

PROLINNOVA–TANZANIA REPORT 2018

1. INTRODUCTION

The Prolinnova–Tanzania Country Platform (referred to in this report as the Tanzania CP) is one of the platforms among those in Africa, Asia and Latin America which harnesses civil society and public organisations’ joint efforts to promote local innovation processes in agriculture and natural resource management (NRM). The Tanzania CP is coordinated by PELUM (Participatory Ecological Land Use Management)–Tanzania and is overseen by a National Steering Committee (NSC), which draws its members from a variety of organisations – civil society organisations, Tanzania Agricultural Research Institute (TARI), Tanzania Livestock Research Institute (TALIRI), District Councils’ Extension Services and farmer organisations. The CP has not been very active for over four years due to lack of external funding to support Prolinnova–Tanzania coordination and activities. The Prolinnova-related activities were implemented individually by CP partners in the country but not communicated and shared with other partners and the coordination.

2. ACHIEVEMENTS, CHALLENGES AND PERSPECTIVE

In the year 2018, Tanzania CP partners have actively engaged in a number of activities as follows:

2.1 Achievements

2.1.1 Participation in relevant in-country learning activities

The Tanzania CP participated in a multi-stakeholder lesson-learning exercise to inform their joint efforts to get better at partnership and innovation. This was organised by the Ministry of Agriculture and the Food and Agriculture Organization of the United Nations (FAO), the Global Forum on Agricultural Research (GFAR), the CGIAR (formerly called the Consultative Group on International Agricultural Research) and the Independent Science and Partnership Council (ISPC) held on 27 and 28 February 2018 at Millennium Sea Breeze Resort, Bagamoyo, Dar es Salaam, Tanzania. The CP was represented by the national technical coordinator and the program officer in PELUM–Tanzania.

2.1.2 Participation in regional activities

The Tanzania CP participated in the Promoting local innovation for Food and Nutrition Security (Prolifans) project workshop to review and discuss the process of regionalising the Prolinnova network in Africa, held on 22–24 May 2018 at the Methodist Resort and Conference Centre in Nairobi, Kenya. The CP was represented by the national technical coordinator.

2.1.3 Identification of local initiatives in local management of Fall Armyworm

A quick search for farmer innovations in controlling the Fall Armyworm (FAW) was conducted in November and December 2018. The search aimed at getting to know the ongoing initiatives in the current Prolinnova partners’ institutions and universities and farmers’ self-initiated initiatives to combat the FAW. It was found that the small-scale farmers in Tanzania have diverse initiatives, such as use of soil, ash, hot pepper, tobacco, soap spray, tephrosia extracts etc in combination with chemical insecticides, to reduce the effects of FAW on maize. At the Nelson Mandela African Institute of Science and Technology in Arusha, a PhD student is working with a Farmer Research Network to design and evaluate FAW management strategies, which takes a farmer-led approach to joint

research, together with scientists, in order to find context-specific strategies to deal with FAW. In the 2018/19 cropping season, some self-supported guided farmer experimentation was encouraged in Mbozi, Songwe Region, and Mbulu, Manyara Region. In Songwe Region, farmers are testing use of pig fat oil, palm oil and sugar solution to attract ants as bio-control agents. So far, some promising results and lessons were found (see Annex 1). In Mbulu District in Manyara Region, farmers are testing some products such as tobacco dust, tobacco extract, sugar solution, honey solution etc. and one farmer has developed a dust product using a mixture of the Gybadip chemical used to control ticks in livestock (Cypermethrin 15% MV) and ash, while another one uses a soap mixture with ash. They are currently comparing their local products with a recommended pesticide (the Cutter).

2.1.4 Fundraising

Fundraising was a major activity in 2018, as this forms the foundation for the CP to operate and implement jointly planned activities by the partners and approved by the NSC under the umbrella of the Prolinnova platform. The CP was engaged in one Skype meeting and developing three proposals/ concept notes, which were submitted to donors; their status is summarised in the table below.

	Proposal title	Date of submission	Call by	Collaboration	Status
1	Managing Drought and Soil Health for Crop Production in the Changing Climate: Analysing and Improving Climate-Smart Farmers' Initiatives	1 March 2018	CIDA/ACIAR	Country partners	Not successful
2	Sustainable and Sovereign Food Systems: Linking Local Innovation with Formal Innovation Processes along Food Value Chains	8 June 2018	Global Alliance for Future of Food	Subregional & international platforms	Not successful
3	Southern and Eastern Africa Sustainable Food Systems and Healthy Diets Transition Lab (AFRIDIETS-Lab)	23 January 2019	Horizon 2020 (European Union)	Global North and South organisations	Initial proposal under consideration
4	Pilot Capacity Development Interventions to Strengthen Research and Extension Linkages at Technology transfer and partnerships unit (Ttpus) Level for Participatory Innovation Development	October 2018	FAO Country Office	Tanzania CP	In discussion

2.2 Challenges

In the Tanzania CP, the main challenge remains the financial constraint to organise face-to-face meetings of the NSC, to jointly plan activities with partners, and to bring together and share lessons and experiences relevant to Prolinnova from the partner institutions.

2.3 Perspective and way forward

It seems important and may be a time to transform Prolinnova platforms into legal entities rather than remaining as loose networks attached to existing entities, in order to attract donor funds, which otherwise are not accessible to loose networks/platforms.

3. SELF-ASSESSMENT OF NETWORK FUNCTIONING

3.1 Extent of reaching goals and objectives of CP

The fundraising actions that were agreed in the meeting of key actors on 28 October 2017, as indicated in the 2017 report, were undertaken as planned. However, there has not been a success to date, as highlighted above in Section 2.1.4. Reaching the goal of identifying, documenting and

promoting more farmer innovators and innovations depends directly on Prolinnova-funded projects. The current experience shows that application for funds through another legal entity for Prolinnova activities seems not realistic in terms of legal access to funds and subsequent management by another entities on behalf of the Prolinnova CP.

3.2 Governance at CP level

The agreed governance structure is honoured, albeit the lack of funds has strained the NSC's joint planning and decision-making meetings on behalf the three key persons (the NSC chairman, administration coordination at the host organisation and national technical coordinator) who need to be liaised to make decisions and act as appropriate.

3.3 Functioning of CP Secretariat

The administrative issues of the CP platform are performed by PELUM–Tanzania, and technical aspects are pursued by the national technical coordinator and/or in collaboration with technical contact persons in the appropriate partner organisation, overseen by the NSC chairperson.

3.4 Communication between and among partners within your CP

Generally, there is an average level of communication within the Tanzania CP, such as communication between technical teams, particularly in co-development of concept notes/pre-proposals and encouraging participatory innovation development (PID) processes in the ongoing work of the CP partners. Communication between the national technical coordinator, the administrative coordination and the chairperson of NSC has been taking place from time to time as need arises. Direct financial support of PID activities through the Prolinnova platform, such as for capacity building and networking of CP members, would be an incentive to strengthen communication within the CP.

3.5 Relationship with other CPs, Subregional Coordinator (SRC), International Support Team (IST) and Prolinnova Oversight Group (POG)

In general, during 2018, the Tanzania CP had a cordial relationship, though yet to be synergistic, with most of the CPs and had a good formal relationship with the SRC. The relation with IST and POG members over the year was cordial and supportive. The Prolinnova platforms should highly aim at complementary and synergistic relationships for a common course at CP, subregional and international levels, which would increase our chances for fundraising and impacts.

3.6 Achievements in terms of capacity building

This is described in Sections 2.1.1 and 2.1.2 above.

3.7 Achievements at CP and subregional level in fundraising

This is detailed under Section 2.1.4 above.

4. CONCLUSION

Because of the problems in accessing funds for the CP, there were no activities directly overseen by the NSC. Each partner organisation in the Tanzania CP is working on projects related to local innovation and/or applying some elements of PID, whenever possible, to mainstream this into their activities. There has been an avenue of modest financial support from PELUM to undertake the activities reported above. Efforts to raise funds for activities directly under the CP's NSC are underway, as described above.

TOWARDS FARMER-LED BIO-MANAGEMENT OF FALL ARMYWORM IN TANZANIA

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SUMMARY: Fall Armyworm (FAW) outbreak is recent in Africa. In Tanzania, it was officially reported in the 2018 growing season, when it had devastating effects on maize growth and productivity. Maize is the main food crop relied on in Tanzania's food security. Shortage of maize production is synonymous with food shortage in the country. FAW control using chemicals is very frustrating for smallholder farmers, because most locally available commercial insecticides are costly and ineffective. The farmers have been trying number of methods, such as use of soil, ash, hot pepper, tobacco, soap spray, tephrosia extracts etc in combination with chemical insecticides. They make different claims as to the effectiveness of these methods and/or substances. Meanwhile, scientists and commercial enterprises in Tanzania are making no attempts to develop bio-control agents. Attempts by farmers to use a sugar solution, pig fat oil and palm oil to attract ants as a bio-control agent in maize infested with FAW have brought a glimmer of hope for bio-management of FAW in maize fields in Mbozi District, Songwe Region.

INTRODUCTION

Fall Armyworm (*Spodoptera frugiperda*, FAW) has become a great threat to food security in Africa, as it infests maize, which is a staple crop in many countries. In Tanzania, FAW was officially first reported in the 2018 growing season, when it devastated the crop in many maize-producing areas, leading to low production. Despite farmers' efforts to control the FAW in their maize fields using industrial chemicals and other trial-and-error methods such as applying ash, soap sprays, soil, mixture of extracts from hot pepper, ash and tobacco in maize funnels where the FAW larvae hide, these methods have not been very effective and smallholder maize producers are still seeking better solutions. Some research and higher education institutions are also looking for solutions, such as effective chemicals, botanicals, isolation of fungal parasite and working through Farmer Research Networks to design and evaluate FAW management strategies. The Prolinnova–Tanzania multistakeholder Country Platform has been in contact with some farmer groups in major maize-producing areas, so as to better understand the problem, identify and share innovative ideas and encourage farmer innovators to try some of the locally relevant ideas that they think could work to manage FAW, and to support the farmers in scaling out successful ways of dealing with FAW.

On 12–27 December 2018, the Prolinnova–Tanzania technical coordinator visited Songwe and Manyara Regions in southern and northern Tanzania, respectively, where farmer groups are calling for workable solutions and attempting on their own to try numerous options to deal with FAW. The aims of the visit were to share experiences and ideas, and to encourage and support a more systematic joint learning and/or experimentation on FAW control in smallholders' fields in an integrated manner, with special emphasis on ecological methods that encourage biodiversity in the production system.

GETTING TO KNOW THE FALL ARMYWORM

After sharing experiences and ideas with the Prolinnova–Tanzania technical coordinator and some innovative farmers in Mbozi District, Songwe Region, an innovative farmer Mr Joseph Mwampashe started mobilising other farmers to try out some ideas that were jointly identified.

First step: The farmers started with learning to better understand and recognise FAW infestation in maize, as it differs from that of other insects such as maize stalkborer, which is common in maize-growing areas of Tanzania (Plate 1).



Plate 1: Learning maize infestation characteristics and stages of the FAW destroying the maize growing leaf whorl

TRYING OUT WHAT MIGHT WORK

Second step: Then the farmers applied some bio-control ideas in a few infested maize plants to attract ants, the natural enemies of FAW. Selected substances among many options locally identified by the farmers themselves were:

1. Sprinkle sugar solution on two plants (about 3 g in 0.25 l of water)
2. Pig fat oil (smear the oil on two plants and pour a little into the maize leaf whorl)
3. Palm oil (smear the oil on two plants and pour a little into the maize leaf whorl).



Plate 2: Administering the attractants on maize plants in the field

FARMERS' OBSERVATIONS

Third step: The farmers observed the activity of ants on the maize plants:

- They saw that, in all the maize plants infested with FAW, ants were attracted and attacked the FAW larvae.
- Attraction of ants to the maize was rapid in the cases when the sugar solution and the palm oil were applied: already the next day, the farmers could observe the remains of FAW larvae.
- They found that the pig fat oil was also effective, but did not attract ants as fast as the sugar solution and palm oil did.
- The farmers found that using ant attractants seems to be helpful in bio-control of FAW at the larva stage.



Plate 3: Removing a FAW larva attacked by ants from the infested maize leaf whorl in a plant smeared with pig fat oil



Plate 4: An FAW larva partly eaten by attracted ants in maize plants smeared with pig fat oil

FARMERS' QUESTIONS FOR NEXT STEPS

Pertinent lessons and questions of this group of experimenting farmers were:

1. This preliminary trial is inspiring and imparts confidence to pursue more innovative options that might work in bio-management of FAW in maize fields in different social and bio-physical settings and actions for development.
2. How can means be obtained to scale up this approach of sharing experiences among farmers with other professionals to trigger innovative local experimentation on eco-friendly methods to manage FAW in their specific settings, and to enhance local capacity to facilitate such processes?
3. Where can technical and financial support be obtained for farmer-led experimentation, exchange of experiences, drawing lessons and scaling out such processes to other maize-growing areas?
4. How can we develop methods and rates of applying these locally effective bio-attractants at a farm scale?

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