> recovery and livelihood transformation • Advocate for the construction of the road to end regional isolation

2.2 THE CONCEPT OF OPERATIONS (CONOPS)

A concept of operations (ConOps)⁷ is the operational description of the strategic actions to be taken in the pursuit of mission accomplishment in the form of action-plan. In order to implement the action-plan, the ConOps section provides a generic guidance for implementation a standard

⁷ https://www.dhs.gov/sites/default/files/publications/NICS_CONOPS_508-v2.pdf

operating guideline (SOG). The action-plan exhibits details of interventions at strategic and operations levels though not at the tactical level. Interventions under the ConOps are the amalgamation of the four sets of strategic actions of each *Kere* scenario. Their implementation will reduce the likelihood of all *Kere* scenarios. Because this is a government plan, it is expected that any individual(s) assigned to carry out the initial role (Task Force) and the subsequent implementation of this plan are trained and experienced civil servants or officials of other status. Building regional resilience to the *Kere* is an enormous undertaking that requires an interdisciplinary synergic effort, dependant on key factors including community and political support. It is therefore recommended that the leading role is assigned to an elected official(s) supported by technical experts.

2.2.1 STANDARD OPERATING GUIDELINES

The SOG begins with Step 1, involving political lobbying and acceptance of the plan at both central and regional levels. Step 2 begins upon approval of the Plan. It consists of forming a Task Force (TF) and the exploration of resources to support plan implementation. The TF must reflect the complex realities of the *Kere* and thus shall be constituted by an interdisciplinary expert prioritizing the natives of the Androy to maintain regional integrity and identity. Step 3 involves design and implementation of key programs and interventions, including provision of emergency services, enhancing social capital, and upgrading of agricultural practices. The Program Expansion and Development is comprised of interventions that require colossal resources and time, such as roads and hydraulic constructions. The SoG is presented in Figure 6.

The SOG for Androy Region

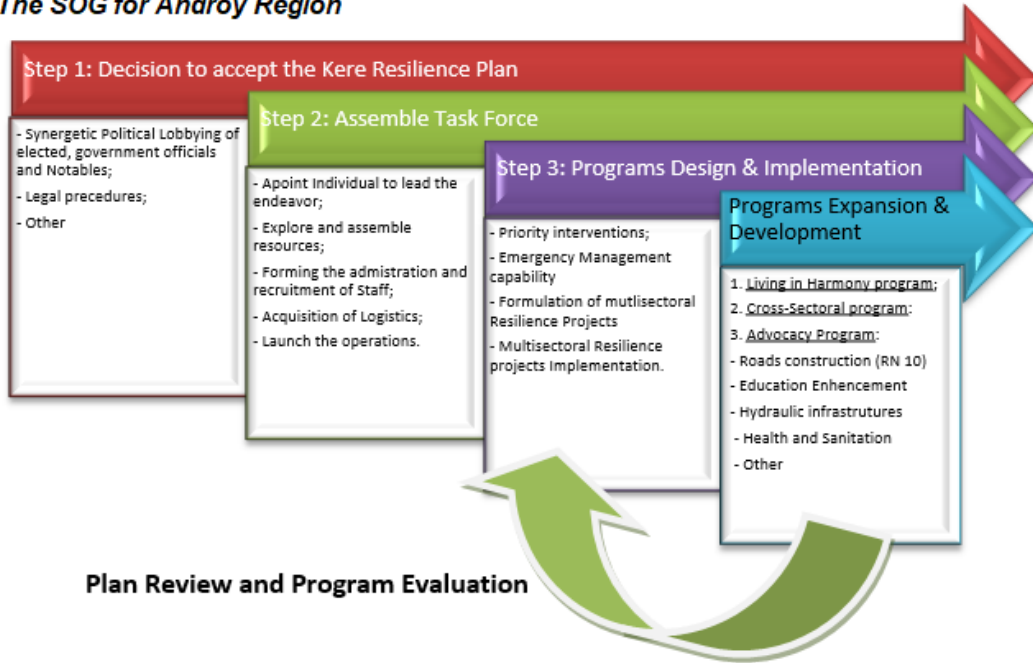


Figure 7 - SOG for the Androy Region

2.2.2 STRATEGIC ACTION PLAN

2.2.2.1 Institutional and Procedural Interventions

Table 8 - Strategy Action Plan for the Androy Regional

Creation of an anti- <i>Kere</i> institution/agency under the regional Governorate of Androy	Activities	Aims
Step 1	Political lobbying and advocacy	Empower/enable the regional governorate to be self-sustained and self-reliant decentralization
		Advocate for an advanced military post in dahalo hot-spot zones
	Legal Procedures	Advocate for a regional office of the BIANCO to deal with the corruption
		Re-establish trust between people and the justice system
	Resources Prospection	Empower/enable/ the anti- <i>Kere</i> institution to respond to <i>Kere</i> crisis with the BNGRC and the CPGU and the PTF (i.e. USAID, ECHO, WB, JICA)
		Enhance the capacity of the BNGRC Sub-Office of Ambovombe
		Inclusion of the army in the <i>Kere</i> relief operations
		Positive involvement of politics and decision makers in the <i>Kere</i> reduction efforts.
		Make the regional BNGRC (and the anti- <i>Kere</i> institution) a real lead responder to the <i>Kere</i> crisis management

Anti- <i>Kere</i> insitution/agency Tasks (Supported by BNGRC, CPGU, PTF)	Activities	Development Interventions and Projects Design
Step 2	Design regional emergency services capability	Enhancing School health program with Ministry of Health, Min Edu, UNICEF, WHO
	Acquisition of resources	Ministry of Agriculture and Animal Husbandry: Introduction of climate adapted Seeds and “hydro-Agricole” infrastructures
	Technical support from the Cluster System/SAMS	Ministry of Environment and Forestry: Adapted regional reforestation, sand-dune buffering, promotion of adapted Dina to preserve the flora and faunas
	Conception and Implementation of DRR projects	Water Agency (AES): Community informed water services
	Cross-sectors Projects conception, implementation, coordination	Enhancing the School Feedings/canteen programs with Ministry of Education, ORN, WFP, UNICEF
	Re-invigorate the regional, communal disaster response committees	Provision of <i>Kere</i> recovery seeds Ministry of Agriculture
	Creation and mobilization of regional <i>Kere</i> response volunteers	Social reinsertion of IDPs--Ministry of Populations and the IOM (United Nations Office of Migration)
	Advocate that critical <i>Kere</i> needs (food items) are purchased locally not imported;	
	Early warning system inclusive of local knowledge	
	Timely regional needs assessment and regional primary response	
	Affective and timely relief aid delivery	
Prioritize natives for local jobs opportunity		

	Close coordination with the EmoReg (regional army authorities); and the IFVM (Anti-Locust Agency)	
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2.2.2.2 Social Enabling Interventions

Building Social Capital	Tools	Activities	Aims
Step 2	IEC (inform, Educate, Communicate) Programs	To sensitize community on resources management (stop over-expenditure on traditions and customs)	Household assets management
	Regional Notables (Olobe, Mpisoro, Hazomanaga)	To inform cultural value and believe are development assets not strains; To sensitize how traditions and customs inhibit development	Collective well-being
	Min Pop, Gendarmerie, Komity Fampiavanam-Pirenena, the Peace & Justice, UN Agencies	Raising awareness to no-violence and peace; Forming Ad-Hoc entities to manage social crisis	Social Cohesion and harmony
	Mayors	Cultivate mutual support and aid; Creation of communal emergency response volunteer groups; Creation of community centres	Promotion of local mutual aid association
	Ministry Justice, Ministry of Interior, Regional Justice, EmoReg (regional public security authorities), fokonolo (community of people)	Amelioration and utilization of the Dina on the issue of insecurity; Initiate a process to establish trust between people and the justice system.	Reduction of insecurity
Promotion of modern agro-pastoralism	Tools	Activities	Aims
Step 2	IEC, Ministry of Agriculture, the Gret, Adra, CRS, Fiavota Project	Introduce improved crop species, the production, conservation and transformation techniques, agro-farming credits	Improved productivity
	Min Pop, FID, FDA, Fiavota Project	Cultivate entrepreneurship and co-operatives	Improved livelihood
	INGOs (ADRA, WHH, CRS)	Scale-up the vegetable-market practice to all community	Improved livelihood

	NGOs (GRET, WHH)	Vulgarization of new crop species for cash-crop, catch crop	Improved livelihood
	Ministry of Agriculture, the Gret	Promotion of industrial crops: Seed oils from castor, cactus, cacti and Jatropha	Idem
	Ministry of Agriculture & Animal Husbandry; Mada Omby	Promotion of the utilization of the “pilinomby” (zebu-tracking chips); Amelioration of existing cattle	Increase productivity
Promote diversification of livelihood	Tools	Activities	Aims
Step 3	Ministry of fishery; the GRET	Promotion of sea fishing activities, supply of adequate fishing materials and equipment	Improved livelihood
	Idem	Promotion of biofuels and fata-mitsitsy	Reduce forest clearing
Support to Education System	Tools	Activities	Aims
Step 3	school feeding/canteen with Min Edu, WFP, ORN	Encourage pupil’s school attendance	To revert infant undernourishment
	Min Edu, Governorate	Incentivise school teachers to go work in Androy Region	to improve quality education
	Min Edu, Governorate	Promote vocational technical training	to improve regional technical skills
Conception of a “living in harmony program”:	Tools	Activities	Aims
Programs Expansion and development			
Social Harmony	Komity pour le Fampivavananam-pirenena, the Peace & Justice, other; Regional committee of Notables (Olobe, Mposoro, Hazomanaga)	Creation of Committee of Notables; Deep implication to solve protracted social feuds; Upgrade the role of village vigilante security group (Kalony, Zama, Jado)	Improve security

	The Dina	Promote the utilization of the legalized Dina	Idem
	Idem	Social reinsertion of capitulating dahalo	Idem
Environmental Harmony	Tool	Activities	Aims
	Ministry of Environment & Forestry, the GELOSE (La Gestion LOcale SÉcurisée), the WWF, the ANGAP	Raising-awareness, adapted mass-reforestation	Preservation of the fauna and flora
	The Dina	Utilizing the Dina as an efficient tool to protect the ecosystem; creation of community associations, IEC, conception, legalization and application of the Dina	Idem

2.2.2.3 Physical Enabling Interventions

Anti-Kere Program	Tools	Activities	Aims
Building the Logistic Capacity	Region, the BNGRC, PFT/CRIC	<i>Kere</i> response and prevention;	To Equip the Anti- <i>Kere</i> program
Step 2	Idem	Transportation Materials: All-terrains Vehicles	To Equip the Anti- <i>Kere</i> program
	Idem	Acquisition of facility for office, Telecommunication, Office materials	To Equip the Anti- <i>Kere</i> program
	Idem	Construction of strategic storage facilities in <i>Kere</i> hot spots	Timely <i>Kere</i> response
Multi Sectoral Projects:	Tools	Activities	Aims
Step 3	Ministry of Agricultures & Animal Husbandry and PTF (USAID, OCHA, FAO)	Improved seeds, machinery; (mobile) veterinary assistance and improved cattle species	Improved Livelihood
	Mayors, PTF (USAID, UNDP, FAO)	Invigoration of local markets: construction of communal markets	Improved Livelihood
	ONN, Ministry of Health, SAMS/Cluster/CRIC, WHO, and UNICEF	Conception of <i>Kere</i> recovery and nutrition Centers; for the supply of essential materials to Health centers implementation of advanced health post creation of mobile medical team	Improved nutrition and health status
	Mayors, WHO, UNDP and UNICEF	Conception of a regional WASH (Water, Sanitation, Hygiene) projects	Improve health conditions
Advocate For:	Tools	Activities	Aims
Programs Expansion and Development			
	Ministry of Public work, regional Governorate, Regional district	Urgent construction of national (RN 10, 12), regional and urban roads	To end regional isolation

	Ministry of Education and PTF	the re-invigoration of the school infrastructures	Encourage school attendance
	Water Agency, the Ministry of Agricultures and PTF (USAID, OCHA, FAO)	Invigoration of standardised hydraulic infrastructure and water provision: impluvium, aqueducts, water pipelines, irrigation systems, dams, wells, dykes exploiting the Lake Tongobory, the river of Efaho	Improve access to potable water
	Regional Governorate	The development of micro finances	Improve household coping capacity
	Regional Governorate, Congresses	Re-consideration of making artificial rains to break the momentum of the drought; exploration/implementation of desalination plants	Counter long dry-spells
		Identification of potential location for a seaport in the Androy littoral	Alternative to lack of road

2.3 FINANCIAL RESOURCES

This plan does not contain the financial cost associated with the *Kere* resilience building projects and program interventions. This plan acts as a mobilizing metaphor and exhibits strategic and operational activities required to bring about practical and sustainable solution to future/novel *Kere*. Because of the complex nature of the *Kere* and the intersectoral implication, each program intervention and project would be associated with a specific cost that the anti-*Kere* task force and or program leadership must aggregate and calculate according to the specific needs, time and context.

2.4 THEORY OF CHANGE

The Theory of Change (ToC) is a pragmatic framework that describes how planned intervention affects change (De Silva et al., 2014). It is crafted from the ConOps and displays a strategic pathway that circumvents the foresighted *Kere* scenarios. The ToC illustrates critical steps toward achieving the plan's purpose which is the building of the resilience of the Androy region to the *Kere*. It shows that resilience of the region to future/novel *Kere* can only be attained if the people's livelihoods are improved. The ToC's goals present key features of the state of resilience, whereby people can absorb and cope with *Kere* shocks and stresses or adapt and recover from them and transform if the situation is untenable.

The ToC exhibits critical paths and transitional points involving chains of activities (inputs, outputs, outcomes) initiated to bring positive regional transformation. Because the *Kere* is a multifarious phenomenon induced by a dynamic interaction of socioecological factors, building a regional resilience to it is a multidisciplinary undertaking. Key sectors involved include, but are not limited to: public works, agriculture, emergency management, environment, public security and health. Furthermore, the ToC begins with the political intervention to discuss resistance to change. Resistance to change is likely inevitable, but must be addressed and moved past for the sake of the greater community. Finally, building resilience is a continual process whereby the ToC links attained resilience to projects' inputs signalling the continual cycle of adaptive

development efforts. Simply put, the ToC chalks out the architecture of undertakings requisite to building the resilience of the Androy region to future/novel *Kere*.

However, this regional resilience plan is not a silver bullet to the *Kere*. It should not be perceived with the mindset that because this plan exists, the *Kere* is solved. The opposite holds true. It must be implemented to bear fruits. It is only a blueprint to change a cluster of key interventions to influence the future course of foresighted *Kere* events (Goodspeed, 2020:143), that if implemented would help the region move away from the status quo. For that to happen, change must be accepted and embraced. Conceptualised with the full inclusion of those to benefit from it, this plan carries thoughtful changes that preserve regional identity. It identifies what needs to be achieved over the coming ten years by which entity and how to reduce the likely emergence of future/novel *Kere*.

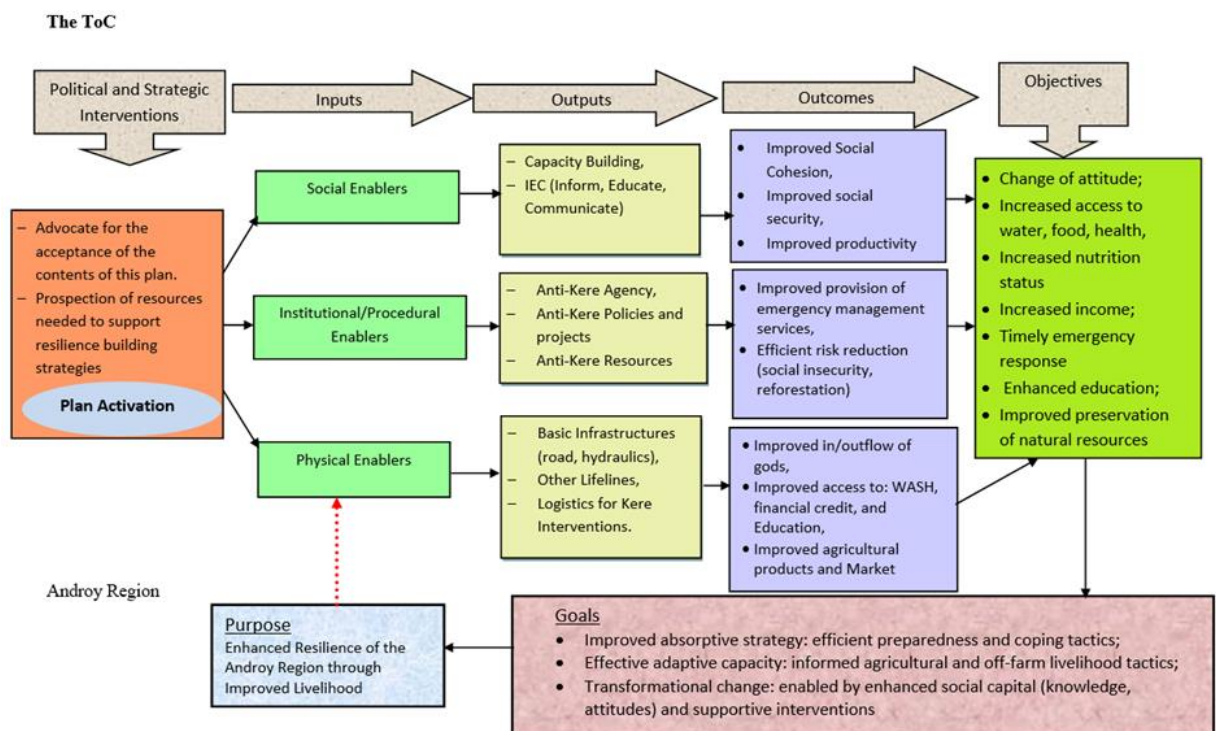


Figure 8 - Theory of Change for the Androy Regional Resilience Plan

2.5 PLAN REVIEW AND PROGRAM EVALUATION

The Androy *Kere* resilience plan is a live document. The back-loop of the ToC implies a complete review of the plan and the evaluation of programs that it carries. The plan can be

reviewed and periodically re-examined, e.g. every year. The periodicity of the review is best left to the discretion of regional *Kere* authorities. They should decide when and under what circumstances the plan shall be reviewed or amended. It is recommended that the Plan be reviewed when its underlying assumptions are no longer valid or some of its provisions no longer reflect *Kere*-affected regions' circumstances.

Because the plan comprises multiple programs, each program requires a specific set of technical evaluations. For instance, road infrastructure projects should be assessed in accordance with the Ministry of Public Work terms of reference. The overall assessment reports of each *Kere* resilience program and intervention would then inform the general resilience capacity of the Androy. There are many ways to carry out an ex-post general resilience capacity assessment. Because this plan emerged from an empirical PSP, the scenario planning framework of assessment proposed by Goodspeed (2020:162) is recommended. In addition, it fits with this plan's conceptual framework (the CDRF). It must be noted that this framework for assessment is only a guiding reference; the anti-*Kere* authorities may chose other methods if necessary.

Table 9 - The transformative Resilience Project Evaluation Framework

	Scale	Absorptive Change	Adaptive Change	Transformative Change
Normative Learning (Social Enablers)	Behavioural change at Individual, household, group, districts, regional			
Institutional Change (Institutional/Procedural Enablers)	Policies, plan, laws at fokontany, Commune, district, regional			
System Change (Physical Enablers)	Fokontany, commune, district, regional			
The regional <i>Kere</i> Resilience Capacity Inferences				

Utilizing indicators from sectoral project evaluations, the assessment matrix examines:

- **Normative Learning (Social Enablers)**: induced behavioural change as a result of the projects and interventions at individual, group, district, and regional levels, and assay how they empower/hinder absorptive, adaptive, and transformative changes.

- Institutional Change (Institutional/Procedural Enablers): observed and noticed transformational change as a result of implemented anti-*Kere* policies, laws, Dina at fokontany, district, and regional levels, and assay how they empower/hinder absorptive, adaptive, and transformative changes.
- System Change (Physical Enablers): observable and noticed transformational changes as a result of implemented infrastructures and other physical projects and assay how they empower/hinder absorptive, adaptive, and transformative changes.

Resilience of the Atsimo-Andrefana region to the *Kere* emerges from the successful completion of the absorptive, adaptive and transformative capacities. Because the *Kere* resilience is a processual behaviour, sustaining regional resilience to such a complex phenomenon is “continual work”.

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