

Report on the Implementation of the PGTF Project INT/07/K04-00088614  
“Training of Maize Breeding Experts for the Effective Use of Maize Genetic Resources in  
Developing Countries”

The Project proposed by the Academy of Agricultural Sciences (AAS) of the Democratic People’s Republic of Korea (DPRK) titled “Training of Maize Breeding Experts for the Effective Use of Maize Genetic Resources in Developing Countries” was approved by both the Committee of the Experts for the Perez-Guerrero Trust Fund and the 77 Ministerial Meeting in 2006.

The training project was implemented in March 2014 by organizing the training workshops in Ethiopia and Guinea which were facilitated by the trainers from the DPRK.

This report consists of the narratives of the Background, Activities, Evaluation, Achievement and Lessons learned, Conclusion and Recommendation, and annexes I, II and III related to the implementation of the project.

## 1. Background

Although the project titled “Training of Maize Breeding Experts for the Effective Use of Maize Genetic Resources in Developing Countries” proposed by the Academy of Agricultural Sciences (AAS) of DPRK was approved in 2006, its implementation was postponed for several years due to the closure of the UNDP DPRK Office in 2007.

On 26 December 2013, the Project document was jointly signed by Mr. Ri Hung Sik, Secretary-General of the DPRK National Coordinating Committee for UNDP on behalf of the DPRK Government and Mrs. Shabnam Mallick, UNDP Resident Representative a.i. on behalf of the organization.

## 2. Activities for the project implementation

- Preparation for the training project
- The DPRK Government organized an Action Group consisting of Project Coordinator Mr. Yun Yong Il, Officer of the Ministry of Foreign Affairs, Project Technical Manager Mr. Choe Chol Ho, Section Chief of the Department of Foreign Exchange and Technology, Academy of Agricultural Science (AAS) of DPR Korea, two advisers and three trainers for preparing lecture texts and relevant training materials.
- The Action Group conducted collection and analysis of the issues and problems arising in maize breeding of the beneficiary countries, i. e., Ethiopia, Guinea, Tanzania and Rwanda, particularly the status of maize genetic use in these countries, and prepared training materials and training schedule accordingly.

- The Action Group, through the Embassies of DPRK in Ethiopia and Guinea, and through Permanent Representations of the beneficiary countries in UN, has completed the selection process of the trainees who would participate in the training workshops.  
Through this process, 35 trainees from 4 countries in Africa (12 trainees from Ethiopia, 1 from Tanzania and 1 from Rwanda, and 21 trainees from Guinea) were selected as participants of the training workshops.
- Trainers' mission travel and training workshops
- As agreed between the DPRK NCC for UNDP and the AAS, the Trainers to be sent to Ethiopia and Guinea to facilitate the training activities were selected and the CVs of the members of the training mission team were submitted to UNDP CO.

The 3 members of the Trainers' Mission were;

- 1) Mr. Yun Yong Il, official of the Ministry of Foreign Affairs and PGTF project coordinator
- 2) Mr. Choe Chol Ho, Section Chief of the Department of Foreign Exchange and Technology, AAS
- 3) Mr. Ryang Chol Min, Division Chief of R & D of Maize Genetic Resources, Pyongyang Crop Genetic Resources Institute, AAS

*\* In Guinea, the Trainers Mission was supported by Mr. Kim Won Jin, former Researcher of AAS who is presently Researcher, **Kim Il Sung** Agricultural Sciences Research Institute in Guinea.*

- The DPRK Trainers' mission left Pyongyang, DPRK on 5 March 2014 and, after completing the training activities in Ethiopia and Guinea, has returned to Pyongyang on 27 March 2014 via Lome, Addis Ababa and Beijing.
- Training workshops were organized in Ethiopia from 11 to 14 March 2014, with participation of 14 trainees (12 from Ethiopia, 1 from Tanzania and 1 from Rwanda), and another workshop in Guinea from 18 to 21 March 2014 with a participation of 21 trainees.
- Training activities in Ethiopia was organized in close collaboration with Ethiopian Institute of Agricultural Sciences (EIAR), while the one in Guinea was organized in collaboration with National Agency for Rural Development and Agricultural Counsel (ANPRO-CA) of the Ministry of Agriculture of the Republic of Guinea.
- The DPRK Embassies in Ethiopia and Guinea provided in-kind support for the training workshops in the respective countries within the fund limit authorized by the DPRK government.
- The training was performed through lectures with PowerPoint Presentation followed by discussions on individual basis and in small groups focusing on thematic issues. At each theme, there was discussion and interaction in which participants shared their experiences in maize breeding including constraints.
- At the closing session of the training workshops, each trainee was given the opportunity to present his or her observations and received the Certificate of Attendance.

### 3. Evaluation of the training

The evaluation forms prepared by UNDP were distributed to all the participants in advance, and collected in the closing session.

As suggested by the most of the training participants, the evaluation was carried out on anonymous basis.

Analysis of the submitted evaluation forms show that the overall evaluation of the training workshops was satisfactory. (Some of the participants did not submit the evaluation forms.)

#### 4. Achievement and Lessons learned

##### - Achievement

The “Training of Maize Breeding Experts for the Effective Use of Maize Genetic Resources in Developing Countries” held in Ethiopia and Guinea significantly contributed to capacity building of the maize breeders in the beneficiary countries in the areas of organizing maize breeding programs, particularly with regard to development of inbred lines, germplasm development and improvement, evaluation of hybrid and seed production.

##### - Lessons learned

- There is a strong need to communicate well with local stakeholders in deciding duration of the training period, and to combine the classroom training with practice.
- Selection of the language in preparing the training materials as well as selection of training venue should be considered in more detail.

#### 5. Conclusion and Recommendation

The overall assessment indicates that the implementation of the project “Training of Maize Breeding Experts for the Effective Use of Maize Genetic Resources in Developing Countries” is successfully completed.

The Perez-Guerrero Trust Fund is recommended to continue its support for improvement of exchange of technical knowhow among the developing countries for their agricultural development.

## Annex I (List of Participants of the training)

### 1. Ethiopia

No	Name	Sex	Occupation/ E-mail Address
1	Tolera Keno	M	National Maize Research Project Director, Bako Research Center, Ethiopian Institute of Agricultural Research (EIAR), tolekeno@yahoo.com
2	Hailu Mengistu	M	Breeder, EIAR hamegistu@gmail.com
3	Wende Abera (PhD)	M	Breeder, Bako Research Center, EIAR, wendegodise@yahoo.com
4	Goshime Mutuneh	M	Breeder, EIAR goshime-mutuneh@yahoo.com
5	Gezahagu Bogale (PhD)	M	Senior Breeder, Melkasa Research Center, EIAR gezehagubogale@gmail.com
6	Emishaw Diro	M	Breeder, Ambo Research Center, EIAR emishawdiro2006@yahoo.com
7	Desalew Fente	M	Breeder, Fioteselam Research Center, EIAR desalewfente25@gmail.com
8	Endeshaw Tadess	M	Breeder, EIAR etadde12@gmail.com
9	Ziggiju Mesenbet	M	Breeder, EIAR, zegje23@gmail.com
10	Desta Bunje	M	Breeder, EIAR <a href="mailto:destabunje@gmail.com">destabunje@gmail.com</a>
11	Bitew Tilahun	M	Pathologist, EIAR, bitewtilahun@yahoo.com
12	Midekssa Dida	M	Pathologist, EIAR midekssadida@gmail.com
	Derese Teshome	M	Focal Point (MA, Associate Researcher) Rural Livelihood and Extension Communication Specialist, Ethiopian Institute of Agricultural Research (EIAR) P.O. Box 2003, Addis Ababa, Ethiopia Tel. +251116454452, Mobile: 0911744540 E-mail: <a href="mailto:simerson10@gmail.com">simerson10@gmail.com</a> , <a href="mailto:derese06@yahoo.co.uk">derese06@yahoo.co.uk</a>

### 2. Tanzania (Participated in the training workshop in Ethiopia)

No	Name	Sex	Occupation/E-mail Address
1	Dr. Arnold Angelo Mushongi	M	Principal Agricultural Research Officer Tel: +255 753 358712 E-mail: <a href="mailto:mushongi@yahoo.com">mushongi@yahoo.com</a> , <a href="mailto:amushongi@gmail.com">amushongi@gmail.com</a>

### 3. Rwanda (Participated in the training workshop in Ethiopia)

No	Name	Sex	Occupation/E-mail Address
1	Dr. NGABOYISONGA Claver	M	Director, Crop Research and Extension, Rwanda Agriculture Board, Head Maize Program, Principal Maize Breeder, Ministry of Agriculture and Animal Resources P.O. Box 5016-Kigali Cell phone: +250-788309522/728309522 E-mail: <a href="mailto:c.ngaboyisonga@yahoo.com">c.ngaboyisonga@yahoo.com</a> , <a href="mailto:c.ngaboyisonga@rab.gov.rw">c.ngaboyisonga@rab.gov.rw</a>

#### 4. Guinea

No	Name	Sex	Occupation/E-mail Address
1	Nieba Gansile Cristian	M	Maize Project Manager, Bordeaux Institute of Agricultural Science gansilenieba@gmail.com
2	Mohamed Diakote	M	Researcher of Maize, Bordeaux Institute of Agricultural Science Mamadiakote1953@gmail.com
3	Dr. Kourouma Makan	M	Science Coordinator, Bordeaux Institute of Agricultural Science kourouma-makan@yahoo.fr
4	Fanta Keita	F	Researcher of Maize, Bordeaux Institute of Agricultural Science kfanta50@gmail.com
5	Camara Sekouna	M	Director, Kilissi Institute of Agricultural Science camarasekouna@yahoo.fr
6	Pathe Diallo	M	Researcher of Maize, Kilissi Institute of Agricultural Science pathediallo2013@yahoo.fr
7	Bah Ibrahima	M	Researcher of Maize, Kilissi Institute of Agricultural Science bahibrahima@gmail.com
8	Camara Minthe	M	Researcher of Maize, Bareng Institute of Agricultural Science mminthecara@gmail.com
9	Diallo Hassane	M	Researcher of Maize, Foulaya Institute of Agricultural Science
10	Beavogui Jean Togba	M	Researcher of Maize, Seredou Institute of Agricultural Science
11	Diane Amara	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
12	Oumar Bella Diallo	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture ourmarlofan@yahoo.fr
13	Chiano Amador Barry	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
14	Mamadi Berete	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
15	Mamy Kokoly	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
16	Soriba Soumah	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
17	Patrice Kamano	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
18	Sekou Holota Camara	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
19	Naby moutha Camara	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
20	Toluo Tamba	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
21	Malano Niouma Alexandre	M	Expert, National Agency for Rural Development and Agricultural Counsel(ANPRO-CA), Ministry of Agriculture
	Famoi Beavogui	M	<b>Focal Point</b> Director-General for Agricultural Science, Ministry of Agriculture E-mail: <a href="mailto:Famoibeavogui@irag-guinee.org">Famoibeavogui@irag-guinee.org</a>
	Hervey Andre	M	Desk Officer of training, Ministry of Agriculture E-mail: <a href="mailto:hervy57@yahoo.fr">hervy57@yahoo.fr</a>

## Annex II (Content of Training Sessions)

1. The importance and potentials of maize as a food crop in Africa
2. Maize growing environments in the tropics
3. Situation in development and diffusion of maize varieties in the tropics
4. Direction of maize breeding and trend in germplasm use in the tropics
5. Collection, evaluation and use of maize genetic resources
6. Designing a general maize breeding project
7. Development of F1 hybrid maize
8. Methods for development and selection of inbred line
9. Test for level of fixation of inbred lines
10. Selection of parental lines
11. Mass selection
12. Breeding special purpose maize
13. Trials of cultural techniques for maize varieties selected
14. Regional trial of maize varieties and national variety test
15. Evaluation for abiotic stress tolerance in maize
16. Evaluation of maize germplasm for grain quality
17. Processing data from maize breeding trial and Preparation of project report
18. Maize Seed Production
  - Appendix I Descriptors for maize
  - Appendix II Design and analysis of evaluation trials of genetic resources collections
  - Appendix III Procedures of seed handling in genebanks

# Annex III (Photos)

## 1. Training Workshop in Ethiopia





## 2. Training Workshop in Guinea





