

The effectiveness of knowledge sharing: The case of ProMusa

ProMusa is a knowledge-sharing platform on bananas with the goal of helping banana farmers make a better living and ensuring that bananas – in all their diversity – continue to thrive in a healthy environment.

Bioversity International's series of Impact Assessment Briefs aims to inform readers about the major results of evaluations carried out by the centre.

Bioversity International's ProMusa network (www.promusa.org) is a global platform of scientists and other stakeholders to facilitate the exchange of information, knowledge and know-how on banana, in particular to researchers in poorer countries for whom access to information is often more difficult. Face-to-face interactions are combined with online resources and tools such as an electronic newsletter (InfoMus@), an online compendium of banana knowledge ([Musapedia](#)), a bibliographic database ([Musalit](#)), an image bank ([Musarama](#)) and a contacts database ([Musacontacts](#)).

Discussions are encouraged through an online discussion forum, a community blog, and mailing lists. ProMusa also organizes a biennial scientific symposium to help its members stay up-to-date on the latest *Musa* research, encourage exchange of ideas and facilitate collaboration between scientists and across disciplines.

In 2013, a study was undertaken to assess the nature and effectiveness of ProMusa from the point of view of its members and subscribers, what outputs are produced and how these are translated into outcomes and disseminated outside the network.



Methodology

The scope of the evaluation was to assess:

- The network's evolution, partnerships, outputs produced and outcomes generated
- How services and products are perceived and used by network members
- Who the network's next users are and how they are influenced by the network

The methodology used to achieve the above draws from a paper issued by Innovations for Scaling Impact and Keystone Accountability (2010). ProMusa's effectiveness is therefore assessed along three interlinked categories:

1. Network vibrancy or liveliness: Variables in this category measure the structure of the network and its leadership; the diversity of network members, partners and next users; the degree of their participation in network activities; and the alignment of priorities and shared values
2. Network connectivity: In this category, we measure whether the network is fostering

communication between members and with next users, and dissemination of information and knowledge within and outside the network

3. Network effects: In this area, a number of variables measure the progress of the network in achieving its outputs, outcomes and impacts for members and beyond, its added value and unique role. They also look at who the next users benefiting from network outputs are and how they benefit.

Results from a user survey and key informant interviews were cross-checked with information from a literature review, to measure and assess the above-mentioned interlinked indicators. Specifically we used the following data:

- An online survey sent to network members between March and April 2014
- Key informant interviews with selected network members, chosen according to their answers to selected questions
- Official Bioversity International reports released in 2011 and 2009

THE STRUCTURE OF THE NETWORK AND ITS LEADERSHIP

Originally established in 1997 as the Global Programme for *Musa* Improvement, ProMusa's goal was to support the limited international public sector breeding effort on banana. ProMusa's principal method of working was through six interconnected working groups – one addressing crop improvement in general, the others addressing specific constraints to production (or breeding targets) such as weevils, nematodes, virus diseases and the main fungal diseases. Bioversity International provided a full-time coordinator and a secretariat for the network while other organizations provided the elected chairs of the working groups. After an interlude, when the network did not have a full-time Coordinator, the network was re-launched in 2006/2007 under the auspices of the International Society for Horticultural Sciences (ISHS), providing the basic structure for the banana and plantain Section of the Society. At that time, there was a growing consensus that ProMusa needed to focus on a broader range of topics to include also production and post-harvest issues, as major determinants for adoption of new materials by farmers and consumers. ProMusa was therefore restructured in three working groups: Crop Improvement, Crop Protection and Crop Production, with the intent to encourage interdisciplinary thinking.

ProMusa is currently composed of 689 members. Information on their professional activities is available for 392 members: about two thirds are researchers (67.5%), followed by academics (19.7%), people from the commercial sector (7%), extensionists (2%), and other (3.8%). About 31% of the network members come from Africa, 24% from Latin America, 28% from Asia, 15% from Europe, 4% from Northern America and 5.9% from Oceania. The network's Steering Committee is composed of the chair and vice-chair of each of the three working groups-elected by the respective working groups and the chair of the ISHS section on banana and plantain – elected by the members of that section, as well as a representative of MusaNet and each of the regional banana R&D networks, and the ProMusa coordinator. Bioversity International continues to provide a coordinator and (part-time) logistic support, and manages the network through funding from the CGIAR Research Program on Roots, Tubers and Bananas. The secretariat is responsible for administering the website and the various databases, releasing the newsletter and assisting in the organization of meetings and symposia. It also maintains the mailing lists to ensure efficient information flow between members, assists in the organization of elections of chairpersons, and maintains records and reports of the programme.

- Documents provided by key informants during the interviews
- Information from the network website and other related documents.

The survey, available in English, French and Spanish, was sent electronically to 1,857 ProMusa members and subscribers to the InfoMus@ mailing list. A total of 322 surveys (17%) were completed and used for the analysis. Those survey respondents that mentioned farmers among their main partners and those who developed dissemination and capacity building activities (24 respondents in total) were invited for a brief interview to understand how the next users of ProMusa are reached and influenced by the generated outcomes. Seven key informants were interviewed by phone.

Results

1. NETWORK VIBRANCY

THE DIVERSITY OF NETWORK MEMBERS, PARTNERS AND NEXT USERS

The profile of the respondents to the survey reflects the profile of the actual ProMusa membership. According to the survey, there is a good diversity of expertise in the network: pest and disease management is the most common area of intervention (33%), followed by crop production (31%), crop improvement/breeding (27%), characterization and assessment of banana diversity and organization or capacity strengthening activities (both 22%). The survey also showed that online presence is important, as 28% of respondents got to know and joined the network through an online search. On the other hand, members also “spread the word” (25% of respondents joined on another members’ suggestion) and network activities are relevant to reach out to new members (13% of respondents joined through ProMusa events). Respondents largely come from research institutions and academia. A third of respondents say their main partners are colleagues from their own organization. About 70% have national and local research institutes as their main partners, followed by academia (51%) and international research institutes (49%). Farmers’ organizations are main partners for 40% of respondents, which is important in terms of the potential reach of information and knowledge provided



by ProMusa to its final users. About 23% collaborate closely with NGOs or CBOs, 23% with private businesses, and 17% with local and national governments, which increases the potential scaling out of the information and knowledge shared through ProMusa. This diversity of partners, collaborators and people who receive ProMusa’s outputs makes the network’s potential reach quite large.

MEMBERS AND SUBSCRIBERS’ PARTICIPATION IN NETWORK ACTIVITIES

About 65% of the respondents value the overall quality of interactions with the Secretariat as high or very high. In terms of participation in online activities, in 2013, the ProMusa web resources (including the main site and the databases) received 83,796 visits and 201,018 page views¹, with visitors coming from 209 countries. The members’ participation in network events is good but not very high: only about 20% of respondents have recently attended ProMusa conferences. It is however not because of lack of interest but rather due to lack of funding, as pointed out in comments. These events are of clear interest to network

‘Virupakshi’ bunch from the [In pictures](#) section of the ProMusa website (photo by Tamil Nadu Growers’ Federation).

KEY FIGURES

- ProMusa web resources (including the main site and the databases) received 83,796 visits and 201,018 page views with visitors coming from 209 countries.
- 20% of respondents have recently attended ProMusa conferences.

¹ The Bioversity International office in Montpellier is excluded from all web statistics.



Photos from the ProMusa symposium held in Brisbane, Australia in 2014. On the left, the field trip to Durenbah and on the right, plenary session (photos by I. Van den Bergh).



participants, and in fact half of the respondents regularly consult the proceedings. According to respondents' comments, ProMusa could have an important role by directly providing travel grants and fellowships to attend training and events, but also by providing constantly updated information on these opportunities for the banana community in general (which ProMusa already does).

THE ALIGNMENT OF PRIORITIES AND SHARED VALUES

The survey shows good alignment between ProMusa' stated priorities and values, and the ones envisioned by its members and subscribers. ProMusa is seen as a hub and dissemination place for information on banana; a common platform that facilitates collaboration and networking in the banana community from researchers to donors, practitioners, farmers and so on, where all

The interaction between experts in different places contributes to find solutions to very context-specific problems.

sorts of updated information on banana can be easily found, from news to scientific research, diseases alerts, funding opportunities and events. Knowledge sharing and connecting the banana community are primary roles according to both members and non-members. Respondents who have been engaged with the network between 5 and 10 years think that support to knowledge sharing events is crucial, while several respondents who have been with

ProMusa for over 10 years consider support to farmers and extension fundamental. On the other hand, several respondents (17%) think ProMusa should have an active research role, which is not its role anymore; or that it should be directly involved in characterization and diversity assessment, which is more the role of another network coordinated by Bioversity International (MusaNet). While ProMusa's key role in information and knowledge sharing is well recognized, other aspects of ProMusa's core business should be more clearly stated and assessed in order to better align members' expectations with the network's mission.

2. NETWORK CONNECTIVITY

IS THE NETWORK FOSTERING COMMUNICATION BETWEEN MEMBERS AND WITH NEXT USERS?

ProMusa's ability to attract members and people looking for information on banana through its online services is very high, as half of respondents mention it as their main source of information. Researchers in particular mainly look for scientific publications (81%) and news on banana and banana research (66%), while people from farmers' organizations most frequently look for training and extension material or training opportunities. Those from NGOs and government agencies look for general information and research news, while the private sector often looks for scientific publications, news, and training opportunities.

IS DISSEMINATION AND CAPACITY STRENGTHENING WITHIN AND OUTSIDE THE NETWORK BEING FOSTERED?

Many of the respondents focus on organization and capacity strengthening, which is a potential

channel for the information and knowledge shared from ProMusa to reach numerous and diverse next users. A quarter of respondents say they train others as a result of participating in the network, using information and knowledge obtained through ProMusa. Participation in ProMusa appears to foster collaboration outside of the network, another potential channel of impact of knowledge shared through ProMusa on next users. The network provides the type and quality of services that its members expect: timely information on network events is valued high or very high by 75% of respondents as well as enabling transparent and efficient flow of information (72%) and provision of high quality knowledge services (69%). Some negative feedback was given to the strengthening ProMusa members' capacity. However this is not the core role of ProMusa but several comments suggest the need for the network to support training and capacity strengthening, especially for young researchers and for people from developing countries.

3. NETWORK EFFECTS

THE PROGRESS OF THE NETWORK IN ACHIEVING ITS OUTPUTS, OUTCOMES AND IMPACTS

InfoMus@ is the most successful service provided by ProMusa (92% of respondents use it), frequently accessed and highly satisfying (48% are highly satisfied). About a third of respondents however never access the other services, especially among non-members. The mailing

InfoMus@ is the most successful service provided by ProMusa; 92% of respondents use it, 48% are highly satisfied.

lists are mentioned as a fundamental service that helps exchange opinions and find solutions to problems. ProMusa is considered very successful in increasing the sources of knowledge that people have available for their work (61%), contributing to mobilize banana science, and in improving its members' capacity (40%). More than 60% of respondents say the impact of participating in ProMusa was positive or very positive in different areas of their work. Some respondents feel that the network doesn't have an impact on increasing the visibility of their work (13.5%); ProMusa could thus possibly do more to help promote its members' research on banana or provide them the platform to do so themselves. Overall, the network relevance lies in providing a place to find and share information and knowledge on bananas leveraging on expertise from all over the world.

WHAT IS THE ADDED VALUE AND UNIQUE ROLE OF THE NETWORK?

ProMusa has a predominant role as a source of banana information and knowledge (48%) and has very positive impact on the sources of knowledge that respondents

Below: Banana market in the Mount Kenya, region available from the online photo database, [Musarama](#) (photo by: N. Palmer, CIAT).



Photo from an [InfoMus@](#) news on learning how to handle tissue-culture plantlets (photo by: T. Dubois, IITA).



ProMusa provides reliable, well-respected and updated information on banana production and research in one place

to free and updated information, with live feedback and sharing between experts from different fields all over the world, is therefore its competitive advantage.

WHO ARE THE NEXT USERS BENEFITING FROM NETWORK OUTPUTS AND HOW DO THEY BENEFIT?

All key informants interviewed after the survey work directly with farmers, providing training through field days and capacity building events, while some also provide training for technicians or other researchers. The information and knowledge provided by ProMusa is particularly relevant for them in these activities. This information, mostly scientific articles and training materials, is not only adopted by them but also adapted based on the target audience. They do not make many changes when they talk to technicians and extension agents, but they adapt it to local language and simplify it so that it is easy for farmers to understand and apply. The information is also adapted to the local context because banana problems and constraints are very context specific.

This brief is based on a report by Genowefa Blundo-Canto and Elisabetta Gotor 'Evaluation of Bioversity International's ProMusa network – Network analysis', Bioversity International 2014.

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have available for their work (61%). The unique added value of ProMusa according to respondents is that it provides reliable, well-respected and updated information on banana production and research in one place (51%); and that it connects different people worldwide with the same goal (32%). Members also appreciate the fact that it provides a space where information or views that don't reach journals can be shared, which gives a valuable feel of hot topics and research needs with a variety of opinions. The global reach, providing access

Key recommendations

Events organized by ProMusa are quite important for respondents, who would like to be able to attend more. Providing funding opportunities for conferences, trainings and workshops, would greatly improve engagement with the network and its effects: a travel grant to attend network events or fellowships for trainings, especially for young researchers and for researchers from developing countries are suggested. Otherwise, timely advertising of different funding and training opportunities on the website or through updates is highly valued by members and subscribers. Actual on-the-ground training might be beyond the scope of ProMusa, but several respondents would like the platform to act as a facilitator or catalyzer for capacity building efforts and training events.

The network provides the type and quality of services that its members expect: InfoMus@ and the mailing lists are the most successful service. An efficient and timely service on disease outbreaks and other breaking news is also a fundamental tool for ProMusa's members and subscribers, and it should be a priority.

Considering that key informants mention how they adapt the information to their needs, it would be useful to support the development of best practices and simple guidelines that are easy to adapt and share with farmers. Otherwise, it would be valuable to collect this information from members or other stakeholders who have developed adapted tools and are willing to share them, creating a collection of how to adapt and adopt. A specific section on best practices is suggested, with simple and easy to use sheets for technicians, which might also be differentiated by region, targeted to farmers, researchers or other groups. This effort is currently being addressed by participating in the World Banana Forum portal and should be promoted among members and subscribers.