Islamic Organization for Food Security
l'Organisation Islamique pour la Sécurité Alimentaire
المنظمة الإسلامية للأمن الغذائي

REPUBLIC OF TÜRKİYE
MINISTRY OF CULTURE AND TOURISM

TİKA 30 years

CONCEPT NOTE
On the Capacity-building training
On Genetic Resources and Gene Bank Management
Jointly with
Turkiye Seed Gene Bank
The Ministry of Agriculture and Forestry of the Republic of Turkiye,
Turkish Cooperation and Coordination Agency
For the OIC Member States
Within the "IOFS Year of Africa"

Introduction

A wide variety of plant genetic resources (PGR) is the basis of food and nutrition security, as well as the foundation of economic security in the agricultural sector. However, mainstream agriculture currently depends on very little diversity, both in terms of the number of crop species cultivated and diversity within those crops.

2. There is an urgent need to promote crop diversity conservation by demonstrating its value in sustainable agriculture through the development of materials with improved nutrient utilization efficiency, yield stability, and resilience to cope with new challenges posed by the current climate change situation.

3. In this context, PGR management *in situ* (on-farm) is critical since it allows for the constant development and adaptation of conserved materials to changing environmental factors, and hence the generation of new diversity, which is thought to be important for future crop improvement. Indeed, a better knowledge of the *in situ* mechanisms of crop diversity evolution is required.

4. In line with the mandate of the Islamic Organization for Food Security (IOFS) to assist and provide expertise and technical know-how to Member States on various aspects of sustainable agriculture, rural development, food security, and biotechnology and the objectives of the Programme on Development of National Gene Banks in the OIC Region to facilitate the strengthening of the institutional and human capacity of the research institutions and gene banks through coordination and cooperation, as well as to build a framework for constant collaboration among countries on conservation and sustainable use of plant and animal genetic resources for increasing agricultural productivity and ensuring food security in the OIC Member States, the IOFS intends to conduct training courses/workshops in this regard.

5. The 4th IOFS General Assembly, held virtually in September 2021, decided that the year 2022 would be celebrated as the "IOFS Year of Africa". As such, an Action Plan

that incorporated server projects and activities for the African Member States was devised and it is being implemented since the beginning of the current year. Considering that Africa is a hot spot and a center of diversity for many species of global importance, and most of the Sub-Saharan Member States lack national and regional gene banks in which they could conserve in situ and on-farm genetic resources, using the traditional farming practices, the IOFS intends to pay special attention towards addressing such challenges.

2. Background

6. Based on the preliminary research and activities conducted by IOFS together with partners during 2020-2021 on the status of the gene banks in the OIC region, the needs, and requirements of the research institutes are to obtain external knowledge and experience on various conservation practices of PGR and efficient operation of the gene bank from the well-developed centers. During the several meetings of the PGR curators from Asia, Africa, and the MENA region organized by the IOFS and the Ministerial Standing Committee on Scientific and Technological Cooperation of the OIC (COMSTECH) in 2021, the developed and advanced research centers and gene banks were identified that could be able to provide and deliver practicing knowledge and experience of the conservation of the PGR to those centers that are in need. Among advanced research centers, several ones were recognized in Turkiye, Pakistan, Tunisia, Malaysia, and Egypt.

3. Objectives and outline of the training for consideration

- 7. The IOFS aims to train gene bank curators and genetic resource professionals in *good practices for effective ex-situ conservation and genetic diversity* held in gene banks;
- 8. The germplasm managers and curators should always keep abreast of and take into account the *good practices of the management of gene banks and germplasm collections from acquisition to registration, regeneration, conservation, characterization, distribution, and finally documentation*. In this regard, it is important to discuss the initial elements of management of the gene bank and the collections; discuss options for efficient and cost-effective management of seed collections in gene banks; and discuss risk identification and actions to minimize or manage risks at the various gene bank activity and operations;
- 9. Gene bank management begins with an institutional legal and policy framework. It is necessary for countries to discuss and consider the options for developing effective gene bank strategies;
- 10. Gaining practical experience on PGR management processing.

11. In addition, it would include lecture materials and practical hands-on lab exercises. The use of technologically advanced methods on PGR will help in achieving better conservation and use of diversity for sustainable agriculture. The detailed outline of the training would be structured jointly with the hosting Institute/Gene Bank and specifically designed for OIC PGR specialists.

4. Implication and hosting Institute.

12. The National Gene Bank of Turkiye based on the Field Crops Central Research Institute, under the Ministry of Agriculture and Forestry of the Republic of Turkiye has shown full capacity which uses advanced technologies and is one of the biggest Gene Banks in the OIC region with 61.451 accessions kept that is suitable to conduct the stated training. The Field Crops Central Research Institute has become an essential partner of the IOFS, actively participating in IOFS activities, particularly wheat development and PGR/Gene Bank issues. The Research Center and Gene Bank are located in Ankara, Turkiye.

13. The Turkiye Gene Bank works on the conservation, collection, and morphological molecular characterization of plant genetic resources, especially the genetic diversity of crop plants. Moreover, the Gene Bank designed and practiced the Special System developed by National Engineering – Gene Bank Information Management System that could be demonstrated to the training participants and would add value to the received knowledge.

14. The management of germplasm banks for *ex situ* conservation includes a sequential development of stages, that is collection, multiplication, regeneration, documentation, characterization, evaluation, and, lastly, distribution.

5. Dates of training

15. Dates for training workshops would be identified and adjusted in line with the availability of the experts and lecturers of the hosting Institute and **other external specialists from other gene banks and international organizations** to be invited in addition.

16. The proposed dates of the training are **from 26 to 30 September 2022.**
The event considers five days (5) of training including theoretical and practical knowledge, demonstration of processes, facilities, equipment and etc.

6. Beneficiaries:

17. Gene bank curators and genetic resource professionals in the OIC Member States, specifically Africa and partially Asian countries.

Africa:	**Asia:**
1. Republic of Uganda; 2. Republic of Sierra Leone; 3. Republic of The Gambia; 4. Republic of Guinea Bissau; 5. Republic of Mozambique; 6. Federal Republic of Nigeria;	7. Republic of Uzbekistan; 8. Republic of Azerbaijan; 9. Republic of Kazakhstan; and 10. Republic of Turkmenistan; 11. Bangladesh; and 12. Tajikistan.