<table>
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<th><strong>Title:</strong></th>
<th>Incorporating Climate Smart and Fast Growth Traits to Transform the Local Chicken Value Chain in Uganda (SMATCH)</th>
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| **Purpose:** | Increase chicken productivity, supply of animal protein and diversify the income base of farmers |
| **Project Summary:** | The proposed project aims to increase productivity of semi-intensive and free-range (family) chickens and empower farmers so as to transform the chicken value chain to improve household food security and incomes among small and medium scale farmers of Uganda. The work will be undertaken in Kamuli district, with record levels of malnutrition and poverty in Uganda; and Kiryandongo district, with record number of refugees and internally displaced persons and rampant poverty in Uganda. This will be achieved through research |

on: the characterisation of the chicken value chain; on-farm evaluation of growth and survival performance of selectively bred Namasagali chicken ecotype; cross-breeding of climate smart/heat tolerant (Naked-naked or Frizzle-feathered) chickens and fast-growing (Kuroiler) chicken ecotypes. The project will also intend to validate and promote the local innovations of incubation-brooding box; use of ducks as chicken-egg-incubators, and synchronised chicken incubation for improving egg hatchability, chick survival and egg clutch size. Results will include increased access to better chicken genotypes, and reduced loss of young birds to diseases and predators. A participatory action research focussing on the regular chicken farmer is proposed. Capacity building will be incorporated by enabling two students to pursue M.Sc. degrees, four student interns to get attachment to complete their BSc. degrees, and over 500 chicken farmers get skilled and empowered. Student I will evaluate the effect of combining sparse plumage/feathering and fast growth traits into local chickens on their growth, survival and carcass characteristics; Student II will validate the local innovations of the incubation-brooding box; the use of ducks as chicken-egg-incubators, and synchronised chicken incubation for improving egg hatchability, chick survival and subsequent egg clutch size. Chicken farmers will be trained using the FFS approach and an innovation platform for chicken value chain stakeholders in both districts will be formed and empowered. The research results will be synthesized into a resource document for extension service providers for promotion through existing extension networks; two MSc. theses and scientific journal publications.

| Country and Specific Location(s): | Uganda  
Kamuli district in Eastern Uganda |
| Participating Institutions: | 1. College of Agric. and Environmental Sciences, Makerere University (MAK)  
2. Faculty Of Agriculture, Gulu University (GU)  
3. Iowa State University – Uganda Program (ISU-UP),  
4. National Livestock Resources Research Institute (NaLIRRI) |
| Start Date: | 1st July, 2015 |
| End Date: | 30th July, 2017 |
| Budget | USD 59,997 |
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Dr. Donald R. Kugonza is an Animal Scientist and holds a B.Sc. in Agriculture, M.Sc. in Agriculture (Animal Science) and a PhD from Makerere University in Uganda where he now lectures on Apiculture; Genetics; Livestock and Poultry breeding. Donald is a member of the Advisory committee of NARO’s National Livestock Resources Research Institute (NaLIRRI); is a member of the Taxonomy Advisory Group of the African Union-Inter African Bureau for Animal Resources (AU-IBAR); is a former Vice-President of the World Youth Forum, then, a group of 130 member countries; and was a Fellow of the International Atomic Energy Agency. In 2013, he won an award from the Africa-wide Young Professionals in Science competition (organized by CTA/FARA/IFS/ANAFE/RUFORUM/NEPAD/AGRA) for his research on enhancing pig productivity in the Lake Victoria crescent zone. He is a seasoned researcher, having won 25 grants as lead scientist and/or collaborator, and is an acclaimed author with 4 professional books, 4 book chapters, 36 original peer-reviewed journal papers, and over 40 papers in conference proceedings. He has presented papers at 20 scientific conferences and been a Uganda delegate at other world events. His publications have been downloaded from his Research Gate portal 12,900 times as in June 2015, and 28 of them have 160 citations in Google Scholar. He is a reviewer of journal papers, degree theses and research grant proposals. He has academically mentored scores of Ugandans and other world citizens. He has climbed Mt. Kenya (1997) and Mt. Kilimanjaro (2014). Since 1998, he is authorised to bear the title ‘Jerusalem Pilgrim’. He continually helps farmer groups acquire skills in improved agricultural productivity. Major research interests are in conservation and performance improvement of animal genetic resources, specifically he has worked with cattle, goats, pigs, chickens and honeybees. Quality evaluation of animal and bee products is also of much interest.

Selected Publications
The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)


Selected Funded Research Projects

- **2014-2016**: Improving pig productivity through diversifying piglet nutrition options and up scaling of pig artificial insemination in Uganda. Funded by NARO-CGS. Grant No: CGS/2/16/14. Grant Amount: USD 89,005. **Principal Investigator**.

- **2012-2014**: Enhancing local chicken productivity through strategic breeding and nutrition management in Northern Uganda. Funded by RUFORUM. Grant No: RU-CGS-GRG-30-9-11. Grant Amount: USD59,999. **Co-Principal Investigator**

- **2010-2013**: Participatory development of the strategies for improving kid survivability amongst goats of all genotypes in the extensive production system of South-Western Uganda. Funded by NARO-CGS. Grant Amount: USD90,000. **Collaborator**.

- **2010-2013**: Genomic selection of indigenous chickens and goats of Uganda. Funded by NARO. **Collaborator**.

- **2010-2014**: Integration of efficient chicken management strategies and commercial production into the cash economy of smallholder farmers in Lake Victoria Crescent Zone. Funded by NARO. Grant Amount: USD 150,000. **Collaborator**.

- **2010-2012**: Influence of management system on growth and carcass characteristics of Ugandan local chickens. Funded by Carnegie Corporation. Grant Amount: USD30,000. **Collaborator**.
• **2009-2011:** Testing and validation of breed survey methodology, socio-economic survey and characterization of selected indigenous cattle of Eastern and central Africa. Funded by ASARECA. Grant Amount: USD163,000. **Co-PI.**

• **2009-2011:** Development of an improved protocol for processing and handling of honey in Uganda. Funded by Carnegie Corporation. Grant Amount: USD30,000. **Collaborator.**

• **2008–2010:** Enhancing smallholder pig productivity through efficient utilisation of local feed and elite pig resources in the Lake Victoria crescent. Funded by NARO-CGS. Grant Amount: USD55,000. **Principal Investigator.**

• **2007-2009:** Increasing smallholder pig productivity: Integrated approaches to breeding, feeding and control of African swine fever. Funded by NARO-CGS. Grant Amount: USD90,000. **Collaborator.**

• **2007-2009:** Socio-economic impact assessment of goat productivity interventions and the use of innovative and participatory breeding approaches in Uganda. Funded by NARO-CGS. Grant Amount: USD90,000. **Collaborator.**

• **2007-2009:** Development of honeybee pest and disease control methods to improve the quality of honey and other hive products in Uganda. Funded by NARO-CGS. Grant Amount: USD90,000. **Collaborator.**

• **2008-2009:** Analysis of the production and marketing channels of local chickens and their products in central Uganda. Funded by NURRU. Grant Amount: USD2,500. **Collaborator.**

• **2002-2008:** Genetic polymorphism, pedigree relationships and selection criteria of Ankole cattle populations of Uganda. Funded by NORAD. Grant Amount: USD400,000. **Collaborator.**

• **2007-2008:** Improving free range poultry productivity in the North Western zone. Funded by NARO-CGS. Grant Amount: USD50,000. **Collaborator.**

• **2006-2008:** Suckling management and feeding strategies of sows and their litters in an integrated pig and crop production system on small holder pig farms. Funded by AICAD. Grant Amount: USD10,000. **Co-PI.**

• **2004-2005:** Farmer innovation in incubation and brooding on smallholder chicken productivity: An on-farm evaluation in Wakiso district. Funded by ProLINNOVA/CDRN. Grant Amount: USD2,500. **Principal Investigator.**

• **2004-2005:** Exploration of honey, wax and propolis productivity in central Uganda. Funded by Sida/SAREC. Grant Amount: USD3,911. **Principal Investigator.**

• **2004-2005:** Weaning strategies for improving the performance of sows and their progenies under smallholder conditions. Funded by Sida/SAREC. Grant Amount: USD3,505. **Principal Investigator.**