Final Report on the Implementation of the Project of Perez-Gerero Credit Fund for Economic and Technical Cooperation Between the Developing Countries in 77 Country Group-

《Training of Experts for the Efficient Use of Maize Gene Resources in African Countries》

The Experts Committee of Perez-Gerero Credit Fund has deliberated on the project-"Training of Experts for the Efficient use of Maize Gene Resources in African Countries"-suggested from D.P.R. of Korea for a investment of the Credit Fund, and approved to implement the project with 81,200US$ in the first place.

To implement the approved project – "Training of Experts for the Efficient Use of Maize Gene Resources in African Countries", the government of D.P.R. of Korea has concluded a sub-contract with the Academy of Agricultural Science(AAS) of D.P.R. of Korea.

This report is including the contents of activities of AAS to implement the project and the settlement of expenses.

1. Project background

To increase the food production in African countries is posed as a prime task in strengthening the independence of national economy and stabilizing the people's livelihood.

Recently, African countries are not only exerting their joint efforts on the basis of the principle of collective self-reliance, but also making a big development in the cooperation and interchange in the field of economy and technology through international organizations, to solve the food problems and enhance the independence of national economy.

One of the important keys to solve the food problem in African countries is to strengthen the interchange and cooperation for breeding good seeds of maize, which almost of Africans consume as a staple food.

The most effective way to increase the production of maize and improve the quality is increasing the yield of maize per unit area by seed improvement.

Nowadays, African countries are trying to increase the maize production, but not great advances are being made because of backward techniques in breeding and selecting seeds.

The way to conquest this situation is to train their experts for seed breeding and selection of maize which are first process for the efficient use of maize gene resources, and so, to make them breed new maize varieties by their technologies.

From these requirement, AAS of D.P.R. of Korea, on the basis of big experiences that had been gained in breeding maize seeds suitable to the regional conditions of African countries, made a decision to organize a scientific and practical science-technology training course.

This project has contributed to the training of experts for the efficient use of maize gene resources in the benefited countries which had not enough technique and practical experienees in maize breeding and seed selection among African countries, by being performed with the concentrated lecture and practice plan for 2 titles on "Collection and Use of Maize Gene Resources", 14 titles on "theory and Method of Maize Breeding", and 6 titles on "Practice for Maize Breeding and Seed Selection".

2. Activities for the Implementation of the Project

To implement the project successfully, the government of D.P.R. of Korea appointed an official of the Ministry of Foreign Affairs, who is responsible for the South-South Cooperation work in 77 Countries Group, as a project coodinator, Mr Li Yong Gun and Mr. Kim Bak as partial responsible consultant, and organized a business group, for the implementation of the project, including other scientists and technicians.

The business group has selected 8 scientists who were authoritative in this field, as consultants, and done preparative works for the implementation of the project with them.

First of all, the group has drawn up plans on " Maize breeding and seed selection"for experts from the benefited countries to be familiarized to the theory and practical experiences of maize breeding and seed selection (including 35 theory lectures, 15 practices and 8 hours of visit practice), in Korean, and translated them into English and French, and published, after deliveration.

The plans for theory lecture and practice have included enough data for the situation of maize breeding and seed selection work in Guinea, Democratic Congo, Mali ,Ethiopia, and D.P.R. of Korea which could help the experts exchange their practical experiences for the efficient use of maize gene resources, and have been prepared in order that they could take measures to use efficiently the maize gene resources in coincidence with the regional conditions.

The group have also done the works to prepare necessary material and technical conditions including training rooms, instruments and a trial plot for practice in the Kim Il Sung Agricultural Science Research Institute in Guinea, to ensure a success of the course.

With these, they have done the work to exchange information on the situations of use of maize gene resources, natural and geographical conditions, climate and soil conditions and experiences in maize breeding and seed selection, in the benefited countries.

On the basis of these detailed preparations, AAS of D.P.R. of Korea sent Mr. Li Yong Gun as responsible consultant of AAS, and Prof, Dr. Kim Bak of the Maize Research Institute, to the spot for training.

The delegation of consultants met some officials of the Ministry of Agriculture and other concerned departments of Guinea to inform the organization of training from Oct. 20th to Oct. 27th, 2002, after arrival in Guinea, and has done some preparatory work for the training course on the spot.

The main course has been carried out in the Kim Il Sung Agricultural Science Research Institute and the Plambia Hotel in Kintia, Guinea, from Oct, 28th to Nov. 10th, 2002.

In the ceremony of opening course, Mr. Li Yong Gun, a consultant of AAS of D.P.R. of Korea has spoken, and there were a opening speech and introduction for schedule of course and a trainer.

5 people from Guinea, 2 people from Democratic Congo, 2 people from Mali, and 2 people from Ethiopia have taken parts in the course.

The lists of trainees and the titles of course lecture are in Annex I and II.

The stationeries and instruments for training course and training plans were supplied to the trainees.

The course gave so impresive knowledges to the trainees by not only delivering theory lectures for the maize breeding and seed selection including the experiences of D.P.R. of Korea and international tendencies, using a digital projector, but also performing field practice to combine closely the theory with practice.

Also, the visit to the science exibition and trial field of the Kim Il Sung Agricultural Science Research Institute and the tropic Fruit Research Institute in Kintia were organized for the trainees.

In the ceremony of closing course, Mr. Li Yong Gun, a responsible consultant, gave a speech and then representatives by countries offered their congratulations.

The Training Course Participation Certificates was given to every trainee, under the joint name of D.P.R of Korea and the Cooperation project of 77 countries group for "Training of Experts for the Efficient Use of Maize Gene Resources".

All participants appriciated highly the training course-"Training of Experts for the Efficient Use of Maize Gene Resources in African Countries"-in the kim Il Sung Agricultural Science Research Institute in Guinea to be done success fully under the warm care and deep concern of the Korean People's great leader Comrade Kim Jong Il.

And they presented their demands for the continuous organizations of training course like that through the 77 countries Group to AAS of D.P.R. of Korea.

All participants also required that the trainers would visit their countries to organize a training course and presented their minds to give advice to their governments for the materialization of their demand.

3. Output of the project implementation

Through the training course, the experts of the benefited countries;

1) Carried out the works to consider and analyse the situations of the efficient use of maize gene resources in their countries, and confirmed the necessity to improve existing technology in the field of maize breeding and seed selection;
2) Prepared the methodologic and scientific base to solve the scientific and technical issues for the efficient use of maize gene resources in their countries by themselves;
3) Found the possibility of maize breeding adaptable to their countries' practice and built the bases to establish prospective targets in the field of maize breeding and seed selection;
4) Prepared the base and possibility to perform breeding of new maize varieties and training of new experts of maize breeding and seed selection which had done depending on other developed countries, by themselves;
5) Acquired the scientific theories and practical experiencies on maize breeding and seed selection and so prepared the scientific and technical bases to breed new maize varieties in their countries which the technology are less developed, by themselves in the near future.

4. Conclusion

Implementing the project, AAS of D.P.R. of Korea has recognized that breeding the new, high yield maize varieties resistant to unfavourable climate condition would be very important task to increase the maize production at present, and in relation with this, the training of experts for maize breeding and seed selection should be preceded, and for its urgent solution, it is surely necessary to strenghen the close cooperation between developing countries and organize training course frequently through the 77 Countries Group.

From the results of the course and the suggestions of trainees, AAS of D.P.R of Korea are considering that it is needed for the 77 Countries Group to supply further fund cooperation effective to develop the agricultural science and technology in developing countries.

Such as above mentioned, AAS of D.P.R of Korea has sufficiently carried out the all planned tasks, by implementing the project successfully.

5. Utilization of Funds

The funds for the cooperation from Credit Fund of the 77 countries Group had been used for the implementation of project effectively.

The outline of fund expense is as followes;

№	Item	Cost(USA$)
1	Personal	41,300
2	Travel	18,600
3	Training	7,200
4	Instruments	8,700
5	Others	5,400
	Total	81,200

On behalf of the government of D.P.R of Korea

Choe su Hon, a vice minister of the Ministry of Foreign Affairs

On behalf of the Sub-Contractor

Prof. Gye Yong Sam, President of AAS of D.P.R. Korea

Annex I

List of participants to the Training Course, “Training of Experts for the Efficient Use of Maize Gene Resources in African Countries”

Country	Name	Sex	Birth year	Position
Guinea	Malik Soumar	M	1955	Head, crop seed technology development division, General Beaura for Science Research, Ministry of Agriculture.
	Sekouna Kamara	M	1954	Head, maize breeding division
	Pathe diallo	M	1962	Head, Maize breeding Lab, Kim Il Sung Agricultural Science Res. Inst.
	Sovleimane Keita	M	1956	Researcher,
	Tchirno Hamide Diallo	M	1960	Researcher,
Mali	Brahima Dembele	M	1956	Researcher, unit of Gene Resource
	Ramne Tarore	M	1953	Researcher, Maize Research Program
Ethiopia	Tesfaye Negussie	M	1949	Senior Researcher, Ministry of Agriculture
	Tolessa Debele	M	1963	Coordinator, state Maize Research Program, Bargo
D.congo	Kembe Mudiango	M	1958	Head, Division for seed selection Ministry of Agriculture
	Mwamba Tshitenda	M	1947	Head, Genetic Lab, Instru ment Division, Ministry of Agriculture

Annex II

Titles of Lecture and Presentation Done During Course

- Lecture

1) Tendency of Maize breeding
2) Method of collection, classification and Assessment of Maize Gene Resources.
3) Store and Service of Maize Gene Resources
4) Introduction Breeding Method of Maize
5) Mass selection Method in Improvement of Maize Varieties
6) Semi-Sib selection Method in Improvement of Maize Varieties
7) Complete-Sib selection Method in Improvement of Maize Varieties
8) Use of Heterosis in maize Breeding
9) Breeding Selfed line maize
10) Evaluating Method of Hybrid combining Ability of Maize
11) Q.P.M. Principle and Method in Maize Breeding
12) Breeding of Maize Variety Resistant to water and Nitrogen Supply Stress
13) Assessment of Resistance of Maize to Main Pests.
14) Genetic Property of Main Character of Maize
15) Production Technology of F1 hybrid Maize Seed
16) Testing Method of Maize Seed
17) Processing and Statistical Management of Maize Research Data
18) Method to Arrange Maize Trial Plots

- Practices and Experiences Exchange

1) Maize Crossbreedign
2) Individual Selection of Maize
3) Dividing Maize Trial Plot
4) Harvesting Estimation plot of Maize
5) Index and Method to Investigate Maize character
6) Production Technology of Maize stock seed
7) Successes and Experiences achived in the field of the use of Maize Gene Reseurces in D.P.R. of Korea
8) Successes and Experiences achived in the field of the use of Maize Gene Reseurces in Guinea
9) Successes and Experiences achived in the field of the use of Maize Gene Reseurces in Mali
10) Successes and Experiences achived in the field of the use of Maize Gene Reseurces in Democratic Congo
11) Successes and Experiences achived in the field of the use of Maize Gene Reseurces in Ethiopia

- Visit

1) the science Exibition and Trial Field of the Kim Il Sung Agricultural Science Research Institute in Guinea
2) Tropic Fruit Research Institute, Kintia, Guinea