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*Reducing climate adaptation deficits*
*using revolving fund network schemes in rural areas:*
*Case study of Loitoktok district, Kenya*

University of Hamburg
Research Group Climate Change and Security

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# Reducing climate adaptation deficits using revolving fund network schemes in rural areas: Case study of Loitoktok district, Kenya.

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***Abstract:***
Persistent adaptation deficits in the developing nations climate change agenda are partially due to a complete lack or insufficient quality of communication. Economic growth remains Kenya's priority, especially through revolving fund schemes within the Vision 2030 plan. Successful in empowering citizens, such initiatives however lack strong environmental aspects. Using a political ecology framework and stakeholder network analysis, we investigate how government funding schemes influence the stakeholder network in Loitoktok district and suggest how adaptive capacity can be mainstreamed via avenues created by these same schemes. Results confirm high stakeholder group activity among women and youth within the district with a high number of agriculture and business activities, sensitive to climate variability. Using the established revolving fund scheme network, information about climate change and predicted resource scarcity, relevant adaptation measures and investment opportunities, can be transmitted to policy-makers, stakeholders, and the public to increase adaptive capacity and promote 'climate friendly' development.

***Key words***: adaptation deficit, revolving funds, stakeholder networks, mainstreaming, capacity building, grassroots development, barriers, group stakeholders

***Introduction:***
Adaptation deficit refers to countries or communities that are underprepared for climate change because of a complete lack, insufficient frequency or poor content of communication

about climate uncertainty, and therefore do not rationally allocate or utilise resources sustainably to adapt to climate change events (Moser, 2009; World Bank, 2010). This phenomenon, common in developing nations, has led to focused research on barriers to adaptation in local policy and planning, in the media, and in public awareness (Moser & Ekstrom, 2010). Literature differentiates two forms of adaptation: autonomous (spontaneous) adaptation that is done by households and communities acting on their own without public interventions, and planned adaptation as a deliberate public policy decision (World Bank, 2010). Planned adaptation increases the adaptive capacity of a country, community or ecosystem to adjust to climate variability and extremes; to moderate potential damages; to take advantage of opportunities; or to cope with the consequences (IPCC TAR, 2001). Until recently, little attention within the climate change literature has been devoted to addressing social limitations. Accordingly, the IPCC report (2007) highlighted that "social and cultural limits to adaptation are not well researched". It also noted that effective proactive adaptation is based on linkages between information (best available), capacity (qualified), financial resources, institutions and localised technology (IPCC, 2007).

In Kenya, like in the rest of African countries, climate change awareness is still quite low; many people at the grassroots level cannot differentiate between climate change impacts and problems caused by local environmental degradation (Mutimba et al., 2010). Thus, interrelating issues between climate change and human security, like water stress, land use and food security, natural disasters and environmental migration (Scheffran and Battaglini, 2011), have become more complex. Also, lack of reliable information may lead to "maladaptation" which is defined as any package of measures that inadvertently increases vulnerability to climatic stimuli (Agrawal, 2008; IPCC TAR, 2001). There is therefore an urgent need to investigate local stakeholder connections and communication avenues within the grassroots and suggest effective measures for the transfer of context-sensitive feasible adaptation strategies (Moser & Ekstrom, 2010).

This paper begins with a brief discussion on the climate adaptation agenda by the Kenyan government and associated barriers to effective adaptation. It then outlines the history of poverty eradication initiatives and introduces two specific revolving fund schemes influencing grassroots networks: the Women Enterprise Fund and the Youth Enterprise Development Fund. Next, a detailed evaluation of the number, location and livelihood activities of stakeholder groups in Loitoktok district as well as weaknesses in the network administration is presented. Lastly, a business model change is proposed to show how adaptation can be mainstreamed into the development agenda to increase adaptive capacity at the grassroots.

***Climate adaptation in Kenya***

Governments and related institutions have an important potential role in helping people to adapt to climate change through building their adaptive capacity (AMCEN, 2011). Besides adaptation, enhanced adaptive capacity may have multiple benefits, such as strengthening institutional linkages and community cohesiveness in the long run. Recognizing this, the United Nations Framework Convention on Climate Change (UNFCCC) has worked collaboratively with member states to identify priority actions required for effective adaptation to climate change. Already, Kenya has published the National Climate Change

Response Strategy (NCCRS) that includes details of formation of the National Adaptation Facility (NAF) (Mutimba et al., 2010). There are a substantial number of Government ministries and institutions in Kenya currently working on climate change issues. These include the Ministry of Environment and Mineral Resources (MoEMR), the Ministry of Forestry and Wildlife, the National Environmental Management Authority (NEMA), the Climate Change Coordination Unit (CCCU) at the Prime Minister's Office, and several government parastatals and departments (Mutimba et al., 2010). But their efforts towards addressing climate change have so far not been fruitful.

***Barriers to climate adaptation***

Many developing countries have only little experience in climate adaptation, and lack a strong knowledge base, integrated physical infrastructure, financial resources and institutional capabilities needed. Hence, barriers arise at each stage of the adaptation process, including infrastructure and ownership, cost and finance, regulation and policy. The barriers may vary, depending on national context and economic sector, project, pathway and technology, application area, region and geography. One of the main barriers to optimal adaptation is that national economic imperatives dominate and policy responses to innovation are fragmented. This can lead to competition and turf wars for resources within and between communities, coordination problems with environmental or development policy, and to resource allocation to generate short-term results rather than long-term solutions. Secondly, lack of capacity building and domestic infrastructure may cause poor technical performance and lack of attention to local conditions and stakeholder interests. Capacity building is neither easy nor quick and many attempts of capacity building have failed (ODA, 1994; UNDP, 1997).

In Kenya, such barriers hinder effective national awareness and as a result, adaptation programmes and projects are currently implemented as isolated activities (Mutimba et al., 2010). This lack of coordination is due to political interference, inadequate human resources and low qualified capacity leading to duplication of efforts (Mutimba et al., 2010) and poor mobilisation of citizens. In addition, the legal framework for environmental concerns in Kenya, known as the Environmental Management and Coordination Act (EMCA) No. 8 of 1999, has minimal content relating explicitly to either climate change adaptation or mitigation (Mutimba et al., 2010). These obstacles and barriers also affect investment policies that can cushion social costs, ranging from job losses to the reduced affordability of essential services, and/or reduced taxes. Subsequently, there is a growing danger that the Kenyan climate change agenda will further be delegated to the back bench in favour of economic growth by the state when the County governance system is adopted as stipulated in the new constitution.

This reinforces the urgency to mainstream climate change adaptation to existing initiatives of priority such as the poverty reduction strategies, disaster response measures and land use planning to ensure adequate commitment for adaptation and reduce sensitivity of development activities (Klein et al., 2007). Hence, an integrated adaptation strategy would build on the dual nature of adaptation that "moderates harm or exploits beneficial opportunities" (IPCC, 2007). This would involve institutional innovations that organize and coordinate community actions to exploit the "beneficial opportunities" and strengthen the adaptive capacity of communities to gain new capabilities and revive their livelihoods. In such sustainable livelihoods, communities would diversify their livelihoods and pursue alternative action pathways, such as agricultural intensification and local non-farm activities (McDowell & De Haan, 1997).

***Poverty eradication and the revolving fund schemes***

Although Kenya's economic performance has exceeded that of most other African nations (AfDB, 2012), economic growth remains a top priority for the government. This resolve has further been strengthened by establishment of "Vision 2030" as an official road-map to Kenya's development. It is based on economic, social and political pillars that aim at making the country an industrialized middle income economy providing high quality of life in terms of poverty reduction, livelihood security, and improved well-being for all its citizens by the year 2030 (LDDP, 2009). This is because the high economic growth has not been sufficient to guarantee formal employment among the youth, whose unemployment rate stands at 70% (AfDB, 2012). Since poverty and unemployment are related, the highest rates of poverty are also observed among the rural youth (AfDB, 2012). Several mechanisms have been formulated under the economic pillar, like revolving funds schemes that target economic growth at the grassroots. Simply put, the government sets aside money for a particular category of people, e.g. the youth or women, to borrow at a lower interest rate than commercial banks for a business purpose and then pay back according to personalized business performance. The submitted proposals are judged according to a cost and profit criteria to ensure business sustainability. This circulation of money contributes to economic growth at the grassroots and has proved to be a success among entrepreneurs (AfDB, 2012). This study focuses on two active revolving fund schemes, the Women Enterprise Fund (WEF) and Youth Enterprise Development Fund (YEDF), which are discussed in the following.

In developing countries, women are active in seeking solutions to lack of food, energy and drinking water, access to health and education, and reducing factors of vulnerability of their communities in the face of climate variability by establishing networks with other women to increase their social capital (Ariyabandu, 2004). Therefore, in 2006, the Ministry of Gender, Children and Social Development established the Women Enterprise Fund (WEF) under section 26 & 35 of the Financial Management Act (2005) as a strategy for gender equity by improving women access to resources. In addition to providing finances to women, the mandate includes promoting community-based projects to make use of local resources, supporting women to set up and operate small enterprises and providing support to women organizations serving the community (GOK, 2005). As of the last financial accounts (2011), the fund had disbursed KES 1,000,000 ($ 11,700) to 20 community groups in Loitoktok with a 66% repayment rate.

Youth unemployment in Kenya is blamed for rise in insecurity, drug abuse and other social evils. To tackle unemployment among the youth, the Youth Enterprise Development Fund (YEDF) was established in 2006 under the State Corporations Act, Cap. 446. It became fully operational as a state corporation in 2007. It focused on removing obstacles in the informal sector by providing funds to create decent jobs for entrepreneurial youth (GOK, 2007). Over the last five years, it has among other actions, disbursed almost KES 6 billion to some

157,538 youth enterprises; organized youth trade fairs; built simple infrastructure for young people; and started pre-financing training for the young (AfDB, 2012). As of September 2011, the fund had disbursed KES 8,955,000 ($ 104,200) to 198 group projects within the greater Kajiado County.

The on-lending component of these two schemes mainly works through financial intermediaries such as banks, Non-Governmental Organizations (NGOs), Savings and Credit Cooperatives (SACCOs), and Micro Finance Institutions (MFIs). The interested people access funds directly either as legally registered individuals or organized entities such as groups, cooperatives and companies with sound business initiatives. However, before the groups apply for funds, they have to get a certificate of registration from the Ministry of Gender, Children and Social Development. This process results in a complex linkage system with many intermediaries across public & private sectors, urban & rural agencies, gender, age and livelihoods (Figure 1). This funding scheme has enlarged development coverage area and participation creating a positive perception of the government in the community.

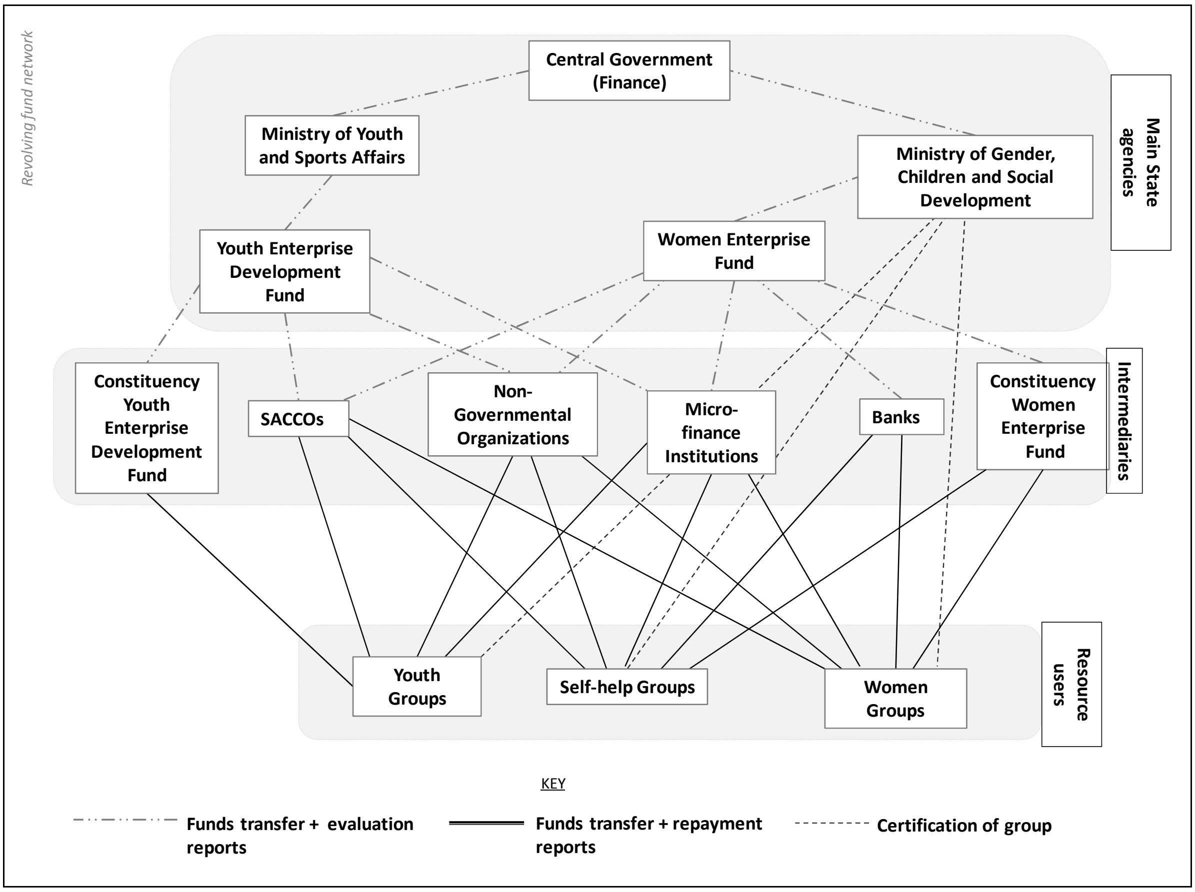


Figure 1: A simplified graphical representation of the revolving fund stakeholder network

### *Study area*

This article is based on Loitoktok district, Kajiado County, an area undergoing rapid subdivision, high population and fast economic growth. It is located at the southern tip of the Rift Valley province and is categorized among the arid and semi-arid districts in Kenya (LDDP, 2009). It is divided administratively into 6 divisions namely Lenkism, Mbirikani, Entonet, Kimana, Kuku and Rombo respectively. It supports several high income economic activities, including agriculture and tourism. The agricultural sector is divided into nomadic pastoralism, small scale subsistence farming, horticultural farms of fruits (oranges, tomatoes, mangoes, bananas) and vegetables (tomatoes, onions and chillies) (LDDP, 2009). The very vibrant tourism industry is driven by an environment rich with wildlife around Amboseli National Park, scenic Mt. Kilimanjaro and the colourful Maasai culture.

***Results and discussion***

Data on the number, location and livelihood activities of certified grassroots stakeholder groups were obtained from the Loitoktok office register book for Ministry of Gender, Children and Social Development (MoGCS).

First, the total number of registered groups was 1153, among them 389 self-help groups, 340 women groups and 122 youth groups, with the rest being other smaller community groups (Figure 2). The self-help number is higher because it includes both women groups and mixed young men/women groups funded by both the WEF and YEDF. This confirms existence of a communication linkage between government, fund management agencies, extension officers and the stakeholder groups within a rural setting based on official registration. This established linkage is used to gain financial benefits and vocation advice. However it can also serve as the main avenue for adaptation knowledge transfer to the certified resource users.

Secondly, while it may be easy to assume that rural communities organize themselves into informal amorphous groups near urban centers, data records show that the registered groups are found in every location and division within the district. These are 249 groups in Kuku, 246 in Rombo, 167 in Kimana, 139 in Entonet, 52 in Mbirikani and 16 in Lenkism. The difference in number could be due to many factors, the most important one being distance from area to district headquarters where all financial and administrative services are located. The presence of registered groups in every location of the district reveals that the network is not just concentrated near the town centre and can be utilised to transmit adaptation information to the remotest corner of the district through official contacts.

Thirdly, out of a total of 1153 registered groups in the district, the highest aggregations are found in farming (130), business activities (106), and livestock keeping (51) (Figure 3). However, only 34 groups were involved in environment related activities, mainly tree nurseries. Due to the high dependence of economic livelihoods on natural resources, the vulnerability of the community to negative climate change effects will be increased should resource specific adaptation measures not be implemented.

Even though, this investment situation can externally be aggravated by lack of political stability, inefficient and intransparent bureaucracies, corruption and bad governance. The main local problem is poor coordination between agencies and the network complexity that obscures efficient assessments of all economic activities at the grassroots. Thus despite positive results on stakeholder participation, evaluation of the register revealed several weaknesses that could hinder implementation of any adaptation strategy in the district. Laxity in data capture of the groups during registration resulted in incomplete data entries, common being missing registration dates. Also, 284 groups did not have the location data and 503 groups did not have the activity data recorded. Such attitude in the administration stakeholder networks indicates ignorance of the importance of proper record keeping which could affect coordination during follow-up, support or audit activities. Since the office lacks a computer, manual data capture in books could also cause such mistakes through inconsistent data entry by the personnel. This can be solved by introducing a computer with a database management program that will create a form to capture essential details during registration of community groups. That will establish a standard data capture method; facilitate assessment of group activity, and ensure effective communication between stakeholders.

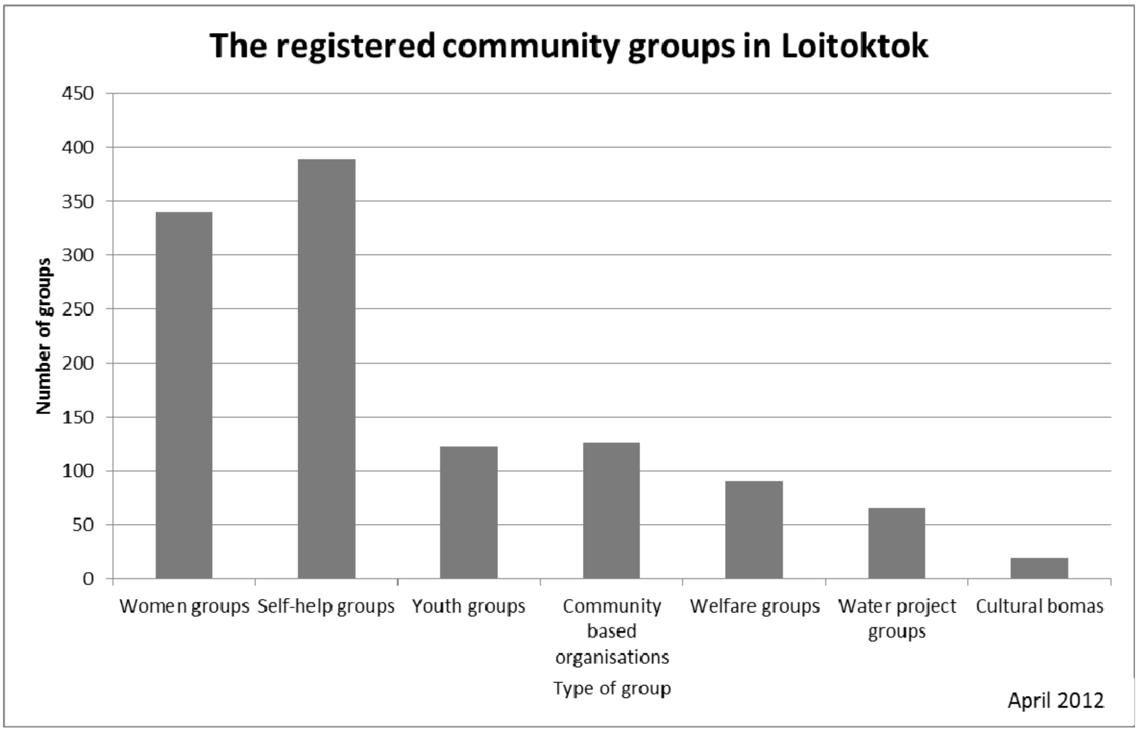


Figure 2: Graph indicating registered community stakeholder groups in Loitoktok district

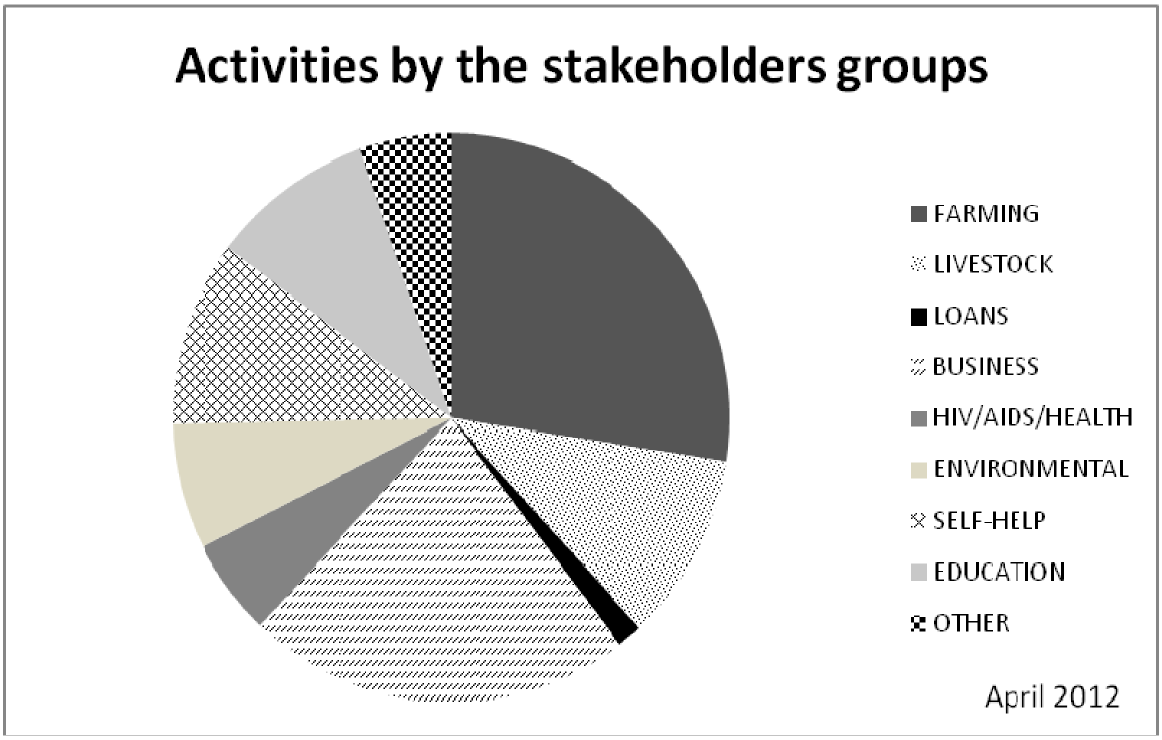


Figure 3: Diagram showing diversity of registered stakeholder group livelihood activities.

It is predicted that ultimate damages of climate change may significantly affect economic growth (Lecocq and Shalizi, 2007) and thus also affect those who utilise natural resources in their livelihoods. The revolving fund business model lacks a strong component of environmental monitoring/evaluation of natural resources and transfer of climate adaptation knowledge

The challenge is therefore to develop adequate institutional frameworks to help to overcome the barriers and create conditions in favour of beneficial outcomes.

***Developing adaptation opportunities through 'climate friendly' business model***

The potential for adaptation and alleviation of an adaptation deficit relies on social structures, institutional capacity, knowledge and education, access to infrastructure and, financial resources (World Bank, 2010). Hence, an ideal planned adaptation process requires a policy framework that integrates human development with adaptation strategies, policies and 'climate friendly' economic measures to enhance survival as climate change progresses (UNDP, 2005). Social structures formed in the adaptation process (self-help, alternative action paths, and social rules) serve as a basis for cooperation between governments, citizen groups and business (Figure 4). Whereby, institutions help to create information and conditions as well as taking steps that will help to reduce vulnerability to climate risks or to exploit opportunities (Rodima-Taylor et al., 2012; Stern, 2006). If climate stress requires actions to maintain resilience that individuals cannot achieve, efforts to exceed a critical mass of social capital to compensate for climate stresses need to be merged (Figure 4). In addition, while climate change poses new emerging challenges for African countries, it has also provided new opportunities for both public and private investments which, if embraced, can create new development opportunities and drive economic growth. For example, Kenya would benefit immensely from carbon markets; however, many Kenyans are still not aware of these opportunities and how they work. Hence there is need to raise the investment awareness among entrepreneurial citizens on issues such as renewable energy from a business oriented perspective (Mutimba et al., 2010). Since if adaptation is mainstreamed into core decisions, sustainability of any funded businesses will increase and ensure that the economic activities are not at odds with climate risks both now and in the future (AMCEN, 2011).

For example, the Ministry of Environment and Mineral Resources (MoEMR) can deploy ecologists or environmental managers to the different fund agencies to vet business proposals before they are implemented and give recommendations on acceptable business practises (Figure 5). Also, using the local stakeholder database and the already created business forums, MoEMR can be able to train mobilized stakeholder groups collectively on resource-specific adaption measures as well as teach comprehensive environmental education instead of relying on cumbersome bureaucratic procedures to mobilize people. In addition, the National Environmental Management Authority (NEMA) can disseminate simple evaluation forms to extension and fund officers to monitor local environmental effects of financed projects. As an incentive, projects that substantially reduce climate vulnerability, or are identified as priorities in national adaptation strategies like green energy proposals, can be given preferential treatment (Burton et al., 2006).

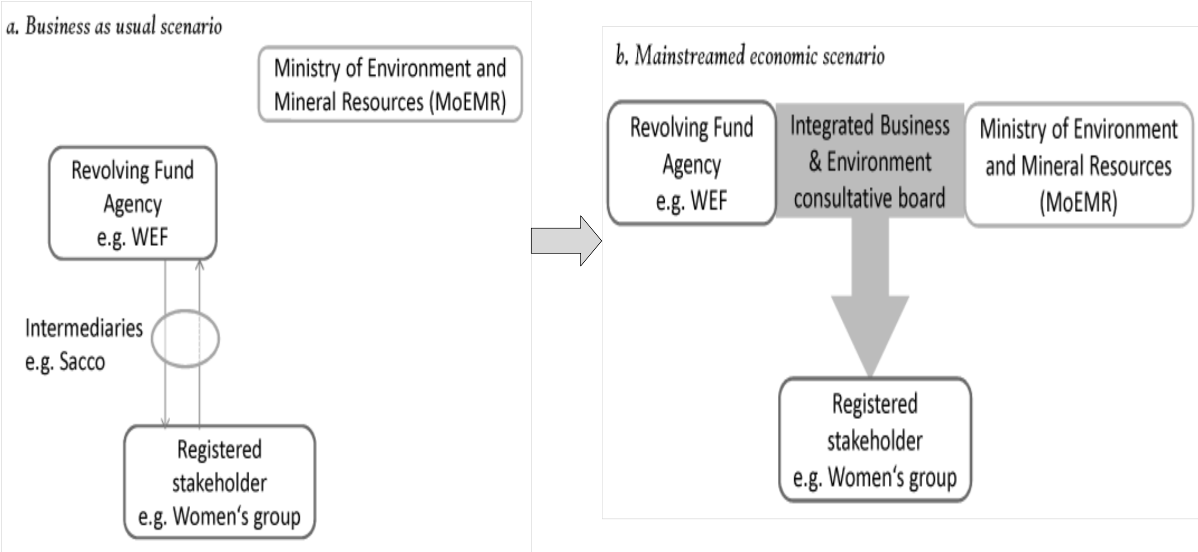


Figure 4: Diagram showing (a) current 'business as usual 'scenario and (b) a proposed 'mainstreamed' business model.

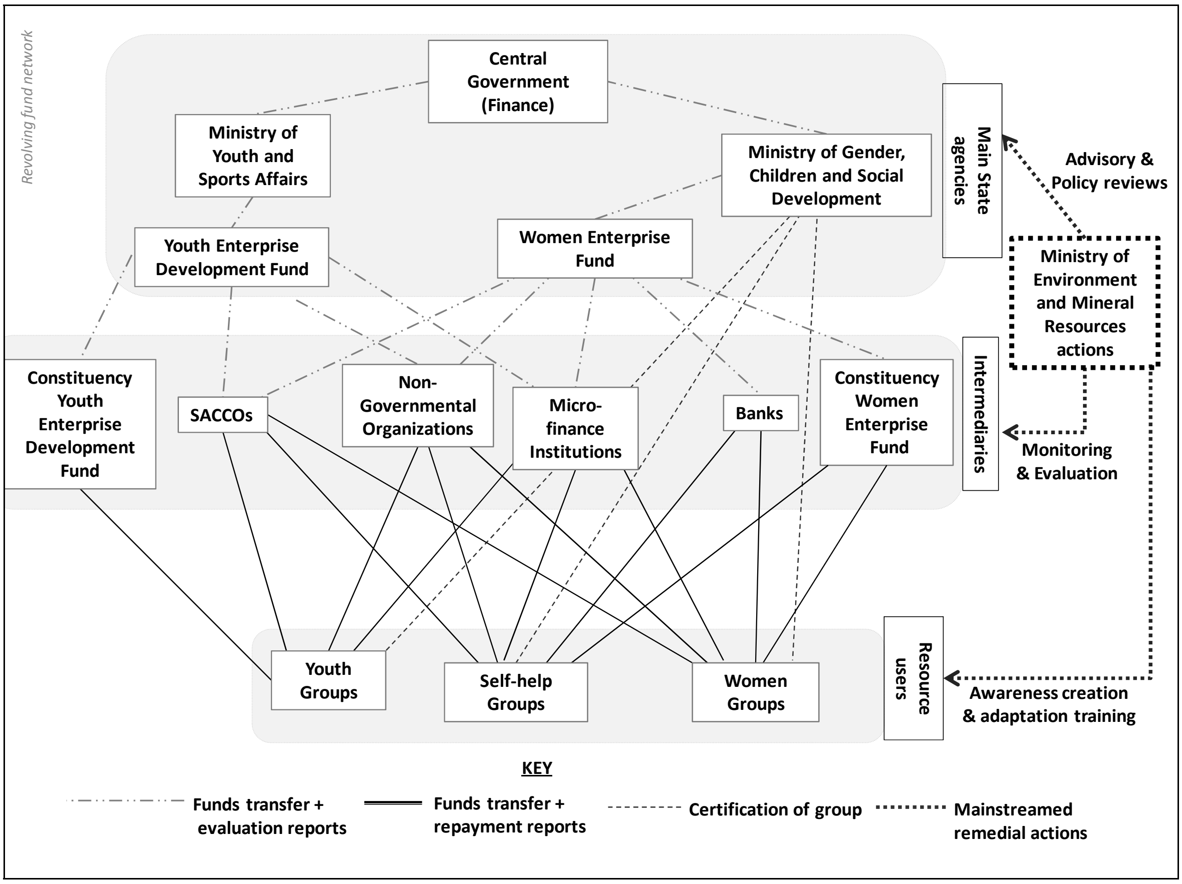


Figure 5: Diagram showing how adaptation policies and strategies can be mainstreamed into the revolving fund schemes.

Since these schemes are only a few years old, working through the development process might be the most direct and effective tactic of discouraging investments that heighten climate vulnerability and promote those that strengthen climate resilience making (Burton et al., 2006).

***Conclusion***

Emphasizing WBGU (2001), participation of all actors in adaptation should be accompanied by education and training measures that address adaptation concerns and priorities successfully and cost-effectively across economic development decision-making levels. Experience suggests that the necessary competencies can only be slowly improved and that many of the requirements are cumulative, involve tacit and uncodified knowledge to expand avenues of integrating economic development, adaptation and sustainable use of resources. By using the established revolving fund scheme network, information about climate change and predicted resource scarcity, relevant adaptation measures and investment opportunities, can be transmitted to constructively engage policy-makers, stakeholders, and the public. Thereby, lowering adaptation deficit and reducing administrative costs to create an empowered citizenry.

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