

ABG -31

Indigenous Livestock Innovations in Africa (iLINOVA): A Project Report

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Abstract

This presentation focuses on key experiences as a country partner of an EU-funded indigenous livestock innovations study over a four-year period. The main objective was to address critical gaps in the application of science, technology and innovations (STI) in the management of indigenous livestock (MIL) resources in Eastern, Southern and Western Africa. Broad range experiences covered inter-institutional linkages and networks across Africa, and capacity building in STI related to Animal Breeding, Genetics and Genomics (ABGG). Highlights of accomplishments under iLINOVA included: (a) situation analysis of the status of the application of STI for MIL, (b) multiple stakeholders' fora (with livestock farmer organizations and industry players), (c) 3-layered Summer Camps with themes covering ABGG and grantsmanship. Over the four-year period, programs covered vibrant academic exchanges among institutions across partner countries of Kenya, Malawi and Nigeria. These included a project inception workshop, three international Summer Camps devoted to ABGG, biodiversity, biostatistics, grantsmanship, etc, hosting of a 1st World Congress on Innovations for Livestock Development, multiple graduate research studies with topics covering ABGG reproductive physiology, career building opportunities for graduate students especially in ABGG through training workshops, internship and mentorship opportunities. Overall, these experiences serve to create a new paradigm on robust opportunities in graduate training in ABGG facilitated through a culture of STI and grantsmanship.

Key words: Indigenous livestock, iLINOVA, STI, capacity building, grantsmanship

Introduction

Science, technology and innovations (STI) Strategy for Africa tagged "STISA2024" (FARA, 2015) underscored the importance of STI as a tool for development and poverty reduction in Africa, and stressing the need to deploy STI in all facets of development in the continent. In Animal Breeding and Genetics, in particular, as well as in Animal Sciences in general, the application of STI in the management of indigenous livestock (MIL) resources is very low or non-existent (www.ilinova.org). This wide lacuna in the application of STI to MIL in Africa needs to be addressed as a matter of urgency. The deployment of appropriate STI to the MIL will boost output and productivity of indigenous livestock genetic resources in Africa, as a key strategy in food security and poverty reduction. The focus of this presentation is to share our accumulated experiences about the 4-year iLINOVA study whose objective was the assessment of STI for MIL across eastern, southern and western Africa.

Methodology

The iLINOVA project is funded by the EU under the ACP-EU Cooperation programme in Science and Technology Phase II. The main goal was to address critical gaps in the deployment of science, technology and innovations (STI) to the management of indigenous livestock (MIL) resources. Partners in the iLINOVA project included (a) Egerton University, Kenya (Lead), (b) Lilongwe University of Agriculture & Natural Resources, Malawi, (c) Obafemi Awolowo University, Nigeria. Associate partners include Wageningen University, Duration of the project was about four years.

Core methodology for the implementation of iLINOVA is documented in the project website (www.ilinova.org), and was essentially hinged on the principle of project cycle management. Project activities were divided into 7 phases, as summarized in Table 1. Essentially, the activities are all focused on STI for MIL, and covered project management, situation analysis of the status of STI for MIL in each partner country, stakeholders' fora, summer camps for researchers and farmer organizations, research-industry/civil society linkages including Science and Technology (S&T) desks, projects, internships, and mentorship, a Centre of Excellence for Livestock Innovations and Business (www.coelib.org), visibility and knowledge transfer, a project web-site (www.ilinova.org), hosting a 1st World Congress on Innovations for Livestock Development (www.wcild.org), a symposium for multiplication of results.

Table 1: Project Activities under the iLINOVA (details in www.ilinova.org)

1. Project management (monitoring and coordination, project evaluation and follow-ups and gender mainstreaming);
2. Situation analysis (focused on the status of STI for the management of indigenous livestock resources in each partner countries of Kenya, Malawi and Nigeria),
3. Multiple stakeholders' fora (with key players and actors in the livestock value chains, and institutions including GOs and NGOs),
4. Summer camps (which were 3-layered and included (a) all partner countries, (b) among academics within each partner country and (c) academics and livestock farmer organizations, tagged "community-based summer camps")
5. Research-industry/civil society linkages (which bridges the gap between Universities and industry, and was hinged on five pillars of (a) Science and technology (S&T) desks, (b) S&T projects, (c) S&T internships, and (d) S&T mentorship, and (e) Mobile application);
6. A Centre of Excellence for Livestock Innovations and Business (www.coelib.org).
7. Multiplication Symposia

Outcomes and Discussion

Key accomplishments (Table 2) of the iLINOVA study over the four-year period covered capacity building for indigenous livestock resources in Africa with a focus on STI-driven agenda and programmes. For human capacity building, the inclusion of graduate students in ABGG, in all the training and programmes within-country, as well as in international programmes needs to be emphasized. Such programmes included summer camps, workshops and conferences focused on Animal Breeding, Genetics and Genomics, as well as animal biodiversity and biostatistics. These fora provided platforms for knowledge enrichment for academic staff and graduate students from all partner countries.

Other institutional benefits from the iLINOVA study are related to the competitive "mini-grants" scheme for funds to support graduate level research. The grants (10 in all for the Nigerian partner institution) fully supported 7 MSc research and partially funded 3 Doctoral studies. Funds covered consumables, purchase of livestock for experiments, Artificial Insemination (for cows, rabbits and chickens), reagents, Nitrogen tanks, repair and renovation of livestock units, workshop fees, and local travel.

Other benefits to partner institutions included the establishment of new livestock units at the University Teaching and Research Farm. These included the Pastured Poultry and Maggot House Units. The Pastured Poultry Unit in particular was designed and constructed with iLINOVA funds, in compliance with EU legislation that poultry are raised on pasture where birds will have access to natural vegetation and air. Four scientific presentations for this 43rd Annual NSAP Conference (Adeniyi *et al.*, 2018a,b; Anjorin *et al.*, 2018 and Aworetan and Oseni, 2018) were research conducted at this unit. The participation of all the authors in this 43rd Annual Conference of NSAP is also covered by funds from iLINOVA. It is of note that such academic experiences for graduate students was also extended to international Workshops and Conferences including iLINOVA Summer Camps in Nigeria and Kenya (iLINOVA, 2014).

Another accomplishment is the establishment of a Science & Technology Project Office in our Department. This office represents a coordination unit for all project activities, as well as a Biostatistics Laboratory for livestock data analysis and statistical consulting.

At the Obafemi Awolowo University, the experiences documented above have enhanced professionalism and scholarship in Animal Sciences in general, and Animal Breeding and Genetics in particular. Our sense of competitiveness (for grants, scholarships and fellowships) was boosted through collaboration and networking. Further, the impact on young careers through the building of core competence and expertise in animal breeding, genetics and genomics, biodiversity, biostatistics is unquantifiable. Meetings and interactions with resource-persons from foreign Universities including Wageningen and Iowa State University, USA, further motivated and inspired graduate students in Animal Breeding and Genetics. Extra benefits in personal traits and core qualities included *Ubuntu* (the spirit of altruism and selflessness), honesty, dedication, passion, humility, team spirit, patience, a commitment to high standards, mutual respect, love and sacrifice were nurtured and inculcated as members of a dynamic team.

Table 2: Key accomplishments under the iLINOVA project

1. Effective research linkages and strong networks and sustainable platforms across Eastern, Southern and Western Africa.
2. A project inception workshop
3. Three international Summer Camps
4. Mini-grants scheme to support graduate research (MSc and PhD)
5. Funded study projects
6. International workshops and conferences (~8 countries, Belgium, China, Ghana, Kenya, Malawi, Nigeria, Sudan, UAE)
7. Postgraduate/Post-Doc training and exchange visits (Drs. Ajayi, Olaniyi, Popoola, and Mr./Mrs. Oladejo, Adeniyi, Omadime, Williams, Adeyemo)
8. Internship (with Friesland, Shonga Dairies, Onileola Farms, Smap Farms, etc.)
9. Academic mentorship for graduate students (Prof E b Sonaiya)
10. University-industry/civil society linkages (FrieslandCampina, SMAP Farms, Shonga Dairies, RABAN and RAFAN, Onileola Farms, Bles Dairies (The Netherlands)
11. Participation in two GFIA Conferences (Abu Dhabi, UAE)
12. 1 st World Congress on Innovations for Livestock Development, June 24-30, 2016, Nakuru, Kenya [120 participants from 16 countries, 77 presentations, covering livestock genetics, breeding, productive systems, nutrition, extension, diversity etc.]
13. Biostatistics Research Laboratory, Department of Animal Sciences, OAU Ile-Ife
14. Policy engagement (Animal Breeding Policy for Nigeria).
15. Participation in the joint stakeholders conference of EDULINK II and ACP- Science & Technology Programmes (S&T II) in Brussels, Belgium
16. Most outstanding accomplishment: Centre of Excellence for Livestock Innovations and Business (www.coelib.org). Goals are to strengthen research and other capacities, build on existing STI capacity and learning, foster innovations and agribusiness development
17. Establishment of S&T desks and S&T projects
18. Career building opportunities for graduate students through internship opportunities in the industry
19. Mentorship programmes for students in R&D, project implementation, decision-making, field research, etc.

Reflections: This presentation has focused on the opportunities for scholarship and grantsmanship as drivers of sound and robust training in Animal Breeding and Genetics in particular, and Animal Sciences in general. Some notable points from the discourse include the following: (a) sound graduate-level training embrace a R&D agenda driven by STI in all the areas of specializations in Animal Sciences; (b) Grantsmanship is a powerful tool in meeting all the aforementioned goals and therefore a sound culture of grantsmanship is inevitable in professional graduate level training in Animal Science; (c) the focus of all the studies is STI, which is the fulcrum that drives efficient and highly productive livestock enterprises and value chains. Overall, these experiences are geared towards the full training of graduate students and young academics to aspire to full blown careers in Animal Breeding in particular and Animal Sciences in general.

Conclusion

This paper draws attention to the role of STI for MIL and grantsmanship as key strategies in all aspects of livestock research and development, and capacity building. The EU-funded iLINOVA was used as a case study to draw attention to the changing paradigm in graduate-level training that focuses on capacity building to guarantee full professionalism in Animal Breeding and Genetics in particular, and Animal Sciences in general.

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