RESILIENTAFRICA NETWORK

ROUND 2 RESILIENCE INNOVATION CHALLENGE

2014-2017

SOUTHERN AFRICA RESILIENCE INNOVATION LAB

RESILIENCE INNOVATION CHALLENGE FOR FOOD SECURITY AND IMPROVED INCOME GENERATION (RIC4FIG)

GRANT STRUCTURE AND GUIDELINES

(December 2014)

grants.ranlab.org

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1. Overview

1.1 RAN

ResilientAfrica Network (RAN) is one of the eight university-based Development Labs making up the Higher Education Solutions Network (HESN) established by the United States Agency for International Development (USAID) and existing within its Global Development Lab (http://www.usaid.gov/GlobalDevLab). RAN's core partners include Stanford University, Tulane University, and the Centre for Strategic and International Studies (CSIS). Within Africa, RAN brings together 20 Universities in 16 countries. The Network is led by Makerere University in Kampala, Uganda and the secretariat is located at Makerere University's School of Public Health. RAN is structured around four core establishments referred to as Resilience Innovation Labs (RILabs) which include: the Eastern Africa RILab (EA RILab) based in Uganda and hosted by Makerere University, the West Africa RILab (WA RILab) based in Ghana and hosted by the University for Development Studies, the Horn of Africa RILab (HoA RILab) based in Ethiopia and hosted by Jimma University, and the Southern Africa RILab (SA RILab) based in South Africa with University of Pretoria as host. By applying science, technology, innovation, and partnerships, and using evidence-based approaches, RAN seeks to identify, develop and scale innovative solutions that will strengthen the resilience of African communities afflicted by natural as well as man-made shocks and stresses (http://www.ranlab.org). The RAN development lab was launched in November 2012.

RAN has three main objectives: 1) To design and operationalize a scientific, data-driven, and evidence-based resilience framework for sub-Saharan Africa; 2) To strengthen resilience at the individual, household and community levels through innovations; and 3) To enhance resilience-related knowledge generation and sharing. RAN's Vision is 'Resilient African communities through innovative solutions', while its Mission is 'to strengthen resilience of African communities through university-led, local, innovative solutions using evidence-based approaches respectively'. RAN defines resilience as the capacity of people and systems to mitigate, adapt to, recover and learn from shocks and stresses in a manner that reduces vulnerability and increases well-being.

Rationale for the RAN: Development and humanitarian aid have been historically project based. Although these efforts have saved lives, they have not sufficiently built resilience of target communities to recurrent shocks and stresses. This is the reason why the same shocks and stresses result in the same consequences year in and year out. RAN seeks to break these negative cycles by tapping into the adaptive capacities of target communities to strengthen their resilience to challenges affecting them. Therefore, RAN's primary reason for existence is the identification, development and piloting of resilience building innovations, and bringing these to scale so as to significantly impact on communities in sub-Saharan Africa.

1.2 RAN's Resilience Framework

RAN has elucidated a theoretical framework for its approach to developing innovations to strengthen resilience. This is summarized in the figure below:

Figure 1: The RAN resilience framework

Theory of Change:
RAN's Theory of Change states: 'The resilience of people and systems in Africa will be strengthened by leveraging the knowledge, scholarship and creativity that exists across the Resilient Africa Network to incubate, test, and scale innovations that target people and/or communities' capabilities and reduce their vulnerabilities as identified by a scientific, data-driven, and evidenced-based resilience framework for sub-Saharan Africa'.

Upon reasonable development and testing, the innovations incubated by RAN shall, together with the target communities, be translated into 'resilience interventions' and scaled in representative target populations. RAN's assumption is that the effects observed in the test populations can be replicated and brought to scale in other communities that share similar development challenges in sub-Saharan Africa. We postulate that if the 'right innovations' (hence interventions) are applied to a reasonable degree of scale in target communities (i.e. that a 'substantial' proportion of the population in the target communities 'adopts' them), they will significantly contribute to 'improving' the resilience of these communities. We emphasize community participation and we are using the term 'strengthening resilience' other than 'building resilience' because we believe that communities will not start from zero-there is existing strength and background resilience (in form of adaptive capacities) in the communities on which we shall build. The impact of resilience interventions on communities should be measurable. Successful innovations/interventions are expected to impact on at-least one or more building blocks of resilience in the target communities. These

'building blocks of resilience' shall be in the form of measurable 'resilience dimensions' and will be described later.

1.3 RAN's Resilience Innovation Challenges (RICs)

A strategy for sourcing, developing and scaling resilience interventions

RAN seeks to source, develop and scale transformative innovations that strengthen the resilience of communities against natural and man-made shocks and stresses, in line with RAN's thematic areas of focus. In order to effectively tap into the immense innovation potential available not just on the African continent, but globally, RAN supports resilience innovation challenges where the best ideas and/or solutions will receive grants to further develop these projects towards achieving widespread usage and reaching full scale. RAN is using two main approaches to source for innovations: 1) crowd-sourcing and, 2) design-thinking based co-creation (DTCC).

The crowd-sourcing approach is a bottoms-up approach that underscores RAN's conviction that great ideas come from everywhere and from anyone, hence acknowledging the existence of promising prototypes/proof of concepts under development within RAN universities and in-country innovation hubs and other community sources, including stakeholders in target communities. Using open innovation exhibitions as a method of crowd-sourcing ideas, RAN identifies such prototypes and brings them under incubation, providing the teams with mentorship, technical and financial support to catalyze further development, and piloting of the innovations, through RAN's Resilience Innovation Acceleration Programme (RIAP). Innovators will also be supported to conduct assessments to evaluate the efficacy of their technologies or approaches so as to improve the evidence base for optimization and scaling.

The DTCC approach on the other hand is a top-down approach where RAN uses an intervention strategy process to conceptualize and launch innovative solutions designed for impact and scale and to prioritize interventions by identifying those with the highest transformative potential for the most pressing resilience challenges in target communities. This approach is based on Stanford's ChangeLabs framework. Through this process, and working with domain experts and stakeholders within target communities, RAN is able to identify the most potentially impactful intervention pathways and potential projects within these pathways. This information is then used to develop resilience innovation challenges that attract multi-disciplinary teams of innovators/interventionists within network universities and target communities to develop solutions. Proposed solutions with demonstrable potential to impact on resilience will then be supported with incubation grants.

Our two-pronged approach to sourcing innovations allows us to draw upon expert judgment on intervention priorities but at the same time allowing us to tap into the enormous innovation potential of independent innovators (including those from target communities), better positioning RAN for resilience impact. This call is seeking innovative solutions to resilience challenges that have been identified and developed using the DTCC process. The intervention pathways guiding this call are explained in detail in Section 3.

1.4 The SA RILab

SA RILab Vision Statement:

The vision of the Southern Africa RILab is to have African communities that are resilient to the shocks and stresses affecting their livelihoods, making use of innovative solutions to their context specific resilience challenges. The SA RILab envisions resourceful people in target communities that effectively harness individual and community agency, local adaptive capabilities, and innovative solutions to diversify their livelihoods in a manner that guarantees food security and sustainable income generation.

SA RILab Philosophy:

The Southern Africa RILab will contribute to strengthening the resilience of communities by nurturing and scaling innovations with the highest transformative potential. It has applied a data driven methodology to identify resilience priorities in target communities and select intervention pathways with the highest potential on communities. RAN will tap into the massive capacity of university scholars and other innovator communities to ideate and co-create solutions to development challenges in local communities. The SA RILab will also partner with target communities and professional innovators to provide solutions to these challenges using science and technology. Throughout the intervention process, the RILab will use a recipient people-centered design approach that takes into account the local application of proposed solutions. Given the complexities of resilience challenges of target communities, RAN and the SA RILab in particular will apply a systems approach to developing interventions in which critical change levers in the system are used as the basis for identifying the most potentially impactful intervention pathways. The ultimate aim of these interventions is to strengthen resilience to food insecurity and limited opportunities to generate income in target communities in Zimbabwe, Malawi and South Africa.

Description of Target communities

Zimbabwe-Beitbridge

Beitbridge district is one of the three major urban settlements of Matabeleland South Province of Zimbabwe. The district is plagued with recurring drought making rain fed agriculture unprofitable. Many people have therefore diversified out of agriculture into harvesting forest products for both subsistence and commercial purposes. The people mainly grow drought tolerant crops such as millet and sorghum. The recurrent droughts have drastically reduced their contribution to household income, as herds are continually lost due to the decline in pastures. Other livestock such as goats, sheep, donkeys, pigs and chicken are also raised for sale and domestic consumption.

Wage employment within the district is low with most of the people in wage employment employed as migrant workers outside the district within or outside the country such as South Africa and Botswana. Most of the migrant labourers are men, leaving the women as heads of households. The remittances from migrant labour constitute an important source of household income. Other livelihoods include the sale of amacimbi (mopane worms) home brewed beer and crafts. Some engage in cross border trading. However, the major livelihood is cattle ranching.

Frequent droughts in Beitbridge are a cause of low agricultural production, food insecurity and poverty in this district. The dry environment does not promote crop production hence food shortages are a common feature. The dry environment promotes *mopane*, marula and baobab trees from which the community derives livelihoods. From these trees the community harvests *mopane* worms, baobab and *marula* fruit for consumption and sale. Harvesting and selling of *mopane* worms is mostly done by women and children. High unemployment levels in Beitbridge partly due to lack of industries has resulted in people occupying themselves at the border offering services such as clearing goods and other service jobs. As a result of these high levels of poverty, unemployment and low agricultural productivity which lead to sex trade, Beitbridge has one of the highest prevalence of HIV/AIDS in Zimbabwe.

Malawi-Chikwawa

Chikwawa District is located in the Southern Region of Malawi and borders Blantyre (to the north east), Mwanza (to the north), Thyolo (to the east), Nsanje (to the south) and Mozambique (to the west). Agriculture is the mainstay of the local economy of Chikwawa, with over 80 percent of the population working as smallholder farmers, with an average landholding size of 0.8 Ha per farm family.[1] The major types of food crops grown include maize, rice, sorghum and millet. In terms of cash crops, Chikwawa is a leading producer of sugar, pigeonpeas, cotton, cowpeas and groundnuts.

On a yearly-basis Chikwawa District experiences the flooding of the Shire River, as rains from the Shire Highlands and the Thyolo Escarpments move down the Shire River, displacing communities that reside close to the Shire River, which is an important source of livelihood. Apart from floods, Chikwawa also experiences prolonged dry spells every year. The persistent floods and dry spells have made the households in the district to suffer from chronic food insecurity; hunger and malnutrition in the households and community. For the majority of the households, the main way of addressing the food insecurity is through the sale of household labour to other wealthier members of the communities (i.e. through working in other people's farms in other communities). Due to the scarcity of employment opportunities, some women are forced to exchange sexual favours with local farm managers so as to secure jobs on the local sugar estates as daily labourers. This puts them at an increased risk of contracting HIV, thereby fuelling HIV and AIDS in the community.

South Africa- Ga-Dikgale

Dikgale Community is under Polokwane Municipality in the Limpopo Province. The Dikgale community comprises 23 villages, with an estimated population of more than 90000 people and a population density of 116 per square km. Although drought-prone, the main economic activity within Dikgale is agriculture in the form of livestock farming. A large proportion of adults are migrant workers, while others work as farm labourers on neighbouring farms, or as domestic workers in nearby towns. Many are also pensioners. The unemployment rate in the area is high, particularly amongst the youth. A few households have water taps within their homes, but most must fetch water from taps situated at strategic points around the villages. Most households have a pit latrine within their yards but there is no organized waste disposal. Infrastructure in the villages is poor and few of the roads are tarred. Both infectious, including HIV/AIDS, and non-infectious diseases are prevalent in the area. Most of the

deaths in the 15-49 year age group in Dikgale are as a result of the HIV/AIDS pandemic. Under-nutrition is common and a large proportion of children are stunted. Despite the identified vulnerabilities in this community, a large number of community members are resilient and have good health status and reasonable quality of life.

South Africa- Pyramid

Pyramid is predominantly a farming area situated along the Old Warm Baths Road and it is approximately 22 km north of Pretoria, South Africa. Most of the land is used for commercial farming or light industrial activity on plots. It has a population of 31 150 people with 9372 households (Stas SA projections in 2013 based on 2011 census). The community is comprised mostly of makeshift houses known as shacks, and single rooms with poor ventilation and sanitation. Most of these make-shift houses are occupied by the farm workers and plot workers. It is a community with a high prevalence of HIV and AIDS and high rate of prostitution. There is high level of poor educational attainment with most of the adult population without a high school qualification. Many residents do not have identity documents which makes accessing grants difficult. There are a number of foreigners living in the area who are prepared to work for very low wages. There is also a high level of unemployment. All these contribute to a high level of poverty in the community.

1.5 The SA RILab priority resilience issue

The SA RILab focuses on mitigating the effects of food insecurity and low income generation as a consequence of weak resilience to livelihood disturbances related to ecological and socio-economic stressors. This thematic area of focus was identified through an extensive baseline literature review that focused on identifying resilience issues that affect the largest section of the population in the SA RILab network countries. This was a crucial step in RAN's resilience framework.

This round of Resilience Innovation Challenge is being hosted by the Southern Africa RILab that is based at the School of Health Systems and Public Health, University of Pretoria, South Africa. Partner universities constituting the SA RILab include Universities of Pretoria and Limpopo in South Africa, and the Lilongwe University of Agriculture and Natural Resources (LUANAR) in Malawi. To facilitate the resilience building process within the countries hosting these institutions, RAN has identified four communities where its core resilience challenges are highly prevalent. The four communities include two in South Africa, one in Zimbabwe and one in Malawi.

2.0 The Southern Africa RILab Resilience Innovation Challenge for Food Security and Improved income Generation (RIC4FIG)

2.1 The Resilience gap

Southern African countries including South Africa, Malawi and Zimbabwe have suffered many stresses in recent years which have exposed people to various vulnerabilities. The multiple stresses have risen from current climatic hazards, poverty and unequal access to resources, food insecurity, globalization trends (including impact of global financial crisis), social and political conflicts and incidences of diseases such as malaria, tuberculosis and HIV and AIDS. Many of these shocks and stresses are knit in close and complex ways, as some of them are consequences of the vulnerabilities they have created.

As an example, HIV/AIDS has been a major source of stress to communities in Southern Africa with South Africa having the highest prevalence in the world (Prevalence among adults 15-49 is18.8 per cent)[2], Zimbabwe has more than 14% of women and men aged 15-49 infected with HIV and the national adult HIV prevalence in Malawi is 11%. HIV/AIDS is responsible for reversing decades of economic and social development and causing rural disintegration.[3] AIDS-related deaths of the most economically valuable members of communities – young adults – contribute to economic and social disruptions that can affect agricultural activities, land use, and land tenure. AIDS-related mortality and morbidity can negatively impact on household income and exacerbate pre-existing poverty. In particular, people living with HIV face impaired productivity, declining income, and increasingly difficult choices among essential but competing expenses, such as food versus health care. HIV-related morbidity and mortality reduce labour resources, increase the care burden for affected households which may limit ability to evacuate assets during floods, reduce dependency patterns, and simultaneously increase dependency ratios within households.

When a household loses a productive member to HIV or any other reason, the household may have less income which subsequently leads to food insecurity. Food security is the capacity of households to procure a stable and sustainable basket of adequate food. It cannot be understood in isolation from social protection, sources of income, rural and urban development, nutritional knowledge, education, access to land, water and electricity as well as changing household structures. HIV/AIDS and other losses of life affect food security through negative effect on human capital, financial capital and social capital. Further, lower household earning potential, less education and fewer assets can also affect food security. Rather than take control of their destiny, many people have been reported to be solely dependent on social grants and social safety nets and thus developing a pervasive sense of 'entitlement' that is associated with weakened resilience.

While some people eventually succumb to these complex vulnerabilities of living in poorly-resourced environments exposed to the hazards of climate variability in addition to existing high burden of various chronic diseases, others recover from the shocks/stresses and learn from the situation, such that they are able to maintain their livelihoods and increase their well-being. Understanding this adaptive capacity or resilience in target communities is

important to promoting the well-being of all people living in poverty. Such an understanding gained from a series of community consultations and expert consultations have particularly helped in informing the potential intervention pathways that are detailed in this call as being able to strengthen resilience in the target communities. Vulnerable communities, where people are unable to buffer themselves from hazards for a number of reasons, have a low ability to cope with short-term shocks (such as drought and flooding) and to mitigate chronic stressors (such as HIV/AIDS, unemployment), which in turn means that the negative impacts on livelihoods resulting from inadequate coping strategies are significantly high. A detailed content analysis of data generated from community consultations in these regions resulted in the identification of the following resilience dimensions that would inform the SA RILab's resilience challenge call. The issues affecting the Southern Africa region and local adaptive capabilities have been summarized into 9 resilience dimensions: 1) Wealth, 2) Social capital, 3) Human capital, 4) Infrastructure, 5) Psychosocial well-being, 6) Security, 7) Governance, 8) Health and 9) Environment(See Appendix 1). This call (RIC4FIG) serves as a catalyst for filling the identified resilience gaps so as to reduce vulnerabilities and enhance well-being in target communities.

2.2 The RIC4FIG call

This call focuses on the sourcing, developing, and scaling of transformative technologies and approaches that will strengthen resilience to food insecurity and limited opportunities for income generation that are associated with climate variability and limited infrastructure overlay by high burden of HIV/AIDS. In particular, SA RILab is looking to select and incentivize the development of solutions that will impact on entrepreneurial and life skills, agricultural production and access to markets, as well as promote livelihood diversification while ensuring improved financial inclusion and community engagements. Grants ranging between US$15,000 to US$35,000 are anticipated to be awarded in Phase 1 of this call. Winners of Phase 1 Grants will then qualify to compete for Phase 2 grants (which will likely range between US$35,000 to US$65,000); while winners of Phase 2 grants may subsequently compete for Phase 3 grants (Awards will likely range between US$75,000 and US$125,000). The grants will support development of innovative approaches and technologies that will strengthen resilience to food insecurity and limited opportunities to generate income arising from climate variability and limited infrastructure within target communities in the Southern African region. [**Note: RAN reserves the right to change the projected award amounts or the number of anticipated awards at any time**.]

The Southern Africa RILab will fund projects in three priority intervention pathways for building resilience to food insecurity and limited opportunities for income generation in target communities, including those communities affected by high burden of HIV/AIDS:

- **Intervention Pathway 1: Improve Life and Entrepreneurship skills (changing mindset while providing entrepreneurial skills set!)**
  In our communities, there is lack of education and skills and the inability of people to get employment in skilled or better paying jobs. This limits human capital in the face of adversities. In addition to over-reliance on social grants and other social safety-nets provided by government and non-governmental organizations, there are psycho-social problems, including stigma associated with disease such as HIV/AIDS that is eroding social capital. Unemployment in particular has also created a 'hopeless' situation

particularly among the youth and some youths engage in criminal acts to 'survive'. Owing to their desperate situation, some members of the communities also resort to drug abuse. We are looking for solutions that will empower target communities with life and entrepreneurial skills that promote optimism (positive outlook) and a sense of self-determination while encouraging community connectedness (a social infrastructure).

- **Intervention Pathway 2: Diversify local economy for resilience**
  The target communities are highly dependent on rain-fed subsistence farming that is vulnerable to adverse effects of climate variability. Nonetheless, the communities have a lot of potential to thrive under this natural resource limitation. This is evident from years of positive adaptation and coping strategies. However, adaptation is constrained by limited livelihoods options and limited financial inclusion and engagement. We are looking for solutions that will substantially empower target communities by diversifying their livelihoods using simple but highly profitable farm and non-farm businesses and solutions that also create opportunities for better financial inclusion through savings and access to credit.

- **Intervention Pathway 3: Transform agricultural practices and markets for resilience**
  Most of our communities rely on agriculture for livelihood. However, because of prolonged dry spells, drought and sometimes floods, the agricultural methods employed are usually not effective to grow sufficient crops and raise livestock. The communities are stuck in a cycle of low productivity and skewed markets in which they have limited leverage. Therefore, we are seeking innovations that will make changes to the current situation.

This round of innovation challenges anticipates the following outcomes:

Table 1: Anticipated outcomes of the proposed interventions

Final outcomes	*Intermediate outcomes*
1. Vibrant and diverse local economy 2. Food security 3. Reduced poverty 4. Reduced psychological stress 5. Wealth for all 6. Economic empowerment 7. Sustainable income for farmers 8. Job creation 9. Healthy communities 10. Stronger community structures 11. Sustainable access to financial services	1. Increased agricultural skills 2. Improved agricultural production 3. Increased sustainable local businesses 4. Improved mind-sets and attitudes to life 5. Improved income 6. Diversified and sustainable livelihood 7. Increased economic activities created and accessible to households, particularly to female-headed households 8. Diversified resilience skills 9. Increased access to requisite information 10. Increased social and productive capital 11. Increased adoption of improved technologies for production and post-harvest processing 12. Increased productivity and diversified

	agricultural system. 13. Improved nutrition. 14. Improved distribution of chronic medication, including ARVs 15. Improved access to high-value markets 16. Improved marketing skills 17. Improved quality of farm produce for the market 18. Reduced crime, including drug abuse 19. Increased capacity-building 20. Increased strategic planning 21. Increased supportive institutional framework for financial inclusion and engagement

Key Dimensions of Change:
The planned intervention will contribute to creating change through 10 'change dimensions', aligning with 5 resilience dimensions:

Table 2: Dimensions of change for the proposed interventions

Resilience dimensions addressed	Change dimensions
Human capital	1. Further education and skills training
	2. Entrepreneurship skills development
Wealth	3. Livelihood diversification
	4. Financial inclusion and engagement
	5. Diversified income generation through enterprise
Governance	6. Participatory governance
	7. Community initiatives with joint ownership
Agriculture/Environment	8. Agricultural practices with value addition
	9. Vibrant agricultural markets
Psychosocial	10. Life skills

2.3 Objectives of the RIC4FIG Call

Southern African communities that experience recurrent shocks and intermittent stresses such as high burden of HIV/AIDS, drought and flooding are largely dependent on subsistence agriculture and face the challenge of non-diversification. The SA RILab Resilience Innovation Challenge Grants are designed to achieve the following objectives:

General Objective:

To strengthen resilience of target communities by building their agency to promote life and entrepreneurship skills, diversify to profitable enterprises, and to improve farming skills and take more control of the agricultural value chain in ways that are sustainable and expands financial inclusion.

Specific Objectives:

The specific objectives of the SA RILab call are:

1. To transform the communities so as to have a vibrant local economy driven by skilled and positive-minded people who are capable of creating opportunities for themselves and their communities.
2. To strengthen local economy by introducing diverse approaches and strategies for a sustainable living.
3. To transform agricultural processes in order to increase agricultural production and access to high value markets.
4. To improve access of poor communities to financial services.

The RIC4FIG organizers and partners strive to provide a round of grants that lead to resilience building around these five objectives.

3.0 RIC4FIG Grants: Structure, technical overview and schedule

3.1 Overview of the grant structure

RIC4FIG anticipates identifying and funding up to six (6) project teams addressing any of the challenges described under the intervention pathways in sub-section 3.2 of this call. Teams will be selected based on the quality of their applications which will be evaluated to ascertain resilience building potential, potential for transformative impact, scalability, feasibility, and viability. Each successful team will receive a RIC4FIG grant to support the development of their proposed idea dependent on their current status and progress. The RIC4FIG grants are structured into three distinct and progressive phases where each phase has specific implementation requirements and funding levels:

- The first phase is the 'Solution Development'(prototyping Phase);
- The second phase is the 'Piloting' Phase; and
- The third and final phase is the 'Scaling' Phase.

Progressing from one phase to the next will be competitive and will be incumbent on successfully meeting the requirements of the previous phase based on set evaluation criteria as detailed in Section 6 of this call. Out of the 6 teams that are anticipated to receive Phase 1 funding, it is anticipated that only the best three (3) will be selected to receive Phase 2 funding, and only the best two of these three are anticipated to be selected to receive Phase 3 funding. Additionally, to be selected, teams will have to demonstrate the extent to which human capacity development aspects have been mainstreamed into their activities for increased individual and community level agency, as well as green technologies and approaches where appropriate. This requirement underscores RAN's belief in the power and agency of the individual community member as a critical aspect of resilience building and sustainability. By mainstreaming human capacity development and increased agency we mean proposed solutions should contain a component for understanding and promoting the community's 'know-how' to apply the solution, empowering them to manage their affairs without necessarily always relying on external support, and ensuring access by marginalized groups like women and youth.

By 'green technologies and approaches' we mean solutions that on the whole are eco-friendly and contribute to better protection of the environment and conservation. (NOTE- All selected projects will also be subject to internal USAID environmental review before Awards are made at each phase.)

The anticipated dates for all phases of the competition are provided in Table 3.

Phase 1: Solution Development Phase

Competition for Phase 1 shall be open to all eligible individuals or entities. The call will be opened on the 1st of December 2014. A panel of judges will select up to six finalists based on the merit of their applications (Evaluation criteria provided in Section 6). The 6 finalists will each receive a Phase 1 grant. Participants will use this grant to develop a 'proof of concept'

or a 'preliminary prototype' of the proposed solution. The concept should demonstrate technical feasibility and viability of the proposed solution, either with a physical simple prototype (for technology based ideas), a viable unit process (for physical processes), or a viable concept (for conceptual approaches).

Phase 2: Development of a refined optimized prototype and pilot testing

Phase 2 grants will only be awarded to a sub-set of winners of Phase 1 grants upon verification of the prototype plausibility, functionality and potential for adoption (awardees will provide visual, video or text-based evidence of results depending on the type of idea). A subset of up to 3 grantees are anticipated to be selected for award of a Phase 2 grant, based on projects that demonstrate clear potential for resilience building from Phase 1. *[Note: Respondents to the general call cannot apply directly for this set of grants. These grants will be competed for by Phase 1 grantees only, upon satisfactory completion of deliverables for Phase 1]*. Participants will use this grant to develop a refined optimized prototype that is ready for deployment on a larger scale. They should pilot it on a smaller scale and optimize it further to a level that is viable for multiplicative use and scale.

Phase 3: Larger scale testing, business model development and scale

Phase 3 grants will only be awarded to a sub-set of winners of phase 2 grants upon verification of a refined optimized prototype (for technology based solutions) or a refined technically plausible concept(for solutions in form of approaches or models) that is scalable and with clear transformative potential. A subset of 2 grantees are anticipated to be selected for this award, based on projects that demonstrate clear scalability and transformative potential from phase 2 development. Participants will use this grant to implement their business model, test their prototype or approach on a wider scale and position it for resource multiplied scaling for transformative impact. *[NB: Respondents to the general call cannot apply directly for this set of grants. These grants will be competed for by Phase 2 grantees only, upon satisfactory completion of deliverables for Phase 2.]*

3.2 Call structure and pathway description

The Southern Africa RILab has identified three priority intervention pathways that have a high transformational potential to impact resilience strengthening around food insecurity and low income generation:

- **Intervention Pathway 1: Improve Life and Entrepreneurship skills**
- **Intervention Pathway 2: Diversify local economy for resilience**
- **Intervention Pathway 3: Transform agricultural practices and markets for resilience**

Each pathway comprises one or two resilience innovation challenges, hence a total of four innovation challenges as detailed below:

Intervention Pathway 1: Improve life and Entrepreneurship skills

Entrepreneurship is important to the economic and social development of a community. Through innovation, entrepreneurs create new, competitive markets and businesses which lead to job creation and have a multiplying effect on the economy. Potential entrepreneurs in the Southern African communities are constrained by the lack of entrepreneurial skills and the limited access to finance/start-up capital. The few existing entrepreneurship programs are not always well-tailored to their needs. Upgrading skills can be a key channel to improve productivity and incomes in the informal economy and open opportunities to link with the formal economy. The majority of our communities have limited entrepreneurial skills, the effect of which is exacerbated by lack of supportive life skills. According to the WHO[2], life skills are abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life. This intervention pathway seeks solutions to develop models and approaches or technology for promoting life and entrepreneurship skills in target communities in South Africa and Malawi. This is to remove the pervasive sense of entitlement and hopelessness, while creating innovative approaches to promoting entrepreneurship. It is hoped that any such interventions would engage community by leveraging on existing traditional platforms for community engagement.

Innovation Challenge 1: Life and entrepreneurship skills development

Develop models and approaches or technologies for promoting life and entrepreneurship skills that would reduce vulnerability to food insecurity and promote opportunities for income generation taking into account specific contexts in target communities in South Africa and Malawi.

Community contexts

- ***Context 1: South Africa****-two target communities with one being rural and the other peri-urban. Specifically a semi-arid rural area, but both communities are characterized by lack of skills, unemployment, poverty, substance and alcohol abuse, high burden of HIV/AIDS, high crime rate, high dependence on government-sponsored social grants, lack of infrastructure including distant clinics and poor sanitation and water services.*
- ***Context 2: Malawi****- a rural setting with persistent drought and floods, high dependence on agro-economy, limited employment opportunities and high burden of HIV/AIDS.*

Intervention Pathway 2: Diversify local economy for resilience

Although prone to climatic hazards, such as drought and floods, the main economic activity within our communities is agriculture in the form of small scale subsistence farming. Many subsistence farmers have a large number of cattle, but cattle are regarded as status symbol and decision to dispose of them even when in need is often difficult to make. A large proportion of adults particularly in target communities in South Africa and Zimbabwe are migrant workers, while others work as farm laborers or as commercial sex workers. The unemployment rates in all these target communities are high and people are reliant on social grants or social safety nets provided by governmental and non-governmental organizations to keep food on the table. Despite these vulnerabilities, some people have taken advantage of community savings and credit schemes (stokvels, 'merry-go-round') to create new businesses. This intervention pathway seeks solutions that disrupt the status quo of overdependence on

rain-fed agriculture by diversifying their livelihoods using simple but highly profitable farm and non-farm businesses and solutions that also create better financial inclusion through savings and access to credit. This intervention pathway specifically takes into account the context in the three countries in which our target communities are located.

Innovation Challenge 2: Enterprise development for livelihood diversification

Develop contextually responsive models for launching highly profitable businesses that would reduce vulnerability to food insecurity and promote opportunities for income generation in target communities in South Africa, Malawi and Zimbabwe.

- *Context 1: South Africa- Semi-arid areas, lack of skills, high burden of HIV/AIDS, unemployment, poverty, substance and alcohol abuse, high crime rate, high dependence on government-sponsored social grants, relatively high teenage pregnancy, lack of infrastructure and poor sanitation and water services.*
- *Context 2: Malawi- Persistent drought and floods, high burden of HIV/AIDS, heavy dependence on agriculture and limited employment opportunities.*
- *Context 3: Zimbabwe context- Semi-arid, persistent droughts, border community with inefficient customs services, cash proceeds from cattle sale pens attracts commercial sex workers to point of sales, high burden of HIV/AIDS, large number of female-headed households and limited livelihood options.*

Intervention Pathway 3: Transform agricultural practices and markets for resilience

Communities that experience shocks and stresses arising from drought and sometimes flooding are largely dependent on subsistence farming. Small farm sizes, low technology, low capitalization, and low value addition tend to increase vulnerability to food insecurity.[3] Lack of direct access to buyers, and low price leverage all affect farmer incomes from produce. This intervention pathway seeks solutions that disrupt the status quo by substantially building the agency of rural farmers to take more control of efficient agricultural production process, as well as the agricultural markets. The pathway has two innovation challenges.

Innovation Challenge 3: Scaling sustainable agricultural practices

Develop low cost environmentally friendly approaches and technologies to increase agricultural yield per acreage

- *Context 1: Malawi- Persistent droughts and floods, high burden of HIV/AIDS, high dependence of subsistence farming and limited employment opportunities.*
- *Context 2: Zimbabwe- Semi-arid, droughts, border community, high burden of HIV/AIDS, female-headed households and limited livelihood options.*

Innovation Challenge 4: Catalyzing Agricultural markets

Develop models or approaches for agricultural markets of the future that promote new types of networks and distribution methods to catalyze enterprise and narrow the gap from farm to market.

- *Context 1: Malawi- Persistent drought and flood, high burden of HIV/AIDS, high dependence of subsistence farming and limited employment opportunities.*
- *Context 2: Zimbabwe- Semi-arid, droughts, border community, female-headed households and limited livelihood options.*

3.3 RIC4FIG Grants: Technical overview of the Innovation Challenges

Intervention Pathway 1: Improve Life and Entrepreneurship skills

Innovation Challenge 1: Life and Entrepreneurship Skills Development

Context 1: Develop models and approaches or technology for promoting life and entrepreneurship skills that would reduce vulnerability to food insecurity and promote opportunities for income generation in vulnerable communities in South Africa.
Two of our communities are in South Africa; Pyramid in Pretoria and Dikgale in Limpopo. The main economic activity within both communities is agriculture. In both communities, most people are farm laborers because there is limited skills and lack of productive land ownership which limits those who wish to practice agriculture. Large proportions of adults in both communities are migrant workers, or work as domestic workers in nearby towns. Most of the members of the two communities lack sustainable livelihood opportunities. There is low level of education and lack of skills which lead to high unemployment rates, particularly for the youth. Communities are over reliant on government social grants for income and this has been associated with high teenage pregnancy. Examples of possible projects include but are not limited to:

- *New approaches that will remove the sense of entitlement and hopelessness*
- *New approaches that will give entrepreneurship and business skills with life skills as an integral component*
- *Models that will make use of existing business potential, low cost small business ideas and marketing skills*
- *Models that will encourage attitudinal change and disseminate information on opportunities for business and employment*
- *Youth friendly and gender sensitive approaches*

Context 2: Develop models and approaches or technology for promoting life and entrepreneurship skills that would reduce vulnerability to food insecurity and promote opportunities for income generation in vulnerable communities in Malawi.
Chikwawa community is a drought and flood prone community. These bring about hunger, food insecurity and malnutrition in the households and community. For the majority of the households, the main way of addressing the food insecurity is through the sale of household labour to either wealthier members of the communities (i.e. through working in other people's farms in other communities). The need to get employed fuels HIV and AIDS in the community as some women exchange sexual favours in order to be employed as daily labourers in some local sugar estates, thereby putting them at an increased risk of contracting HIV. Examples of desirable solutions include but are not limited to:

- *Novel platforms for effective entrepreneurship and life skills training*
- *Models that will create novel non-monetary incentives for community life skills education, including learning to take responsibility for own health*

Intervention Pathway 2: Diversify local economy to strengthen resilience

Innovation Challenge 2: Enterprise development for livelihood diversification

Context 1: Develop responsive models for launching highly profitable businesses that would reduce vulnerability to food insecurity and promote opportunities for income generation in vulnerable communities in South Africa.

Dikgale and Pyramid communities rely on farming either subsistence farming or working on large farms as farm labourers. In Dikgale, most people keep livestock, such as cattle and goats which are used to cope in times of need. Lack of diversification in the communities is driven by either a lack of trade skills to try non-agricultural businesses or a pervasive fear of risk taking due to lack of entrepreneurial skills. Over reliance on social grants as an income source is another problem of non-diversification. Potential solutions could include but are not limited to:

- *Approaches to creating service related markets e.g. spaza shops, recycling*
- *Models to strengthen stokvels to mobilize resources for small businesses and savings*
- *Models for empowering small livestock farmers to create profitable companies from goat milk production (value addition)*
- *Models for private sector sponsored local business projects.*

Context 2: Develop responsive models for launching highly profitable businesses that would reduce vulnerability to food insecurity and promote opportunities for income generation in communities vulnerable in Malawi.

Apart from drought and floods which are rationales for livelihood diversification in Malawi, rising population which puts pressure on land for cultivation is another motivation. As a major livestock producing area of Malawi, pests and diseases are problems facing the livestock subsector of agriculture. The main problem within livestock is the frequent occurrence of foot and mouth disease. As the main livelihood source, the negative effect of drought and floods on agriculture is increased levels of food insecurity, hunger and malnutrition. Increasing land pressure is an important source of vulnerability since declining farm sizes has not been accompanied by agricultural diversification or intensification.[4] The purpose of this call is to create viable defaults for livelihood diversification for this community so as to reduce their dependence on subsistence farming and to increase their incomes. We are looking for innovations that are highly attractive, with faster returns but lower negative consequences for households in the community. Examples include but are not limited to:

- *Technology mediated service oriented business enterprises*
- *Models, approaches, or platforms for outsourcing business for rural youth*
- *Profitable business from green energy*
- *Profitable drought independent small-scale enterprise defaults*

- *Create a business around a community based remote sensing and early warning of floods*
- *Responsive mobile based financial services and products*
- *Innovations or platforms to facilitate saving in households*
- *Models that channel savings directly to pre-determined low risk investment*
- *Novel approaches to make water from flooding available during drought*

Context 3: Develop responsive models for launching highly profitable businesses that would reduce vulnerability to food insecurity and promote opportunities for income generation in vulnerable communities in Zimbabwe.

Frequent droughts in Beitbridge are a cause of low agricultural production, food insecurity and poverty in this district. The dry environment does not promote crop production hence food shortages are a common feature. The dry environment promotes *mopane*, marula and baobab trees from which the community derives livelihoods. From these trees the community harvests *mopane* worms, baobab and *marula* fruit for consumption and sale. Harvesting and selling of *mopane* worms is mostly done by women and children. High unemployment levels in Beitbridge partly due to lack of industries has resulted in people occupying themselves at the border offering services such as clearing goods and other service jobs. Potential solutions could include but are not limited to:

- *Novel approaches that will harness natural resource products e.g. mopani worms, baobab fruit, watermelons*
- *Models, approaches, or platforms for outsourcing business for the youth*
- *Organised marketing*

Intervention Pathway 3: Transform agricultural practices and markets for resilience

Innovation Challenge 3: Scaling sustainable agricultural practices

Context 1: Develop low cost environmentally friendly approaches and technologies to increase agricultural yield per acreage in Malawi

In particular, the heavy dependency on rain-fed subsistence agriculture makes the majority of households vulnerable to erratic rainfall. Unpredictable and erratic rainfall exposes farmers to the risk of drought or flooding each year.

Examples of Possible projects

- *New approaches for increasing yield of drought tolerant agro-forestry*
- *Innovative approaches for drought and flood early warnings*
- *Low cost farming implements that make production more efficient*
- *Technologies or approaches that will increase surface irrigation for small scale farming*
- *Technologies that improve post-harvest processing*

Context 2: Develop low cost environmentally friendly approaches and technologies to increase agricultural yield per acreage in Zimbabwe

Beitbridge is characterized by semi-arid conditions and droughts. There is low agricultural production owing to drought hence there is widespread production of livestock, particularly cattle and goat production. People in the area own large herds of cattle, goats and donkeys and liquidate their livestock and other assets to support urgent household needs. However, cattle are a status symbol in the district. As a result, some households find it hard to make a decision to dispose of cattle to access important services, even when they are in need.

Examples of Possible projects

- *New approaches for increasing livestock value addition e.g. milk products*
- *New approaches for increasing yield of drought tolerant agro-forestry for fodder*
- *Alternative energy*
- *Technologies or approaches for rain water harvesting and efficient use of the water, including harnessing water from the Limpopo basin to support vegetable, gardens and small livestock*
- *Technologies that improve post-harvest processing*

Innovation Challenge 4: Catalyzing Agricultural markets

Context 1: Develop models or approaches for agricultural markets of the future that promote new types of networks and distribution methods to catalyze enterprise and narrow the gap from farm to market in Malawi.

Smallholder farmers in Chikwawa produce low volumes of agricultural produce and face seasonality in production. The volumes produced by smallholder farmers are usually too small to attract meaningful demand. On the other hand, reliance on rain-fed agriculture confines farmers to seasonal production due to the unimodal rainfall pattern experienced in the country. Seasonality in production contributes to fluctuations in supply making it impossible for farmers to sustain supply as demanded by most buyers. Farmers often do not comply with grades and standards as required by the markets. The non-compliance to grades and standards results in low prices offered to farmers. Some of the challenges are related to poor transport and storage infrastructure, poor market information system, low literacy level and poor business skills, scattered and disorganised production and marketing arrangements, poor access to extension services, unregulated contract farming, policy incoherence related to for example export licenses for agricultural exports. There are also gendered issues related to access of markets by women farmers relating to women's access to inputs, bargaining power in trade and access to better markets that are further away.

Examples of possible projects

- *Introduce innovative farmer business schools within the communities to train farmers on how to take farming as a business.*
- *New approaches to subsistence farmer networking to multiply capacity for price leverage and produce stabilization in markets.*
- *New and transformative platforms that completely change the location of agro-produce markets from 'near the buyer' to 'near the farmer'*

Context 2: Develop models or approaches for agricultural markets of the future that promote new types of networks and distribution methods to catalyze enterprise and narrow the gap from farm to market in Zimbabwe context.

Livestock production is the main type of agriculture practiced in Beitbridge. The main challenges however are to establish improved livestock marketing facilities and coordinated sales in rural areas and to disseminate information on prices and market requirements to small scale producers.

Examples of possible projects

- *Introduce farmer business schools within the communities to train farmers on how to take farming as a business.*
- *New approaches to subsistence farmer networking to multiply capacity for price leverage and produce stabilization in markets.*
- *New and disruptive platforms that completely change the location of agro-produce markets from 'near the buyer' to 'near the farmer'*

3.4 Innovation challenge grants and additional costs

3.4.1 Grant amounts

This call comprises four (4) resilience innovation challenges, with RIC grants anticipated to be awarded as follows:

- A total of six (6) grants will be awarded in Phase 1 (Anticipated award range: US$15,000-35,000)
- A total of three (3) grants will be awarded in Phase 2 (Anticipated award range: US$35,000-65,000)
- A total of two (2) grants will be awarded in Phase 3 (Anticipated award range: US$75,000-125,000)

NOTE: **RAN reserves the right to change the projected award amounts, or the number of anticipated awards, at any time. The release of this call does not obligate the RAN to make any awards.**

3.4.2 Official currency

All currency quotations in the call for Round 2 of the Resilience Innovation Challenge should be in United States Dollars (US$).

3.4.3 Resources beyond the award

Awardee teams shall be responsible for costs of all research and development, prototyping, travel, and shipping expenses that exceed the grant amount awarded in this call. Grant money and other reimbursement amounts will be paid through a sub-award agreement with the RAN and are subject to the availability of funds. RAN reserves the right to determine the grant

amount awarded to a particular team and to vary grant amounts among selected finalists based on RAN's analysis of the proposed project budget and the availability of funds. The Judging Panel, RAN and USAID reserve the right to reassess the technical requirements and performance evaluation criteria, or to cancel the availability of the grants at any time.

However, RAN is fully cognizant of the fact that bringing successful interventions to full scale may in some projects require many more resources than can be provided by the RAN. As part of the mentorship process, RAN will provide support to grantees in Phase 2 and 3 on development of viable business models and mobilization of external funding from interested agencies, especially for interventions that are clearly impactful on the communities.

3.5 Implementation schedule

Table 3 provides an overview of the call schedule

Table 3: RIC4FIG call schedule

Milestone	Dates
Phase I:	
Call open for Concept Note applications	1st December 2014 – 30th January 2015
Dedicated Question and Answer Periods	1st December 2014 – 15th December 2014 and 5th January 2015 – 23rd January 2015
FAQs posted online	3rd December 2014
Applicant support Webinar	9th December 2014
Concept Note submission deadline	30th January 2015
Evaluation of concept notes and pre-selection of applicants	31st January 2015 – 27th February 2015
Shortlisted applicants develop full applications	3rd March 2015 – 31st March 2015
Evaluation of full applications	1st April 2015 – 30th April 2015
Grants awarded and finalists announced	1st May 2015
Implementation period	5th May 2015 – 5th November 2015
Phase I Evaluation	6th November 2015 – 26th November 2015
Phase II:	
Finalists Selection (from Phase I grantees) including preparation of Phase 2 action plans	27th November 2015 – 14th December 2015
Phase 2 Grants awarded	15th December 2015
Implementation period	17th December 2015 – 16th September 2016
Phase II Evaluation	17th September 2016 – 30th September 2016
Phase III:	
Finalists Selection (from Phase II grantees) including preparation of Phase 3 action plans	3rd October 2016 – 14th October 2016
Phase 3 Grants awarded	17th October 2016
Implementation period	18th October 2016 – 15th August 2017
Phase III Evaluation	16th August 2017 – 29th August 2017
Reporting, project close out and dissemination for scale (Phase 3 projects)	1st September 2017 – 22nd September 2017

4.0 RIC4FIG Grants: Eligibility, terms, and conditions

4.1 Rules for eligibility

4.1.1 Concept Note stage

4.1.1.1 Teams of university students, faculty and student-faculty collaborations from established universities worldwide are eligible to apply.

4.1.1.2 Organizations are also eligible to apply. Potential applicant organizations may include foundations, NGOs, faith-based organizations, private businesses, business and trade associations, colleges and universities, community based organizations and civic groups. All applicants in this category must be legally recognized entities, formally registered under applicable law.

4.1.1.3 Teams of individuals that are not university students are also eligible to apply.

4.1.2 Full Application Stage

In addition to meeting the requirements set out in 4.1.1 above, the following eligibility requirements will also apply to teams that will be shortlisted after the concept note stage and invited to submit full applications.

4.1.2.1 Organizations must be legally recognized entities, formally registered under applicable law, and they should attach evidence to that effect on their application.

4.1.3 General

4.1.3.1 Entities that are ineligible to apply include: Government agencies (local and foreign), non-incorporated entities (informal organizations), and individuals not affiliated with any legally recognized entity as specified in 4.1.1 and 4.1.2 above. Individuals interested in applying for the RIC4FIG are encouraged to form teams in line with the requirements given in 4.1.1 and 4.1.2 above. Other entities ineligible to apply include any individuals or organizations participating in, linked to, or sponsoring subversive activities including criminal acts, terrorism or related activities. A background check will be conducted on all teams applying for the grants for their status regarding USG blacklisted individuals and entities and for the legal nature of their affiliate organization.

4.1.3.2 Colleges, universities, and research facilities that are funded by, and/or affiliated with, a foreign government are not considered a foreign government.

4.1.3.3 Grants may not be awarded to an organization from, or with a principal place of business in, a country subject to trade and economic sanctions administered by the Office of Foreign Assets Control (OFAC) of the United States Department of Treasury or to any individual or entity subject to targeted trade and economic sanctions administered by OFAC. For more information see OFAC website: http://www.ustreas.gov/ofac/. The current list of OFAC restricted

countries includes Iran, Syria, Cuba, North Korea, and Sudan. However, the list of countries subject to OFAC restrictions may change, and RAN will conduct a final eligibility determination prior to award. All USAID restrictions pertaining to US Government funding apply.

4.1.3.4 The RAN Resilience Innovation Challenge seeks applications that have an operational focus in low-income and middle-income countries, as defined by the World Bank (http://data.worldbank.org/about/country-classifications/country-and-lending-groups). The implementation of the project including pilot and testing will be done in the countries covered by the Southern Africa RILab – South Africa, Malawi and/or Zimbabwe.

4.2 The RIC4FIG Teams

4.2.1 A "Team" refers to a group of individuals working on a particular RIC4FIG challenge. Each Team must select a designated Team Leader who will serve as the primary point of contact for this team on all matters related to implementation of the grant, and correspondence. The Team Leader should be the individual responsible for day-to-day project management and should be reasonably accessible to respond to different tasks related to implementation in case the team is awarded. He/she should be an adult (at least 18 years of age) in sound mental state.

4.2.2 If invited to submit full applications, teams must submit a Letter of Commitment from each team member as part of their submission documents. In this letter, each organization or individual must submit in writing their commitment to participate in project activities, specifying their exact role in the project. Further, the letter should specify the nationality of each individual. For individual organizations or affiliate organizations the country where they are incorporated should be specified.

4.3 Intellectual Property

Any Intellectual property that shall be created or generated jointly by the parties shall be jointly owned by the parties in accordance with their inventive contribution to such Intellectual Property. All awardee teams shall grant to Southern Africa Resilience Innovation Lab (SA RILab) and its affiliates (these include USAID, Makerere University and partner universities) a non-exclusive, royalty-free, perpetual license to use any resultant or derived intellectual property (e.g. product, service, or technology) that will be developed using the RIC4FIG grants, for development work.

Each Team must clearly delineate any intellectual property included in the application that was previously developed by the Team, to which the Team wishes to protect as proprietary data. Such intellectual Property must be clearly marked as proprietary data and it is the duty and obligation of the Team to protect such proprietary data.

All proceeds accruing from commercialization of IP generated via RIC4FIG grants, following the conclusion of the grant period, will be negotiated on a case-by-case basis amongst the parties, but in line with existing IP policies of the SA RILab partner universities.

5.0 Submission of applications

5.1 Application submission

Submission of applications will be done online at grants.ranlab.org/. All applications must be submitted via this platform and RAN will not accept applications submitted via any other means. Complete instructions on how to submit applications are provided on the website. Applicants must ensure that their applications are successfully submitted on the platform in their entirety, and they will receive a confirmatory email from the online platform as proof that their application has been successfully submitted. If the Applicant experiences any difficulty with submitting an application through the online Application Platform, the Applicant should send an e-mail to the Southern Africa RILab RIC4FIG support team at: support.sarilab@ranlab.org

5.2 Rules governing submission and participation

5.2.1 Applications must be written and submitted in English.

5.2.2 Applications must be submitted via the web-based platform at grants.ranlab.org/. Those submitted via regular mail, facsimile, or email will not be accepted.

5.2.3 **Complete concept note applications must be submitted by the RIC4FIG call Concept Note submission deadline (5:00 pm South Africa Time on 30th January 2015) using the online platform (grants.ranlab.org).** No additions or modifications to the applications will be accepted after this submission deadline.

5.2.4 **Full applications must be submitted by the RIC4FIG Full Application submission deadline (5:00 pm South Africa Time on 31st March 2015) using the online platform (grants.ranlab.org).** No additions or modifications to the applications will be accepted after this submission deadline. This deadline applies to only those applicants who are invited to submit full applications after the concept notes are evaluated.

5.2.5 RAN bears no responsibility for any transmission errors associated with electronic submissions.

5.2.6 If no application meets the required threshold to receive a grant, the call may be reopened at the sole discretion of RAN, the SA RILab, and USAID.

5.2.7 Liability: Participants agree to assume any and all risks, and waive claims against RAN and its related entities and partners for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in this innovation challenge.

5.2.8 Teams can submit more than one application. In such instances, each of the different projects will be submitted and reviewed separately.

5.3 Applicant support

5.3.1 Questions during the pre-submission period

Applicants will have an opportunity to pose questions regarding the innovation challenge or any part of the application process. The question submission period will run from 1st December 2014 to 15th December 2014 and from 5th January 2015 to 23rd January 2015. Applicants may submit questions to support.sarilab@ranlab.org during this timeframe. The Questions and Answers will be posted on the FAQ section on the platform website (grants.ranlab.org) by 3rd December, 2014. Note that Applicants can reach the SA RILab at any time via our support email, support.sarilab@ranlab.org.

5.3.2 Webinar

RAN will host a public webinar on 9th December, 2014 to allow potential RIC4FIG applicants to ask any pertinent questions and seek clarifications for anything that may not be clear regarding the call. The connection and schedule details for this webinar will be posted on grants.ranlab.org.

5.4 Information required from applicants

5.4.1 Basic applicant information

Through the Online Application Platform, applicants are asked to input details regarding their Team, to participate in the RIC4FIG call. The information is being collected for demographic purposes only and will not affect the evaluation of the application. This information will not be used for any other purposes other than those related to this call. The following information will be collected:

- Name and full address of the Team
- Teams applying as organizations that are registered legal entities should indicate the name of organization and include the country where the organization is incorporated/registered. Such teams will be required to upload documentary evidence of official incorporation.
- All teams should indicate particulars of the team leader as their Point of Contact (name, position title, telephone number, e-mail address)
- Names of other organizations/firms that are partnering on the application
- Short profiles of key team members highlighting their expertise and experience

5.4.2 Technical information

Concept note phase

- Concise application title
- Intervention Pathway, Innovation Challenge and country/context applied for
- A brief description of the proposed solution, indicating what is innovative about the solution given the current state of knowledge, how the solution aligns with the proposed theory of change as given in the technical details for each innovation challenge in Section 3.0

- Application form limited to 8000 characters (approximately 1,500 words or 3 pages of single spacing, font size 12)

Full Application phase

- Concise application title
- Intervention Pathway, Innovation Challenge and country/context applied for
- A description of the proposed solution, indicating what is innovative about the solution given the current state of knowledge, how the solution aligns with the proposed theory of change as given in the technical details for each innovation challenge in Section 3.0, and how the implementation of the solution would be structured and positioned for success, taking into account the need to build agency and adopt 'green' technologies and approaches, where appropriate for overall success and sustainability.
- Project Budget: Teams will be required to upload their proposed activity budget and Gantt chart detailing their proposed activities and timelines. Guiding templates for this information will be available on the online application platform. At this level, teams will be expected to budget only for Phase 1 funding. Budgets should be itemized based on the activities to be undertaken to provide necessary deliverables for Phase 1 funding. Thereafter, a summary budget that re-categorizes key costs in the following categories should be derived from the detailed budget:
  a) Personnel Costs
  b) Travel/Transportation
  c) Equipment
  d) Supplies
  e) Administrative and other Costs
- Application form limited to 30000 characters (approximately 5,000 words or 10 pages of single spacing, font size 12)

Phase II and Phase III

- Phase I evaluation reports
- Phase I deliverables (technical, financial and administrative)
- Work plans and Budgets for subsequent activities (either pilot or scaling activities for phase II and III respectively)
- M&E plan

6.0 Judging applications and selection of finalists

6.1 Judging phases

The RIC4FIG grant is a 3-phased grant where teams advance from one phase to the next based on expert evaluation. Each stage focuses on different aspects within the innovation development timeline and as such, different evaluation criteria will be used for the different stages. Table 4 below provides a summary of the different phase-specific evaluation criteria.

6.2 Judging panel

6.2.1 The Judging Panel is responsible for evaluating applications for alignment with RAN's theory of change with respect to strengthening resilience to shocks and stresses arising out of food insecurity and low income generation. The Judging Panel is comprised of highly qualified and impartial judges with expertise in the technical domains in which the intervention pathways lie (i.e. agriculture, development, markets, behavior change, engineering, financial services etc.), resilience building, development programming, business modeling, and user-centered design approaches. The Judging Panel is also drawn from various sectors including academia, civil society organizations, the private sector, public sector, development partners and USAID national and regional representatives. RAN and USAID retain the sole and absolute discretion to declare the finalists and award all grants in this call. Any such decision may not be challenged by any entrant.

6.2.2 All members of the Judging Panel will sign Non-Disclosure Agreements and Conflict of Interest Forms, as well as statements acknowledging that they make no personal claim to the intellectual property developed by Teams or relevant partners.

6.3 Phase-based evaluation criteria

The following criteria will be used to evaluate applications at the three different stages of the RIC4FIG call.

Table 4: RIC4FIG Evaluation Criteria

Phase I (Concept Note)		
Evaluation Criteria	**Evaluation Aspects**	**Maximum Score**
Alignment to RIC4FIG pathways and RAN's theory of change for strengthening resilience	Does the proposed solution address the desired resilience outcomes for the selected challenge? Does it strengthen human capacity development?	20%
Technical Approach and Methodology	Is the proposed solution innovative? Does it have the potential to disrupt/transform current practices and approaches? Does it constitute a paradigm shift?	50%
Viability and applicability to local communities	Is it viable for local communities? Can it be replicated in similar contexts?	20%
Environmental sensitivity	Are proposed approaches and technologies (where appropriate) green and pro-natural resource conservation?	10%
Phase I (Full Application)		
Evaluation Criteria	**Evaluation Aspects**	**Maximum Score**
Alignment to RIC4FIG pathways and RAN's theory of change for strengthening resilience	Does the proposed solution address the desired resilience outcomes for each innovation challenge? Does it strengthen human capacity development?	20%

Technical Approach and Methodology	Is the proposed solution innovative? Does it have the potential to disrupt/transform current practices and approaches? Does it constitute a paradigm shift?	40%
Viability and applicability to local communities	Is it viable for local communities? Can it be replicated in similar contexts?	25%
Environmental sensitivity	Are proposed approaches and technologies (where appropriate) green and pro-natural resource conservation?	15%
Phase II		
Evaluation Criteria	**Evaluation Aspects**	**Maximum Score**
Technical feasibility	Is the approach or technology technically feasible? Is the solution cost-effective and innovative compared to existing alternatives? Does it have transformative potential? Has it been optimized for efficiency? Have unintended consequences been identified and strategies to amplify or mitigate these been put in place?	40%
Business model and Market viability	Have market assessments been done? Has the business model been refined to reflect the market trends? Is the refined diffusion strategy sufficiently plausible?	30%
People (user) aspects	Is the solution user-friendly? Is it easily adoptable? Is it acceptable given the socio-cultural dynamics? Have aspects that require human behavior change been addressed? Has the desired behavior been adequately cultivated? Have agency aspects been promoted?	30%
Phase III		
Evaluation Criteria	**Evaluation Aspects**	**Maximum Score**
Technical Feasibility	Has the technical approach been optimized? [By optimization, we mean that the prototype or concept is developed to a model with acceptable or better efficiency than the existing technical standard (e.g. 75% validity for screening tests, 75% efficiency for engines, sufficiently acceptable aesthetics, dexterity	15%

	and ergonomics (for technology based prototypes) or sufficiently proven cause-effect linkages, input and process considerations and clearly established potential confounders (for a conceptual approach based solution)]	
Evidence of adoption	Have a critical number of users adopted and continued to use the solution? Does the solution demonstrate additional positive spin-offs and/or a paradigmatic shift?	25%
Market viability assessment	Is the solution viable given the operational context? Has the business model been refined to maximize scaling potential?	25%
Awareness of and strategies to address/comply with policy and regulatory requirements	Does the team demonstrate sufficient actionable knowledge on the policy and regulatory environment that could impede or catapult scaling of the innovation? Have appropriate strategies to address policy or regulatory impediments been designed?	10%
Stakeholder buy-in	Have critical partnerships for implementation and scale been identified? Has commitment to participate been sought and received favorable response?	25%

6.4 Selection of Phase I finalists

Once the application period closes, a team of reviewers/judges will assess all submitted applications using the evaluation criteria given in this section. Incomplete applications will excluded from the evaluation process. The evaluation process will proceed in multiple stages:

Concept note stage

- The reviewers will assess all submitted concept notes in line with the evaluation criteria given in Table 4, and identify an initial shortlist across the different innovation challenges, selecting the top tier applications per innovation challenge. These teams will be invited to submit full applications.

Full application stage

- ***Stage 1:*** The reviewers will assess all submitted concept notes in line with the evaluation criteria provided in Table 4 and shortlist the top tier applications per innovation challenge.
- ***State 2:*** The shortlisted teams will make a live pitch to the judges and respond to various questions posed to them by the judges. These questions will have arisen out of their written submissions and will include any issues flagged for clarification by the reviewers, as well as any ad-hoc questions arising from the live pitch. The pitch sessions will be conducted either face-to-face or using appropriate communication technologies.

- ***Stage 3:*** RAN will consult with relevant technical and geographic experts within USAID and final selection decisions will be made.

6.5 Notification of award

Successful Teams will be notified by e-mail and telephone to their designated point of contact. Successful teams and their affiliate organizations will also be profiled on the grant website: grants.ranlab.org/.

6.6 Tracking your application

The grant website will contain information on the status of the applications at the different stages. Tracking will be provided for the entire batch of applications and not for individual applications.

7.0. RIC4FIG Innovator Support: Capacity Building and Mentorship

Selected finalists will be enrolled into RAN's incubation support program run by the Southern Africa RILab. The RILab will offer technical support to the teams as they develop solutions in line with their awards.

7.1 Induction activities

Successful applicants will be taken through a brief pre-award induction period, to set the pace for their working relationship, scheduling and ethics with RAN. This process will include:

- *Induction meeting:* A brief induction meeting to agree on methods of work, milestones and award disbursements. Applicants will be formally inducted into RAN's Innovation Incubation Pipeline.
- *Formation and proof of a multi-disciplinary team:* Winning teams will under-go a team composition check and will be advised on the critical composition of their team that caters for cross-discipline needs of their idea. Teams with clear gaps will be required to source additional membership to bridge gaps.
- *Contracts and IP issues:* Following the completion of revision of team composition, teams will be referred to RAN's appointed Legal team to sign an agreement for the award.
- *Work plan:* Successful teams will be required to develop a work plan for execution of the development of their idea. This work plan will be agreed upon with the SA RILab team.
- *Compulsory skills training:* Successful teams will be required to under-go some basic trainings at a convenient time when they are next offered by the RILab. Two of these courses will be compulsory for all awardee teams (Not all team members will be required to attend but each team will be represented by at least 1 team member):
    - Short course in Resilience Interventions (RI) (Equivalent to 5 credits or 1 Week): The concept of resilience is a relatively new term to many university students and stakeholders. Because RAN's primary interest is in innovations that build resilience, at least one member from all innovators initiated into RAN's development incubator will have to undergo a rapid course on 'Resilience Interventions' as a minimum standard across the RILabs
    - Short course in Design Thinking (DT) (Equivalent to 5 credits or 1 Week): RAN's approach to innovations will be driven by the 'Human-Centered Design philosophy. At least one representative from each selected team should undergo this training. The training will incorporate best practices in design of innovations that meet actual needs of communities. It will also include fail-fast approaches to rapid prototyping and clear elaboration of a theory of change.

The courses will be provided in dual mode as 'face-to-face' or as 'M-KITs' (A series of short multi-media online tutorials organized to impart specific skills) to increase their accessibility and to facilitate flexibility in time schedules of innovators, given

other academic requirements that students have. The face-to-face courses will be offered at the lab premises on a regular predictable basis (e.g., it is anticipated that the Southern Africa RILab will offer these courses on a quarterly basis). In order to build innovation capacity, the courses will be open to all students and faculty in the partner universities while the online courses/M-KITs will be open to an international audience. Detailed information on the availability and platforms for taking the M-Kits will be provided in due course. Admission to the face-to-face courses will be on a first-come-first-serve basis, although RAN innovators will be given due preference.

- *Other skills trainings:* During the design phase, teams or team mentors may realize the need for acquiring specific skills in a particular skills area. RAN will have a menu of courses ('face-to-face' and 'M-KITs') that interested teams can choose to take to enhance their capacity.

- *Mentor matching:* Innovator teams will be matched with suitable mentor(s), facilitated by the SA RILab. Mentors should be professionals with technical knowledge of the solution domain in which the respective innovator teams are working. Additional mentors may be identified in due course when the innovation has reached other stages where it requires specific expertise like an entrepreneurship plan or community testing. Mentors should as much as possible be persons with proven interest in innovation and ready to offer services and time as champions of student innovations, with minimal cost to the project.

- *Inductive brain-storming:* The SA RILab will invite the successful applicants for an inductive brain-storming session in which they will present their idea and a detailed technical critique will be provided. The RILabs will compose the teams of technical persons to critique these ideas.

7.2 Mentorship support to innovators

Although RAN's innovation awardee-mentor teams will each be expected to operate with a reasonable degree of autonomy, the RILabs will develop an incubation support program to provide continuous support to developers based on their needs at different stages. Incubation support will be provided asynchronously to the different teams and in a sufficiently flexible way to allow innovators will different needs to benefit.

Support activities will also be open to other innovators and potential innovators not necessarily in RAN's innovation pipeline, so as to build innovation capacity and team based learning. All project teams shall as a requirement propose a suitable Faculty sponsor from a recognized academic department (or equivalent academic unit) within any of RAN's network universities. The proposed faculty mentor/sponsors should be technically aligned with the team's technical requirements and will offer technical guidance and academic input into their activities. In addition to this mentor the SA RILab may, if they deem it fit, identify and attach one or more mentors in other technical dimensions needed for the proposed solution to be developed and optimized.

Mentorship support will include:

- Brainstorming/ideation/Rapid prototyping sessions for developers to refine their idea
- Elective trainings on specific skills areas identified from the developers
- Linkage to communities to brain-storm of ideas and collect additional information on prototypes and test refined prototypes
- Working space for small team discussions
- Referral linkages to specialty labs where developers can develop special components of their prototypes
- Linkage to other HESN partners offering support that is in line with their work
- Bringing on more mentors with additional expertise in specific areas
- Technical vetting of resilience and support in outlining a theory of change for each innovation

8.0 Important definitions

Adaptive capacity: The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to avert some or all of the negative effects of a shock or stress.

Institution: Refers to the leadership or governance structure for the affected community.

Livelihoods infrastructure: Refers to holdings on which households or communities depend for income e.g. gardens/crops, stored produce.

M-KITs: Refers to a series of short multi-media online tutorials organized to impart specific skills sets for innovation developers asynchronously and at a distance aimed at enhancing specific skills sets among resilience innovators. They are defined as 'high value learning objects' because they will be designed in such a way that they transmit critical technical information to develop a critical knowledge base and/or specific skills for the innovator in a relatively short period of time. [Example: An innovator from a computing class is developing a prototype for a malaria diagnostic device but he/she is not knowledgeable about sensitivity and specificity of screening tests in human beings – he/she may take a rapid course in 'Validity of Screening tests', another in 'Ethics of research on human subjects' and another in 'Phase 1, II and III clinical trials' but these will be designed only to impact the critical background knowledge so that they are well aware of the standard of practice in the public health arena when developing their prototype.]The M-Kits will be prepared and packaged by RAN's RILabs and will consist of short themed sessions using different media. An interested person may use one M-Kit (e.g. an M-Kit on 'Rapid Prototyping') within a set of M-kits (e.g. on Design thinking) or may use a complete cluster of kits which when combined form a course (e.g. on Resilience) or may use a mix of different M-Kits from different courses.

Physical infrastructure: This refers to built physical structures e.g. buildings, roads, bridges, schools, churches/mosques that are vulnerable to the effects of a shock or stress.

Risk: The probability of suffering damage (to life, property, economic disruptions and environment) from a hazard for a given area and reference period.

Resilience: RAN defines resilience as the capacity of people and systems to mitigate, adapt to, recover and learn from shocks and stresses in a manner that reduces vulnerability and increases wellbeing.

Resilience Innovation: A resilience innovation refers to a newly applied science driven 'technology' or 'approach' with the potential to demonstrably impact positively on one or more dimensions of resilience in a particular community and other communities that share similar resilience dimensions. It may be a totally new idea, or an existing idea that is applied differently of in a community where it has not been applied before.

Shock: A sudden occurrence befalling the communities, resulting in a significant challenge to their livelihood.

Stress: A slow-onset or chronic occurrence befalling the communities, resulting in a significant challenge to their livelihood

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. Vulnerability can encompass the immediate vulnerability factors as well as the causes and underlying drivers of vulnerability.

9.0 Health, safety, ethics and environment

All team members must participate in all required training and briefings required by the RAN Resilience Innovation Challenge Team, USAID, and partners, including regular briefings and team meetings. In addition to complying with applicable law and regulations, each Team is expected to employ appropriate safety precautions during technology or any other demonstrations. All teams must wear appropriate personal protective equipment if implementation of their projects requires working in environments with unhealthy exposures. In the event that the Judging Panel or facility personnel observe dangerous actions or conditions that may potentially impact the safety of the Teams or any other persons, the Resilience Innovation Challenge Team shall have the right to suspend or disqualify a Team from competing and/or advise a Team that, until the condition is corrected, testing by the Team must cease and will not be eligible as a valid grant application. All approaches or solutions that require invasive procedures on humans must undergo the appropriate institutional/ethical review processes of their respective countries. RAN will not seek ethical approvals on behalf of any awardee team; it is the responsibility of teams to do so. **However, RAN will not support sub-awardee research that involves potentially invasive procedures on human subjects without proof of ethical approval from appropriate Institutional Review Boards.** Team mentors shall provide relevant support to their teams in development of such ethics protocols as needed, as part of the incubation support process.

10.0 Monitoring and evaluation

10.1 Project M&E plans

Following the award, and as part of the incubation process, each Team will be guided to develop an M&E plan for their project. The plan will be revised at each phase for ideas that make it to Phases 2 and 3. The plan will indicate key milestones and process indicators, based on which progress in implementation will be tracked. The milestones will also determine the installments in which the grant amount will be disbursed.

The M&E plan will also include a set of output and outcome indicators to be developed in line with the respective output and outcome indicators for the specific intervention pathway, as well as the resilience dimensions targeted. These indicators should be measurable and may include both qualitative and quantitative indicators.

Assessment of the impact of innovations will be measured in two ways:

1. *At the testing and scale up stage:* Each innovator will be required to collect relevant quantitative and qualitative data on a case-study basis to show the potential utility of their innovation on the test communities, in line with the output and outcome indicators specified in the M&E plan for their project. Innovators will be supported during Level II of their incubation process to develop a theory of change, aligned with one or more dimensions of RAN's resilience framework. In addition to the in-built M&E framework for each project, innovators will be required to avail their prototypes/deliverables for inspection as part of RAN's follow-up on grant performance.
2. *Term surveys in target communities:* The RILabs will conduct periodic term surveys on study communities to assess impact of interventions on resilience.

10.2 Post award period reporting

As a condition of accepting these grants, Teams will agree to participate in reporting up to 2 years following the conclusion of their award period. RAN will require Teams to report activities related to the technology developed for the grant including, but not limited to: outputs/outcomes, fundraising, partnerships, investments in the technology, commercialization, market entry and growth. The purpose of the reporting is to allow RAN to: 1) Determine the extent to which solutions have moved to scale, 2) Determine the extent to which adopted solutions have resulted in a measurable impact on the problem (improvement through greater efficiency, cost-effectiveness, or more people reached), and 3) report relevant and required information to USAID.

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Appendix 1: SA RILab: Definitions of Resilience Dimensions on Food Insecurity and Low-Income Generation

Introduction

The resilience dimensions were derived from 8 Key Informant Interviews (KIIs) and 8 Focus Group Discussions (FGDs) in Limpopo South Africa, 7 KIIs and 4 FGDs in Pyramid, Pretoria South Africa, 7FGDs and 11KIIs in Malawi, 6FGDs and 14 KIIs in Beitbridge Zimbabwe. These Southern African countries are have suffered many stresses in recent years from current climatic hazards, poverty and unequal access to resources, food insecurity, globalization trends, social and political conflicts and incidences of diseases such as malaria, tuberculosis and HIV and AIDS all close knit in close and complex ways.
A detailed content analysis of data generated from community consultations in these regions resulted in the identification of the following 9 resilience dimensions: 1) Wealth, 2) Social capital, 3) Human capital, 4) Infrastructure, 5) Psychosocial well-being, 6) Security, 7) Governance, 8) Health and 9) Environment.

Defining Dimensions of Resilience

Tulane University led and drafted a RAN Dimension Lexicon with the aim of ensuring that resilience dimension definitions are consistent across RAN. Although the dimensions are thematically interconnected, there is considerable RILab and country specific/contextual variations. Consequently, the SA RILab has presented herein the harmonized dimension definitions given the context of its theme on food insecurity and low income generation. Aspects of these dimensions may be direct or may include other factors that could indirectly affect them (inter-relationships).

1. Wealth Dimension

Within RAN, and the SA RILab, the wealth dimension extends beyond what's normally defined as wealth to include elements of livelihoods and food security. Aspects of the wealth dimension include:

- Both financial (liquidity) and non-financial assets.
- Access to credit/insurance facilities.
- Access to non-food items necessary for survival (e.g. housing materials, clothing)
- Livelihoods – This focuses on activities required to make a living and have a good quality of life. It touches on individuals' forms of (formal and informal) employment and sources of incomes, as well as activities and choices within the household and local population that provide food, health, income, shelter and other tangible and intangible benefits, such as comfort, safety, respect and fulfillment.

2. Social capital

This dimension includes forms of connectedness among individuals, households and groups (e.g. Community networks, formal and informal institutions). It includes social networks, norms of reciprocity, mutual assistance and trustworthiness.

3. Human Capital Dimension

Aspects that comprise the human capital dimension include skills, knowledge, and labor that together enable people to pursue different strategies and achieve their livelihood outcomes - such as generating income and meeting their needs. Education level and workforce capacity are some of the indicators for ability to generate income. Therefore RAN and the SA RILab consider the Human Capital dimension to include indicators of access to quality education such as:

- Access to and quality of formal schooling including technical or vocational training.
- Mentoring of children and youth by family members and community elders (Informal education).
- Education infrastructure and materials/resources such as classrooms, textbooks, teachers among others.
- The influence of systems such as leaderships, community involvement in education and food supply on education outcomes.

4. Infrastructure Dimension

This includes the basic infrastructure or physical community or societal assets (e.g., roads, bridges, bore holes, wells, markets, railways, and telecommunications) that people use to function more productively. In particular, the dimension also makes connections between access to basic services and its effects on livelihoods and the ability of people to mitigate against shocks and stressors in the environment.

5. Psychosocial wellbeing

This dimension includes information on the cognitive and social issues that highlights the role of human agency as it relates to personal and interpersonal behaviours, including feelings of optimism/positive mind-sets, motivation, information on religious and cultural beliefs of people in this community. The dimension also makes connections between stigma and discrimination as it relates to HIV/AIDS and its effects on social capital and social networks as emerged from the data. Beliefs about the role of women and gender dimensions of HIV/AIDS in the community are also explained.

This dimension recognizes that psychological status and well-being of individuals in a community is often adversely affected in the short term, and potentially long-term, depending upon the nature and effectiveness of humanitarian assistance. This includes the ability of resumption of *normal life*, and facilitates affected people's participation in their convalescence and preventing pathological consequences of traumatic events**.**

6. Security

This includes exposure to personal and property crime, measures of solving violent conflict, and personal sense of/perceived security. In SA RILab this dimension describes aspects of existence in the community that comprise feelings of security and protection. The ability or

inability of the state to fulfill their duties to protect communities from crime as a shock is also covered. The dimension also relates the high incidence of crime in the area.

7. Governance Dimension

Governance involves:

- Activities, processes and frameworks with in which political, economic and administrative authority is exercised to manage the affairs of a country or administrative unit.
- Formal and informal mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences.
- The functioning of relevant groups in society, including private sector and civil society organizations, from household and local levels, to provincial, national and international levels.
- Issues of accountability, transparency, inclusiveness and responsiveness by governments (e.g., good governance).

8. Health Dimension

Aspects that are captured under this dimension include physical health and captures aspects such as health status-Illness/disease, access to health services; quality of health services, physical and financial access to healthcare/medical attention; and human resources for health.

9. Environment and Agriculture Dimension

This dimension captures the following aspects:

- Natural resources (e.g., soil, water, air, minerals, forest, fisheries, flora and fauna land, forests, water) and associated services (e.g., erosion protection, storm protection) upon which resource-based activities (e.g., farming, fishing etc.) depend;
- The management of natural resources: The practice of maintaining and enhancing natural resources through a variety of means, including forest and range management, agroforestry, livestock rearing, water resource management, animal waste management and coastal and river bank protection; and
- Recognition of the value of natural resources and ecosystems, prioritizing identification of natural resource concerns and addressing those concerns is critical for ensuring the lives and livelihoods of women, men and children who depend on them.

This dimension is linked with Agriculture including

- Food production and related factors– includes systems for food production and distribution and their functioning (e.g. availability of seeds for planting, type of seeds,

farm inputs, harvests/yields, livestock well-being, food markets, prices, transportation).

- Food security and related factors– includes access (physical or economic) to sufficient, safe and nutritious food to meet dietary needs and food preferences.

In the context of SA RILab this dimension describes problems of the unpredictable natural weather patterns, resource scarcity and land degradation which make communities vulnerable to poverty, food insecurity and HIV/AIDS. This dimension describes the various environmental conditions under which agricultural practices (both crop and livestock production) are undertaken as a means of earning a living. It also includes information on the various environmental risks to crops, livestock and the impact of HIV and AIDS on communities' ability to derive their livelihoods from agriculture in the presence of drought and/or floods.