

Research Application Summary

Post-doctoral fellowship experiences and lessons gained during the inter-disciplinary research approach regarding innovations among farmer groups

Sebuliba-Miituinba, R. & Agea, J.

Department of Extension and Innovation Studies, College of Agriculture and Environmental Sciences, Makerere University, P.O. Box 7062, Kampala, Uganda

Corresponding author: rsemur@gmail.com

Abstract

Experience shows that delving into a post-doctoral arena without proper orientation, guidance, modeling and development support can be quite challenging. As one winds up the doctoral processes, one observation is the need for commitment and psychological preparation of the actors that benefit from the programme, so as to have scientific self-efficacy. Whereas various researchers suggest many students could find their doctoral and post-doc programmes rewarding, experience shows a number of serious challenges are encountered in this journey. Many emanate from various interactions between the Post-doctoral fellows and their-would be mentors, those they supervise coupled with the unpredictable scholarly community. Accountability, workloads, weak collective effort, private personal and/or social demands exacerbate the already demanding situation. Despite the challenges a number of achievements and rewards await one in the post-doc fellowship with so many strides made and academic networks created. In lieu of these observations and experience, this submission explores the Post-doctoral Fellows' experiences especially in striving to stay on course so as to deliver expected outcomes from the post-doctoral processes.

Keywords: Makerere University, mentors, Post-doctoral Fellowship, RUFORUM

Résumé

L'expérience montre que se plonger dans une expérience postdoctorale sans une orientation, des conseils, une modélisation et un soutien au développement appropriés peut être un véritable défi. Au fur et à mesure que l'on avance vers la fin du doctorat, on prend conscience du besoin d'engagement et de préparation psychologique des acteurs qui bénéficient du programme, afin d'avoir une auto-efficacité scientifique. Alors que divers chercheurs suggèrent que de nombreux étudiants pourraient trouver leurs programmes de doctorat et de post-doctorat enrichissants, l'expérience montre qu'un certain nombre de défis sérieux sont rencontrés dans ce parcours. Nombre d'entre elles émanent des diverses interactions entre les post-doctorants et leurs potentiels mentors, ceux qu'ils supervisent et la communauté scientifique imprévisible. La responsabilisation, la charge de travail, la faiblesse de l'effort collectif, les exigences personnelles et/ou sociales exacerbent une situation déjà exigeante. Malgré les défis, un certain nombre d'accomplissements et de récompenses attendent le post-doctorant, avec tant de progrès réalisés et de réseaux universitaires créés. En lieu et place de ces observations et de cette expérience, ce travail explore les expériences des boursiers post-doctoraux, notamment en s'efforçant de maintenir le cap afin d'obtenir les résultats attendus de l'expérience post-doctorale.

Mots clés : Université de Makerere, mentors, bourse post-doctorale, RUFORUM

Introduction

There is a need to come up with innovative scientific solutions to problems of small scale farmers in rural areas who operate in groups. One way is to ensure that the targeted farmers participate in the processes that involve agricultural technology development, adoption and use. Participation would ensure accelerated farmer transformation from subsistence to market-oriented farming leading to improved livelihoods. There is today thus an urgent need to make a farmer entrepreneurial to enable him/her cope with the changing climate and consumer tastes and ensure adequate production from which the surplus is taken to the market. With organizational support, a farmer in turn must also show strong commitment supported by a farmer group leadership for empowering behavior towards their members. It is in line with these observations geared at enhancing innovations in farming that address farmer concerns that motivates this Post-Doc fellowship application which was subsequently funded by RUFORUM (www.ruforum.org).

The Fellowship was anchored on the belief that applying an inter-disciplinary research approach could provide answers to some of the existing challenges that farmers face. Most existing studies have looked at technology advancement from a unidirectional discipline (Hailu, 2009). Yet to understand farmer challenges and associated phenomenon requires an integration of different theoretical orientations from different disciplines. For the study undertaken under this Fellowship, the aim was to establish whether the different forms of social and/or economic structures in which community members are embedded produce incentives or disincentives to collectively act towards a common goal. By simple identification of production clusters and a community of people involved in the same activity and facing the same external constraints such as market conditions do not necessarily lead to a collective action and success. Apart from subjecting farmers to capacity building they should be enabled to participate in developing and accessing relevant innovative technologies.

Thus this Post-Doc Fellowship aimed at lending support by undertaking and participating in the development of a pro-development scientific critical mass in the country comprised of some researchers tackling farmers' problems in various contexts involving economic, psychological, social and/or genetic approaches. The main objective therefore, was to use an inter-disciplinary approach to enable development of innovative ideas from a wider section of agricultural development actors and partners. Their input especially farmers, would be relevant in training and enhancing local capacity that promote farmer innovativeness and technology uptake to improve production. This is based on the study findings by Sebuliba *et al.* (2017) which showed how farmer collective action through groups, their social demographic attributes and perceptions influenced intentions individuals hold towards innovativeness. These aspects can mediate between introduction of innovations and transformation of the social context in which smallholder farmers live.

Programme perspective. The post-doctoral fellowship study begun in February 1918. The study aimed at establishing, using an inter-disciplinary research, factors influencing individual farmers' behaviours as they carried out farming. The factors that are social, economic and psychological were to be investigated with involvement of selected PhD students and small scale farmer participants. The farmers were operating under the farmer group extension approach to access and adopt innovations for their enterprises. There was a need to understand from farmers the social-cultural factors influencing participation and uptake of innovative technologies in selected geographical areas of the country. Information from such interaction was to assist in getting a more generalizable explanation regarding farmer intentions towards innovative technology uptake and improving livelihoods.

Additionally, there was a need also for an in-depth understanding of the intra and inter gender dynamics regarding the uptake of innovative technologies; and to examine the motivational factors of farmers that could encourage them participate and play a role in agricultural enterprise development. This

was to enable the researchers establish the extent social demographic attributes and/or perception factors determined farmer uptake and use of innovative technologies or practices using an inter-disciplinary approach. The study was being informed by sociological, psychological, economical and environmental models to determine their level of influence on farmer innovation and technology uptake within their farmer groups. Farmers to be incorporated in the study were selected based on whether they had received innovative knowledge and technologies and other resources to enable them improve their enterprises (crop and livestock) implemented under the programmes like those implemented by the National Agricultural Advisory Services (NAADS) in Uganda.

The study also intended to capture the influence of predictor variables on the actual farmer behavior as postulated by various researchers in the process of innovativeness (Gollwitzer, 1999 ; Gollwitzer and Sheeran, 2006; Zandstra *et al.*, 2010; Lopez-Mosquera, 2016). The intention was to ascertain the extent farmer action were being influenced by predictor variables especially during implementation and use of innovative technologies.

Implementation strategy for the post-doc fellowship. Many existing studies have looked at technology development and advancement from a unidirectional discipline and most extension approaches thus have followed the same model. Our strategy, using the inter-disciplinary research was to try and develop a pool of change agents (i.e., the graduates) with agricultural innovational knowledge and skills who would develop additional ideas and strategies to existing extension models from different angles. With participation of farmers this would help them improve productivity and or/production to become food secure and also be commercial. There is need also to enhance and facilitate multi-stakeholder dialogue to try and offer alternatives to the way extension approaches could be more useful to farmers. This is something that is grossly limited in many African countries including Uganda. The rationale of the Post-Doc Fellowship was therefore to contribute by providing an opportunity that: (i) seeks to improve and strengthen research skills; (ii) facilitate multi-stakeholder platforms, and (iii) enable the Post-Doc Fellow together with his mentors and faculty to provide research support and guidance (mentoring) to a team of PhD and MSc students. These and other actors would facilitate change in academics and agricultural policy. The students that were incorporated in the Post-doc fellowship were five as depicted in the mentorship protocol structure below:

The PhD students involved in this programme include: Ms Gumizamu, K. P., PARI 2018/2019; Kisawuzi, T., PARI 2018/2019; Lubega, M. S., PARI 2018/2019; Ochen, M., PARI 2018/2019 and Musoke, C. PARI 2018/2019. They have so far attended 10 mandatory course units for the first year study at Makerere University from August 2018-January 2019 and then in June 2019. Additionally, each student has identified his/her thesis research area;

1. Ms Gumizamu, K. P.: her research topic is on “Crop diversification and livelihoods of smallholder farmers in Sheema District in Western Uganda: Adaptive management for environmental change.”
2. Lubega Michael Sserugga: his research topic is on: “The influence of digitalization on the provisioning of rural finance”. The study is exploring the transformative potential of new entrants and innovations on business models in rural finance provisioning.
3. Charles Musoke: his research topic is on “Behavioral factors influencing commercialization of certified sweet potato seed in Uganda.” The study is investigating the commercialization behavioral attributes of the emerging three tier delivery model of pathogen tested sweet potato seed in Uganda.
4. Kisawuzi Titus: his research topic is on “The effectiveness of innovation platforms in supporting institution innovation for client-oriented research and development.”
5. Ochen, M: his research topic is on “Stakeholders’ perception towards military performance in Agricultural input distribution in Uganda”.

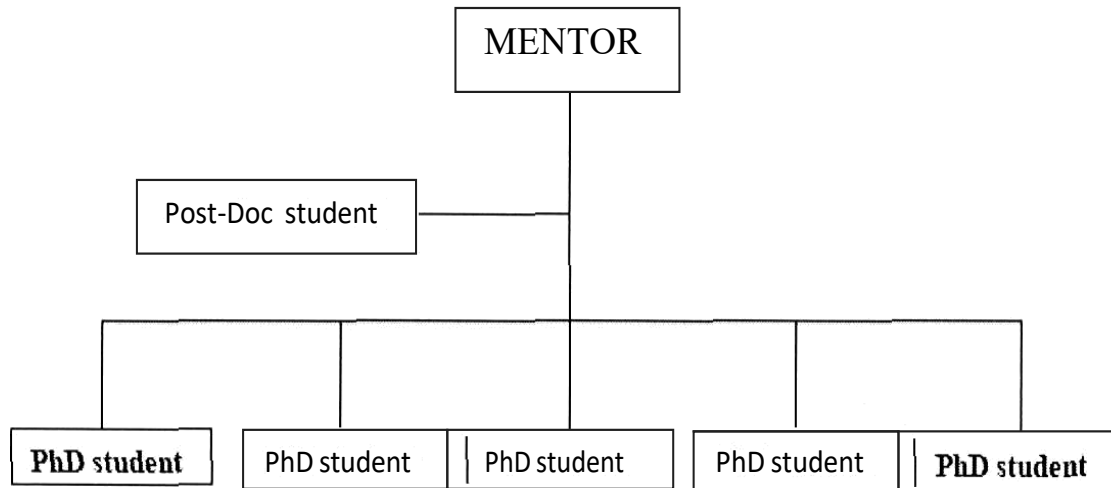


Figure 1. Mentorship protocol

Programme outputs. The programme outputs have involved a process that has continued to: (1) strengthen research capacity of the Post-doctoral Fellow and the graduate students; (2) strengthen mentoring skills of the Post doc Fellow; (3) training of a pool of skilled graduates who will be able to facilitate change through multi-disciplinary engagements. The initial output has been the release of three papers for publications;

- Fostering inter-disciplinary research to enhance rural smallholder farmer innovation and technology uptake intention using the farmer group approach;
- Mediating role of psychological empowerment behavior in the relationship between empowering leadership and innovativeness of farmer organizations in central Uganda; and
- Mediating role of organizational support and commitment on the relationship between psychological empowerment and innovativeness of farmer organizations in central Uganda.

The PhD students have completed their course work studies and initiated their research. The students continue to attend Friday seminars in the Extension Department so as to develop further their ability in writing proposals, data collection and analysis, discussion and reporting. Such students interaction has helped in mentoring and sharing knowledge especially in ensuring that the students research recognize the need to engage with multi-stakeholder platforms and farmer groups. The seminars make researchers interact with the various teams to ensure their active engagement in the research and support experiential learning for the team.

Conference and Leadership training. The Fellow participated in the 6th Africa Higher Education Week conference that was held in Nairobi, Kenya in October 2018. The ideas, scientific innovations, inventions, poster displays, presentations and entrepreneurial products exhibited during the conference helped the Fellow and others to benefit from scientific experiences of other actors knowledge and skills. This idea sharing assisted in enabling the Fellow establish academic networks with various parts of the world. These linkages also helped the Fellow to team about new products, processes and ideas which will be passed on to other actors especially the students and farmers.

Similarly, with other 18 Fellows who attended the Sixth Africa Higher Education Week conference we participated in leadership skills and competence training in Nairobi, Kenya from 16th- 19th October, 2018. The training was organized and facilitated by RUFORUM at Jomo Kenyatta University of Agriculture and Technology (JKUAT). The trainers from AWARD engaged him for a week in various hands on topics and themes regarding leadership which ended with the award of certificates. It was a good interaction which will help us on how to be scientific agents of change. We also came to know that there were so many leaders but with limited leadership skills or attributes.

Added value of this project. The Post-Doc Fellowship has provided support that has enabled us be mentored to develop our skills and knowledge acquisition. We have shared acquired information and also research results with other actors especially those in the Agricultural and Rural Innovation PhD programme at Makerere University and with 18 Post-Doc Fellows from across Africa. The PhD programme under the Agricultural and Rural Innovation System (ARIS) studies is currently ran with other related courses within the College of Agriculture and Environmental Services. A pool of skilled graduates who are able to facilitate multi-stakeholders platforms is being trained and the generation of publications will increase the visibility of Makerere University as a research University.

Challenges

A lot is still to be achieved as experience demonstrates that despite setting up plans, a number of challenges in the context we operate influence the way progress is made. The challenges have been varied, and similar to the observations by Vekkaila *et al.* (2013). They involved *inter alia* intervening life experiences, university, college and departmental problems which affected the rate at which research activities progressed and generally limited impression of graduate students. For instance PhD students' course work has taken some time to be completed. Despite the Post-Doc Fellowship having its time-line, the university also moves according to its planning hence a need for synchronizing activities and time. Proposal writing and refining, as guided by the supervisors, has lagged behind though we are in the final stages. Also one student got involved in a terrible accident and was badly injured and this delayed her progress. These were some of the inevitable problems. Other challenges though not pronounced at a post-doctoral level, were a spill-over from the doctoral programme which impacted greatly on the contribution of the post-doctoral Fellow. Overall, the Fellowship programme has been tight, demanding a lot of accountability which however, is good training though it keeps one on tenterhooks, in order to fulfill all the obligations.

Conclusion

Amidst social, economical, institutional and individual challenges, the Post-Doc Fellowship has been useful in promoting and developing the knowledge and skills of the Fellow. The multi-disciplinary interactions helped to make the Fellow broad-minded with a drive to mentor others. This was achieved through participating in multi-stakeholder dialogue to try and offer alternative extension delivery approaches and other academic approaches for helping farmers and students. The overall intention is to build a robust scientific innovative capacity of actors who can tackle societal problems especially through enhancement of participatory farmer innovations in technology development, adoption and usage.

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