



Innovations and Climate Change Adaptation and Mitigation in Uganda; Policy and Practice Recommendations.

By: Joshua Zake^a and Mosses Sekate^b

^aExecutive Director, Environmental Alert and Coordinator of PROLINNOVA-Uganda Country Platform.

^bSenior Program Officer, Environmental Alert West Nile Program.

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1.0 Introduction

This policy brief presents key recommendations for policy and practice change for advancing innovations for climate change adaptation and mitigation in Uganda. It was compiled through application of various methods and approaches ranging from review of relevant literature and synthesis, to interactive methods during which views and feedback was obtained from key stakeholders. This was as well synthesized and the results reconciled with synthesis from literature review. Several drafts were shared with key stakeholders involved in the process for validation of the content and further input before the final policy brief was published. It's a publication of PROLINNOVA Uganda and it's one of the outputs from the project focusing on, 'Strengthening Community Resilience to Change: Combining Local Innovative Capacity with Scientific Research (CLIC-SR).'

The project was implemented in Uganda for 3 years, 2012-2015 – with financial support from the Ford Foundation.

Box 1. Key selected definitions

Climate is the prevailing or average weather conditions of a place as determined by the temperature and metrological change over a period of time. Various factors determine climate and the most important are rainfall and temperature (NAPA, 2007).

Climate change refers to any change in climate over time, whether due to natural causes or as a result of human activity (IPCC, 2001a).

Climate change adaptation - refers to adjustments in practices, processes, or structures to take into account changing climate conditions, to moderate potential damages, or to benefit from opportunities associated with climate change (NAPA, 2007).

Climate change mitigation - refers to an intervention to reduce greenhouse gas (GHS) emissions or enhance GHG sinks (NAPA, 2007).

Project implementation was led by Environmental Alert for engagements in Moyo district and the National level. Were as Kulika Uganda led implementation in Nakasongola district.

The Royal Tropical Institute (KIT) provided international coordination and technical backstopping to implementing partners in Uganda.

With due consideration that climate variability and change is a reality in Uganda. Business as usual is not an option to advance adaptation and mitigation to these impacts. Farmer innovations in agriculture and natural resource management present a contribution towards community resilience through adaptation and mitigation. However, this is limited by various challenges and bottlenecks that must be addressed. This policy brief analyses these limitations and suggests targeted practical recommendations for addressing them.

Box 2. Key selected definitions

Farmer Innovation

Local (farmer) innovation refers to the dynamics of indigenous knowledge i.e., knowledge that grows within a social group, incorporating learning from own experience over generations, but also external knowledge internalized within the local ways of thinking and doing (Prolinnova, 2004 and the World Bank 2004).

2.0 Background

2.1 Climate change as a development issue

Climate variability and change is a reality in Uganda. It impacts on all sectors (such as agriculture, water, energy and transport) and over time these impacts have been felt at different levels and scales (Climate Change Policy, 2014). For a country ranked as one of the most unprepared and vulnerable in the world in respect to climate change impacts (CIGI 2007), the gravity of the impacts on livelihood and economy is even much higher.

Some of the reported impacts based on the NAPA, 2007 are: prolonged droughts, hailstorms, floods, landslides, and unreliable rainfall patterns. These present serious implications, which undo achievements of from several development efforts across the various sectors such as: Agriculture, Environment and Natural resources.

Climate change and variability is therefore a development issue, which must be part of a development initiative clearly indicating how the uncertain variations and changes will addressed through adaptation and mitigation.

Some of the implications of climate variability and change for selected sub-sectors in presented in Table 1.

Table 1. Implications of climate variability and change for selected sub-sectors in Uganda.

Sector	Implications of climate variability and change	Source
Agriculture	<ul style="list-style-type: none">Household food insecurity due to reduced crop productivity as a result of prolonged droughts, unreliable rainfall patterns and or occurrence of floods;Furthermore, droughts lower the country's productive capacity; reducing agricultural exports, increasing food prices leading to food shortages, nutritional deficiencies and an unstable macro economy.	Climate Change Policy, (2014); Zake and Kaggwa (2007) and Zake et al. (2010)

<p>Environment and Natural resources (wetlands, forestry)</p>	<p>The high rate of degradation will be escalated by climate change. Furthermore, tree mortality increases with reduced rainfall and the incidences of pest, diseases and forest fires rise. This will affect both directly and indirectly depended communities for securing their livelihoods. As a result, more effort in terms of increased rate of interventions required by the sector to ensure sustainable environment and natural resources management.</p>	<p>Climate Change Policy, (2014).</p>
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With due consideration of the implications of climate variability and change, the Government of Uganda and partners are not just seated. For about a decade, several steps and actions were implemented as proactive measures to address the impacts of climate change. Some of them include:

- i. National Adaptation Program of Action (NAPA), (2007);
- ii. Climate Change Unit (CCU) established within the Ministry of Water and Environment (MWE);
- iii. Reducing Emissions from Deforestation and forest Degradation (REDD+) readiness plan, (2011);
- iv. National Development Plan (NDP) II, 2015;

- v. National Policy on Disaster Preparedness and Management (2010);
- vi. National Agricultural Policy for Uganda (2011).
- vii. Climate Change Policy, (2014);
- viii. Climate change mainstreaming guidelines, (2014).

However, despite existence of these several policies much more effort is desired through allocation of adequate resources and capacity for their respective effective implementation to overcome the vagaries of the climate variability and change at different levels (UNDAC 2008).

2.2 The role of PID in innovation development for climate change adaptation and mitigation

2.2.1 Linkage between PID and climate change adaptation

According to PROLINNOVA International Support Team, (2009), 'PID is an approach to research, extension and above all development. Often, it is undertaken by farmers together with development agents, without the involvement of formal researchers.' PID aims at supporting and strengthening of the local experimentation process, and – in most cases – the farmers' main partners in PID will be development agents in governmental and non-governmental organizations (PROLINNOVA International Support Team, 2009).

Box 3. Participatory Innovation Development:

This is a process in which innovative solutions to farmers' problems are identified, developed and/or improved. It involves a triangulation of local knowledge of the farmers, scientific knowledge of the researchers, and field experience-based knowledge of the extension workers through joint experimentation (FAO 2011 and Prolinnova 2009).

The PROLINNOVA Network and its partner globally have used the PID approach in innovations development for sustainable agriculture and natural resources management. The principles and tools of PID can be applied in the development of innovations for climate change adaptation and mitigation.

This approach and process will help in identification, validation, documentation and dissemination of best bet climate change adaption and mitigation innovations beyond the points of origin. This will contribute towards short, medium and long-term community resilience to climate change impacts.

Box 4. Facts about farmer innovation and climate change

- Climate change impacts triggers farmers to develop innovation for coping and adaptation (Zake 2014; LEISA 2001).
- Farmers use their own resources and means to develop innovations for climate change adaptation.
- Farmer innovations can be invisible unless time is taken for discussion and probing with them in a learning spirit and process (Fenta and Assefa 2009).

2.2.2 The role of different stakeholders in PID

The key entry point to PID begins with identification of local innovations. This involves observing what the farmers are already trying out in problem solving and tapping into opportunities they perceive. Furthermore, a situational analysis with lead farmer innovators and community members can be conducted as part of the process for planning joint research and development activities.

This involves the local community, the scientists and or development workers working together. In the process they assess the current and likely future impacts of an innovation to establish whether it will be beneficial for a large number of households in the area, the poor and disadvantaged with resulting in negative environmental impacts (PROLINNOVA International Support Team, 2009).

In Table 2 the key stakeholders involved in PID and their respective roles are presented.

Table 2. Key PID stakeholders and their responsibilities.

Participatory Innovation Development stakeholder	Role of stakeholder in the PID process
a) Farmer innovator	Takes the lead role in innovation development and implemented all the agreed action on-site at his farm.
b) Farmer groups	Provide social security to the innovator in cases where he needs support from his innovator, thus they recommended him to receive local innovation support funds. They also under took regular monitoring of activity implementation at the innovation site and as well participate in the evaluation of the innovation.
c) Ministry of Agriculture, Animal Industry and Fisheries; and other line Ministries	To provide guidance on policy formulation and monitoring implementation. Thus, in the process any underlying policy gaps can identified and addressed through policy reviews.

<p>d) Civil Society Organizations including community based, farmer's and non-governmental organizations, farmer groups</p>	<p>These facilitate the all process of innovation identification and participatory innovation development. They also promote the innovator through providing local innovation support funds and linked him to several other development players through networking. In case it's a farmer's group, they provide social security to the innovator for situations where he/she needs support from his innovator, thus they recommended him to receive local innovation support funds. Furthermore, they conduct regular monitoring of activity implementation at the innovation site and as well participating in the evaluation of the innovation.</p>
<p>e) Local Government Extension staff</p>	<p>Provided regular technical backstopping to the innovator and the farmer groups. They are also a direct link of the innovator and the farmers groups he belongs to several other development initiatives in the area.</p>
<p>g) Research; and Academic Institutions</p>	<p>Provided technical backstopping as part of validation of the innovation during the joint experimentation. For instance, provided specifications in respect to a standard bee hive.</p>
<p>Uganda National Council of Science and technology</p>	<p>To provide guidance and support on aspects of intellectual property rights of the farmer innovators.</p>

3.0 The methodology, tools and process for development of the policy brief

The policy briefing paper was developed through highly interactive methods involving members of the PROLINNOVA Uganda network. This process included a National stakeholder's sharing workshop held on 6th July 2016. The purpose of the workshop was, 'to share information and experiences among key stakeholders in respect to innovations development and climate change adaptation and mitigation in Uganda.'



The workshop involved 36 (including 28 males and 8 females) participants categorized as: Farmer innovators; Researchers; Civil society organizations (PELUM, DENIVA and Environmental Alert ...); Local government extension staff from Moyo and Nakasongola districts, Ministry of agriculture,

animal industry and fisheries, National council for science and technology. The interaction was arranged in a format, which allowed for review, synthesis and analysis of policy and practice issues in respect to advancing innovations for climate change adaptation and mitigation. Thus, this involved prior preparation and delivery of topical power-point presentations by resource persons during the workshop. The topical presentations made during the workshop were:

- a. Overview of PID and climate change adaptation and PROLINNOVA Strategic plan – by PROLINNOVA Uganda Secretariat, Environmental Alert;
- b. National Climate change policy provisions for advancing innovations for climate change adaptation and mitigation in Uganda – by the Climate Change Department, Ministry of Water and Environment;
- c. Intellectual property rights and how it relates to farmer

innovations, thus current policy and legislative provisions – by Uganda National Council for Science and Technology (UNCST);

- d. National Agricultural Policy provisions for advancing innovations for climate change adaptation and mitigation in Uganda – by Ministry of Agriculture Animal Industry and Fisheries (MAAIF);
- e. Provisions in the National Agricultural Research Systems (NARS) act (2005), which support innovations for climate change adaptation and mitigation and the related initiatives by National Agricultural Research Organization (NARO);
- f. Farmer experiences in respect to innovations and climate change adaptation and mitigation. Farmer innovators from Moyo and Nakasongola districts share lessons and experiences about their innovations for climate change adaptation during the main session and the exhibition. Some of the innovations they shared and exhibited in this respect were: transitional bee hive, body jelly, honeybee products, re- molded cooking

stove and oranges which are irrigated by runoff harvested water.

Plenary discussions were done at the end of each presentation and in the process more clarifications and information was provided. Furthermore, all the presentations made were critiqued by a resource person from Development Network of Indigenous Voluntary Associations. The key results from this interaction was a list of key issues and recommendations for policy and practice change to advance farmer innovations for climate change adaptation and mitigation (see Table 4). These were further synthesized, reviewed and validated by the members of PROLINNOVA Uganda National Steering Committee.

3.1 The key policies for advancing PID and climate change adaptation and mitigation in Uganda

In Table 3 an appraisal of selected policies, laws and programs in respect to PID and climate change adaptation is presented.

Table 3. An appraisal of key selected policies in respect to PID and climate change adaptation and mitigation.

Key selected national policies and laws	Provisions in the policy which support innovations for climate change adaptation	Any gaps in the policy
<p>a) National climate change policy, 2014</p>	<p>(i) Guiding policy principles 3.4.2 and 3.4.5 on page 10 & 11, i.e. 'Communicating Effectively and Promoting Participatory Approaches,' and 'Devoting Adequate Attention to Technology Needs, Development and Transfer,' respectively.</p> <p>(ii) The policy provides specific strategies for adaptation and mitigation across different sub-sectors, which PID and climate innovations development can benefit from.</p>	<ul style="list-style-type: none"> • Were as the policy investment plan was developed and approved by parliament, full and effective implementation has not yet happened due to inadequate resources for implementation. • Lack of the climate change legislation, which would support enforcement of several provisions in the policy. • Limited awareness about the policy and its provisions among the stakeholders at different levels
<p>b) National agricultural policy, 2011</p>	<p>The policy has clear strategies for promoting farmers participation as enshrined in, 'MAAIF function 5.21.4 i.e. Research services, through identification and prioritization of their research needs and in procuring agricultural research services, while technically and professionally guiding them to make informed choices.' (See page 40 of the policy).</p>	<p>(i) Limited awareness about and knowledge of the policy and its provisions among the stakeholders at different levels.</p>

<p>c) National agricultural research systems act, (2005).</p>	<p>Part 4, Section 38 of the act provides for farmer’s fora and other farmer’s groups and organizations, among others, to;</p> <ul style="list-style-type: none"> • Identify and priorities agricultural research needs • Monitor the effectiveness of agricultural research activities • Advise on the use and integration of local knowledge in agricultural research • Inform the organization of the ideas, desires and opinions of the people in their respective areas on all matters relating to agricultural research. 	<p>It has been in existence for over 10 years. It’s due for review given to address emerging issues including climate variability and change.</p>
<p>d) Climate smart agriculture program for Uganda, 2015-2025.</p>	<p>This a 10 years program promoting climate smart agriculture. One of the 6 strategies of the program focuses on research for development and innovations.</p>	<p>(i) Limited awareness about and knowledge of the program its provisions among the stakeholders at different levels.</p>

Overall the current policy framework in Uganda has several provisions for tapping into to advance development of innovations for climate change adaption. However, proponents of innovations should be proactive and consciousness to follow through during implementation of the respective policies to see that participatory innovation development is supported and promoted to identify and add value to innovations for climate change adaptation and mitigation. Despite this, there are other equally important policies (such as: draft national soils policy; draft apiculture policy; draft organic agriculture policy; and draft indigenous knowledge policy as illustrated in Table 3) which would advance PID but the processes for their formulation have stalled.

4.0 Recommendations for policy and practice change to advance innovations for climate change adaptation in Uganda

The implementation of the recommendations presented in Table 4 by the targeted stakeholders will add value in bridging the policy and practice issues limiting development of innovations for climate change adaptation.

Table 4. Recommendations for addressing various policy and practice issues in respect to farmer innovations and climate change adaptation.

Policy and Practice Issues	Recommendations for policy and practice change
<p>A. Overall, there are few farmer innovations that have been identified and documented in Uganda. Those in respect to climate change adaptation and mitigation are even fewer. Besides, there has not been any efforts to establish the state of the earlier identified and documented innovations in sustainable agriculture and natural resource management.</p> <p>Furthermore, these innovations have also not been effectively disseminated for upscaling and out scaling. This partly due to limited access to documentation equipment by some stakeholders especially at the farm or farmer group’s level. But also largely, due to weak coordination with respect to identification, documentation, storage and dissemination of the innovations among various stakeholders at different levels.</p>	<ul style="list-style-type: none"> i) PROLINNOVA Uganda members and partners should support farmer’s groups to access documentation equipment to facilitate documentation of innovations. ii) Link the farmers innovators to innovation platforms by various stakeholders (e.g. National Agricultural Research Laboratories) for further information sharing and exchange. iii) The documented innovations should be shared with the climate change resource center (hosted at the Climate Change Department in the Ministry of Water and Environment) for repository, storage and access by interested stakeholders and the general public. iv) Other innovative ways for documentation and publishing of farmer innovation through web-based options should explored, promoted and regulated

<p>B. There is limited access to resources by farmer innovators for support to add value to their innovations. Some available innovation support funds have guidelines and requirements, which are difficult to be met by farmer innovators.</p>	<p>i) PROLINNOVA Uganda Partners should develop and implement MoUs to guide arrangements in which farmer innovations can be further developed and or validated through PID with support from existing innovation funds based on collaboration between Researchers, Academia and the farmer innovators.</p> <p>ii) PROLINNOVA Uganda should lobby for establishment of farmer friendly local innovation support funds.</p>
<p>C. There is limited awareness about the role and contribution of innovations to climate change adaptation and mitigation. Besides the contribution and effectiveness of the various climate change innovations have not been comprehensively understudied in Uganda.</p>	<p>i) PROLINNOVA Uganda members and partners should evaluate and or assess the contribution and impacts of farmer innovations to climate change adaptation.</p> <p>ii) PROLINNOVA Uganda members and partners should conduct targeted documentation and awareness about the role and contribution of innovations to climate change adaptation and mitigation among stakeholders at different levels.</p> <p>iii) PROLINNOVA Uganda and partners should consider conducting a refresher training on PID targeting key stakeholders who will support and promote application and mainstreaming of PID policies, programs and institutions.</p>

<p>D. The issue of Intellectual Property Rights (IPR) in respect to innovations is not well understood among various stakeholders at different levels. The farmer innovators need to invest resources to register their Intellectual property in the innovations, and most often are resource constrained.</p>	<p>i) PROLINNOVA Uganda members and partners, particularly the Uganda National Council of Science and Technology should understudy the issue of IPR (in terms of targeted action research) and pursued in terms of targeted awareness creation and support (e.g. awareness and training on documentation of the innovations and access to loans,..) to innovators who wish to register their innovation.</p>
<p>E. Weak linkages among different value chain actors for various crops within innovation platforms limits information access, validation of innovations, ...among the key actors</p>	<p>i) The District Commercial office should be supported to coordinate innovation platforms at the local government level.</p> <p>ii) The Uganda Export Promotion Board, working closely with UNCTAD should strengthen coordination of Innovation platforms at the national level</p>
<p>F. Farmer innovators are not necessarily entrepreneurs and hence it is difficult for them to commercialize their innovation for greater returns.</p>	<p>i) PROLINNOVA Uganda should support farmer innovators within existing and selected value chains to commercialize their innovations for greater benefits.</p>
<p>G. Poor packaging, branding and labelling of innovation products renders them less competitive in the market.</p>	<p>i) PROLINNOVA Uganda and partners should conduct tailor made trainings for strengthening knowledge and skills of farmer innovators in respect to packaging, branding and labeling of their innovations products.</p>
<p>H. Most innovators are not accredited through certificate by the UNBS. As a result there is low customer confidence in their innovation products.</p>	<p>i) PROLINNOVA Uganda members and partners should link farmer innovators to the UNBS to support towards accreditation and certification of their innovation products.</p>

<p>I. The NARS act, 2005 has been in place for 11 years without review. Thus, currently there are emerging issues such as climate change variability and impacts which need to be streamlined and integrated.</p>	<p>i) PROLINNOVA Uganda members and partners should lobby/advocate for review of the NARs and act, 2005 for inclusion of emerging issues.</p>
<p>J. Some draft policies which would advance PID (e.g. Apiculture policy, national seed policy, Soils policy, Organic agriculture policy, Indigenous Knowledge policy) have stalled.</p>	<p>PROLINNOVA Uganda members and partners should engage MAAIF to re-invigorate key policy formulation process, which have stalled towards completion.</p>

Besides the recommendations for policy and practice change presented in Table 4, there are other key strategic actions which must be implemented by the members of the PROLINNOVA Uganda network as a contribution towards community resilience to climate change impacts at different levels. Some of the actions include:

- i. Strengthen coordination and networking among the proponents of PID;
- ii. Review, develop and operationalize bidding memorandum of understanding (MoU) among key PROLINNOVA Uganda members, partners and stakeholders for development and effective implementation of PROLINNOVA Uganda country program;
- iii. Forge Relevant Partnerships for Joint Experimentation (PID) among partners and stakeholders at local, sub-national, national, regional and international levels.
- iv. Advance resource mobilization efforts for PROLINNOVA Uganda chapter programs based on the new strategic plan, 2016-2020;
- v. Consider profiling of existing policies and legislative frameworks that support/advance PID and climate change adaptation;
- vi. Document and popularize the validated best bets (BBs) for upscaling and out scaling beyond the points of origin.

5.0 An appeal

Climate variability and change is a reality and a development issue, which impacts on all sectors (including: agriculture, forestry, environment and natural resources) and therefore, affects everybody. Likewise, every sector and every individual contributes to the climate variability and change. Therefore every action, both at individual and institutional

level counts as a contribution for strengthening community resilience through adaptation and mitigation. In this context, innovations in agriculture and natural resources management contribute to adaptation and mitigation of climate change impacts at farm, community, local and national levels. Therefore, they should be supported and encouraged.

6.0 Acknowledgements

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The farmer innovators from Moyo and Nakasongola districts who exhibited their innovations on climate change adaptation and mitigation are recognized for their efforts and participation. PROLINNOVA Uganda members, partners and stakeholders who actively participated in the national stakeholder sharing workshop by sharing their views and ideas. On another note, the members of PROLINNOVA Uganda Steering Committee are applauded for the time and effort invested in subsequent review and synthesis of the policy issues and recommendations for advancing PID and climate change adaptation in

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7.0 Selected references

- Assefa, A., Waters, A. B., Fincham, R. and Mudahara, M. 2009. Comparison of frameworks for studying grassroots innovation: agricultural innovation Systems and agricultural knowledge and innovation systems. Addis Ababa.
- Climate change mainstreaming guidelines, (2014). Ministry of Water and Environment, Kampala, Uganda.
- CIGI. (2007). Centre for International Governance. International Risk Report. Waterloo.
- Climate smart agriculture program for Uganda, (2015). Jointly implemented by Ministry of Agriculture, Animal Industries and Fisheries; and Ministry of Water and Environment, Kampala, Uganda.
- FAO. (2011). Food and Agriculture Organisation. Rome, Italy. http://www.fao.org/Participation/ft_show.jsp?ID=9724
- Fenta, T. and Assefa, A. (2009). Harnessing local and outsiders' knowledge: experiences of a multi-stakeholder partnership to promote farmer innovation in Ethiopia. Innovation Africa: Enriching farmers' livelihoods, P. C. Sanginga, A. Waters-Bayer, S. Kaaria, J. Njuki and C. Wettasinha (ed.). Earthscan Publications Ltd. London, 35-56.
- IPCC. (2001a). Inter-Governmental Panel on Climate Change. Third assessment report. UNEP/GRID-Arendal http://www.grida.no/publications/other/ipcc_tar/?src=/climate/ipcc_tar/wg1/518.htm
- LEISA, (2001). Low-External-Input and Sustainable Agriculture. Coping with disaster. LEISA Magazine, 17(1), 36.
- National agricultural research systems act, (2005).
- NAPA. (2007). National Adaptation Program of Action on Climate Change in Uganda. Ministry of Water and Environment, Kampala, Uganda.
- National Agricultural Policy for Uganda. (2011). Ministry of Agriculture, Animal Industries and Fisheries, Entebbe
- National Climate Change Policy for Uganda (2013). Ministry of Water and Environment, Kampala.
- National Development Plan II (2015). National Development Plan for Uganda. National Planning Authority, Kampala, Uganda.
- National Policy on Disaster Preparedness and Management. (2010). Directorate of relief, disaster preparedness and refugees, Office of the Prime Minister, Kampala. <http://www.preventionweb.net/english/policies/v.php?id=8578&cid=180>
- PROLINNOVA. (2004). Annual Report. PROLINNOVA Secretariat, Leusden, Netherlands
- PROLINNOVA. (2009). Local Innovation and participatory innovation development. Some frequently asked questions. Prolinnova working paper 30. Prolinnova Secretariate, Leusden, Netherlands. <http://www.prolinnova.net/sites/default/files/documents/>

resources/working_paper/73237_working_paper_30_li_and_pid.pdf

- PROLINNOVA International Support Team. (2009). Local Innovation and Participatory Innovation Development: some frequently asked questions. PROLINNOVA Working paper 30. PROLINNOVA International Secretariat c/o ETC EcoCulture Kastanjelaan 5, POB 64, 3830 AB Leusden, Netherlands.
- Reducing Emissions from Deforestation and forest Degradation (REDD+) readiness plan, (2011). Ministry of Water and Environment, Kampala, Uganda.
- UNDAC. (2008). United Nations Assessment and Coordination of Humanitarian Affairs. Disaster response and preparedness mission in Uganda. New York.
- World Bank. (2004). Promoting local innovation: enhancing IK dynamics and links with scientific knowledge. IK Notes 76 [<http://www.worldbank.org/afri/ik/default.htm>].
- Zake J. and Kaggwa D. (2007). Climate change and its implications to livelihoods and economic development in Uganda. Environmental Alert, Kampala.
- Zake, J., Kiconco, S., Kimbugwe, C., Drani, H., and Andama, G. (2010). Climate change in Uganda; Insights for long term adaptation and building community resilience. Environmental Alert, Kampala.
- Zake, J. (2014). Climate Variability triggers Innovations for Adaptation and Mitigation; A case for Smallholder Banana Farmers in Central Uganda. A manuscript submitted to the Journal of Climate and Development.

Box 5. About Prolinnova Uganda

PROLINNOVA Uganda is an NGO-led multistakeholder initiative to build a national learning network on promoting local innovation in ecologically oriented agriculture and natural resource management (NRM). PROLINNOVA–Uganda envisions, ‘a world in which women and men farmers play decisive roles in agriculture and NRM innovation processes for sustainable livelihoods.’

The mission is to, ‘stimulate a culture of mutual learning and synergy among diverse stakeholder groups to actively support and promote local innovation processes in agriculture and NRM.’

The goal of Prolinnova Uganda is to, ‘contribute to equitable and inclusive development of resilient and sustainable farming communities.’

Prolinnova Uganda is governed by the following Institutional structures

Prolinnova International Support Team (IST)

Supports PROLINNOVA activities at national and regional level through overall coordination, fundraising, capacity strengthening, coaching, web-based knowledge management, policy dialogue, networking, publishing and other activities to raise the profile of PROLINNOVA and inform the world about approaches and outcomes in supporting farmer innovation and PID.

The International Secretariat

This is now hosted by KIT (Netherlands), and is responsible for overall administrative and financial management of projects that are funded through the international PROLINNOVA network.

PROLINNOVA Uganda National Steering Committee.

This comprises of 10 members including: Ministry of Agriculture, Animal Industries and Fisheries; National Agricultural Research Organization; National Agricultural Advisory Services; Development Network of Indigenous Voluntary Associations; International Centre for Tropical Agriculture; Uganda National Farmers Federation; Uganda National Council for Science and Technology; Faculty of Forestry and Nature Conservation-- Makerere University; Africa 2000 Network; and Environmental Alert, the Prolinnova Uganda Secretariat. It provides overall oversight and strategic guidance in implementation of the country program.

Core Team

This comprises of PELUM-Uganda; KULIKA Uganda; Kikandwa Environment Association; Mukono Agricultural Research and Development Institute; and Environmental Alert, the Prolinnova Uganda Secretariat. They provide technical backstopping to the Secretariat and members in respect to advancing participatory innovation development.

The Secretariat for Prolinnova Uganda

This coordinates Prolinnova members and partners in the implementation of Prolinnova Uganda Country Program. Environmental Alert hosts the secretariat for Prolinnova Uganda.

Members of Prolinnova Uganda

These participate in networking, information exchange and implementation of PROLINNOVA Uganda program activities.

Partners of Prolinnova Uganda

These share similar goals and aspirations as PROLINNOVA Uganda and hence, collaborate in the implementation of PROLINNOVA Network strategic plan and related country programs.

For more information contact:

Dr. Joshua Zake (PhD),
Executive Director Environmental Alert.

P.O. Box 11259, Kampala, Uganda

Telephone: 0414510215

Email: ed@envalert.org or joszake@gmail.com

Website: <http://www.envalert.org>

C/o PROLINNOVA-Uganda Country Platform Secretariat

Website: <http://www.prolinnova.net/uganda>