

A. SUMMARY

Title : The International Bambara Groundnut Network (BAMNET) – a network approach for a partnership in research and development of a neglected and under-utilized crop

Duration : 1995 - ongoing

Objectives : Bambara groundnut can be considered to be under-utilized and neglected. The objectives of the International Bambara Groundnut Network (BAMNET) are to increase the importance of Bambara groundnut by improving its productivity, production, marketing and consumption.

Activities : Activities of BAMNET encompass aspects of the whole commodity chain such as germplasm conservation and management, breeding, utilization, information, documentation, agronomy, economics and sociology. However, at present, the activities of BAMNET focus on:

1. crop improvement and breeding;
2. processing and marketing; and
3. information and communication.

Area: Commodity Chain

Region: mainly but not exclusively in Sub-Saharan Africa

B. STAKEHOLDERS

Beneficiaries (in quantitative and qualitative terms)

Large to low benefits in the respective order:

Researchers, Extensionists, Breeders, Traders, Farmers, Policy makers, Government representatives

Research Partners

BAMNET is a network of about 100 interested and motivated individuals. The majority of them is working in Sub-Saharan Africa; some individuals are from Europe, USA and WANA. Beside, some African researchers are temporarily working in European and American AROs.

Donors and budget (including the “in-kind” contribution of the participating organizations)

BAMNET is a network of individuals collaborating voluntarily without a specific BAMNET budget but using modern information and communication technologies in a very cost-effective way. Contributions come from the following sources:

- in-kind contributions of members; and
- special projects running within the context of the BAMNET objectives and executed by its members.

Donors can therefore be considered African research institutions, European and North-American advanced research organisations, NRI, GTZ, BMZ, CTA, DFID, international organisations such as FAO, IAEA, European Commission, and international agricultural research centres such as IPGRI and IITA as well as the private sector.

C. PROJECT RESULTS AND IMPACT

Main results (in terms of technological packages, and/or socio-economic and/or environmental improvements)

The main activities of BAMNET focus on the following areas:

1. crop improvement and breeding;
2. processing and marketing; and
3. information and communication.

The presence of BAMNET and its use of advanced ICT has led to increased awareness at regional and international levels. The website brought together institutions and experts who did not necessarily collaborate in the past.

(1) New projects have been formulated in the area of „Crop Improvement and Breeding”. RAPD- and AFLP-technologies have been investigated at the Universities of Munich, Bonn and Nottingham to investigate the genetic diversity between and within landraces / accessions. In an FAO/IAEA-coordinated research project on genetic improvement of underutilized and neglected crops in LIFDCs irradiation-induced mutation techniques are tested to develop improved germplasm with resistance to bruchids and leaf spot disease, to improve yield genetically by optimizing the number of pods/plant and seeds/pod as well as to develop early maturing germplasm.

The University of Nottingham, the Technical University of Munich, the University of Swaziland, Botswana College of Agriculture, the Mahanene Research Station in Ombalantu / Namibia and the German Centre for Documentation and Information in Agriculture (ZADI) have proposed to collaborate to combine farmers’ knowledge, experiments and molecular techniques within an improvement programme *inter alia* to characterize the genetic composition of landraces, to facilitate cross-breeding to produce new varieties and to match the suitability of existing landraces to particular environments.

Several individuals have recently indicated their interest to join such initiatives.

(2) In the area of “Processing and Marketing” NRI and GTZ have been motivated to study the marketing potential of Bambara groundnut in Ghana and other selected areas of Africa. In a DFID-funded project „Assessing opportunities for increased utilisation of bambara groundnut in Southern Africa“ between the University of Nottingham, Intermediate Technology Development Group (ITDG) and the University of Swaziland research will take place in the major peri-urban centres in Zimbabwe and Swaziland to investigate the factors affecting the processing and increased utilisation of bambara groundnut in Southern Africa. A food company in the US has begun tests to develop snacks and other products for new markets.

(3) “Documentation and Information“ has been the interest of several initiatives. A collaboration between FAO and ZADI on “Mapping Bambara groundnut information related to genetic resources and environmental data (BAMMAP)” resulted in a tool to facilitate searches for some 700 selected accessions of the major collection at IITA through geographic information systems (<http://apps2.fao.org:8000/bambara/BAREPORT.htm>). Various activities by ZADI have resulted in 2 online-databases and other internet-based information components. IPGRI has made available the proceedings of the first BAMNET workshop in its series on “Promoting the conservation and use of underutilized and neglected crops” in print form and online. BAMNET, however, lives also of meeting with the members *inter alia* for information exchange and planning. The last BAMNET workshop had been taken place at CSIR in Accra in 1998. Co-funding was made available from CTA. The proceedings will be published by IPGRI soon.

Dissemination of the results (different modes and how the results have reached the different beneficiaries)

Through the advanced ICT-opportunities it was possible to support the three activity areas in particular as follows:

- (1) „Crop improvement and breeding“ are facilitated by the International Bambara Groundnut Database offering online access to passport, characterization and evaluation data of the main genetic resources collections (<http://www.genres.de/bambara/bambara.htm>).
- (2) Activities in „processing and marketing“ can benefit from specific information that is collected via the BAMNET information system; i.e. data on production, products, prices and stakeholders. BAMNET-members could also facilitate access to i.e. Bambara beans, (post-) harvest technology, economics and statistics.
- (3) The „information and communication“ area includes the online website of BAMNET (<http://www.genres.de/bambara>) with its components:
 - International Bambara Groundnut Database offering online access to passport, characterization and evaluation data of the main germplasm collections (<http://www.genres.de/bambara/bambara.htm>);
 - Bambara Groundnut Literature Database offering bibliographic and full text information on relevant publications (<http://www.genres.de/bambara/bamlit.htm>);
 - BAMNET - Mailing List (bambara@genres.de); email seems to be the major low-cost communication tool that keeps BAMNET running under the present budget constraints; and
 - up-to-date information on current projects, addresses, production, products and prices.

However, classical print media still play a leading role; in this respect the proceedings of the first BAMNET workshop published by IPGRI, DRSS and IPK is presently the key reference. It is hoped that the proceedings of the second workshop to be published by IPGRI will play a similar role soon.

Impact of the project (both in quantitative and qualitative terms)

The existence of BAMNET has increased the general professional awareness towards Bambara groundnut. Some new projects could be developed partly because this network existed. It seems that a sound initiative is now underway to improve the existing landraces in order to make improved varieties available to farmers. The first variety is in the registration process; this being the case in Namibia. The network played a facilitating role to increase the interest in the marketability of Bambara groundnut products. Information about some existing commercialisation of Bambara groundnut products at a medium scale of i.e. 3000 tons exported from Zimbabwe to South Africa and Botswana has been made available through the internet. At the same time, a food company in the US has started tests to develop products for new markets. So far, no quantitative impact can be reported. However, the BAMNET budget constraints are severe and new projects are needed.

D. PARTNERSHIP

Respective roles of the different stakeholders and coordination mechanisms for:

BAMNET is a network of about 100 interested and motivated individuals. The majority of them is working in Sub-Saharan Africa; some individuals are from Europe, USA and WANA. Beside, some African researchers are temporarily working in European and American AROs.

A Technical Advisory Committee (TAC) of 6 leading experts has been created to guide the BAMNET. For the present phase, the TAC-members have been elected covering the different areas of expertise; 2 crop improvement/breeding, 1 processing/marketing), 1 information/communication, 2 agronomy; IPGRI and FAO have a standing invitation as observers.

One person was elected as Coordinator.

No additional institutional structure exists.

BAMNET has been established in 1995 and is meant to be a permanent network until its objectives have been reached. It functions at a very low-cost level, mainly through modern information and

communication technologies. The coordination is supported by the above-mentioned ICT components; email communication, mailing list, online information system, 2 online databases and some printed material.

Added value of the partnership (in terms of research results, dissemination of results and impact)

The network approach and joint website and other ICT-components clearly add value to ongoing activities; the latter benefit from the large group of BAMNET – members to assist according to their respective areas of expertise and interest.

E. CONCLUSION

(Lessons learned; next steps foreseen; project sustainability; partnership continuation, etc...)

The network approach is clearly positive and has helped to initiate additional activities, to raise (limited) funds and to make use of existing resources, i.e. at various universities, for Bambara groundnut research and development.

It has also shown that an active participation of the network members is crucial and an effective coordination is needed to keep the members motivated. In order to achieve a more sustainable functioning of BAMNET these two issues have to be addressed seriously.

More regular meetings are needed; a biannual meeting of all members and annual meetings of the Technical Advisory Committee had been intended from the beginning but could not be implemented due to the limited resources available. There is no doubt that the regional and sub-regional fora of agricultural research (i.e. in Africa FARA, CORAF, SACCAR, ASARECA) and the National Agricultural Research Systems (NARS), in particular of the Sub-Saharan States of Africa, should be the backbones of any BAMNET continuation. The NARS should include Bambara groundnut into the national statistics and the national research, development and extension services as a mandate crop.

New projects are needed to continue the ongoing work in particular in the three main activity areas of BAMNET.