

	Distribution of genetic resources at the National Centre for Genetic Resources and Biotechnology (NACGRAB)		
	SOP Number: NACGRAB DIST SOP v1.2	Version: 1.2	Page 1 of 8
	SOP Owner: Babatunde Adetoro	SOP Approver: Adam Olosunde	

1. Introduction & Purpose

NACGRAB's genebank hosts the most comprehensive collections in Nigeria with a total record of about 10500 accessions of 40 different crop species, obtained and collected mostly within the country and seldom from outside the country's collection. They are kept and maintained in the genebank domicile at NACGRAB facility in Ibadan, Oyo State Nigeria. In 10 years (2010 to 2019) of work, the genebank at NACGRAB has distributed 9,888 germplasm samples for research and institutions all over the country.

The purpose of this SOP is to ensure consistency in the distribution of crop genetic resources and compliance with national and international treaties and conventions.

2. Scope

This SOP applies to the distribution of Plant genetic resources which includes orthodox and some recalcitrant seed and seedlings. It may be used to guide distribution activities undertaken by NACGRAB staff on station and outside stations located in other regions. This SOP can also be made available to other research institutions as required.

The following distribution activities are described in this SOP:

- Review of request
- Confirmation of germplasm availability
- Requested sample preparation
- Sample ready for collection by requestor or courier
- Update data page
- Feedback

Annex 1 shows the distribution flowchart with major steps.

	Distribution of genetic resources at the National Centre for Genetic Resources and Biotechnology (NACGRAB)		
	SOP Number: NACGRAB DIST SOP v1.2	Version: 1.2	Page 2 of 8
	SOP Owner: Babatunde Adetoro	SOP Approver: Adam Olosunde	

3. Definitions & Abbreviations

The following definitions and key terms are pertinent to this SOP:

Accession	A district uniquely identifiable sample representing a cultivar, breeding line or a population, which is maintained in storage for conservation and use.
Germplasm	Living genetic resources such as seeds and tissues that are maintained for conservation and utilization
Recalcitrant seeds	Seeds that are remarkably short-lived and cannot be dried to moisture content below 20-30%. Desiccation sensitive seeds
Orthodox	Seeds that can survive drying and/or freezing during ex-situ conservation.

4. Procedure

4.1 **The distribution procedure** is initiated when the genebank receives a written germplasm request submitted by a requestor via NACGRAB e-mail: nacgrab@gmail.com or the requestor personally bringing the request letter to NACGRAB. The germplasm request intention is dropped at the Director/CEO's office and he approves that the procedure for distribution be initiated by the germplasm distribution officer (SOP owner) who ensures that all requirements are met.

Distribution Review

4.2 **The request** is filed by the distribution officer and registered in the database with information on the genetic resource requested, requestor and date.

4.3. **The Availability of genetic resources** is the first criteria to be checked. An accession is available when three conditions are met:

- 1) The germplasm requested is in stock.
- 2) The stock of material is enough to fill the request.
- 3) The requested material is high in viability to allow for maximum utilization. The germination value of 85% is the certification standard for cultivated crops species while about 50% germination value is acceptable for crop wild relatives (CWR). Prior to distribution, germination date is verified and/or re-tested to ensure minimum germination value of 85% and 50% for cultivated crops species and CWR respectively.

4.3.1. If the request specifies a list of particular accession IDs and all accessions are available in the quantity that can still be dispensed, the distribution procedure is continued.

4.3.2 If the accessions are not available, the requestor is informed that the accession is temporarily unavailable and the detailed description of the reason for non-availability will be communicated, estimated date when the accession requested will be available

	Distribution of genetic resources at the National Centre for Genetic Resources and Biotechnology (NACGRAB)		
	SOP Number: NACGRAB DIST SOP v1.2	Version: 1.2	Page 3 of 8
	SOP Owner: Babatunde Adetoro	SOP Approver: Adam Olosunde	

will be effectively communicated to the requestor. Alternative accessions are also suggested at this time.

4.3.3 If the request is not clear or appears to contain errors or other discrepancies, the requestor is asked to clarify.

4.3.4 If the request does not list particular accession numbers, the genebank staff chooses a set of accessions to satisfy the requestor's needs based on curator data and relevant experts' knowledge. For selected studies, the genebank may offer a core collection that will provide the requestor a wide range of diverse materials for research/breeding purposes.

4.4 **Processing time** for a consignment depends on several factors including but not limited to: the viability status (must have a recent viability percentage data) of the seed requested, the location of the requestor (internal (within the institute), domestic (within the host country), and the time it takes to resolve inquiries and consultations. Genebank staff strive to keep to a minimum the time between the receipt of a request and the dispatch of the consignment. Processing time is 5days for internal transfers that do not require viability and health testing, 2weeks for materials that requires viability and health testing and validation, for domestic transfers (within the host country)

4.5 **The list of accessions** is finalized and registered in the database. The following conditions for distribution are checked by genebank personnel: 1) requestor is clearly identified as well as the contact, 2) list of accession is defined and its distribution policy is clear (4.3), 3) purpose for the germplasm is recorded.

4.6 **Active file record.**

4.6.1 If all requirements are met in the distribution policy (4.3), the request is filed in the active request file for proper monitoring.

4.6.2 If the requestor requires further information aside the basics the personnel handling the file request for data base search to give additional information.

Sample Preparation

4.7 **The materials** are prepared for distribution, which may be in the form of seeds or seedlings. For specific procedures on the propagating technique please send a mail to nacgrab@gmail.com

The identity of the accessions is verified by checking with a copy of the request letter which has been file in the active request file. All unmet requests are filed but annotated with reasons for unavailability and discrepancies.

	Distribution of genetic resources at the National Centre for Genetic Resources and Biotechnology (NACGRAB)		
	SOP Number: NACGRAB DIST SOP v1.2	Version: 1.2	Page 4 of 8
	SOP Owner: Babatunde Adetoro	SOP Approver: Adam Olosunde	

4.8 **Labels** are printed in ink on the envelopes as labeled.



Fig.1. Labels are printed in ink after weighing in preparation for distribution.

- 4.9 The genebank distributes, free of charge, 1 - 5grams of seed per accession of requested and available germplasm. Larger quantities may be distributed but are subject to availability and research purpose.
- 4.10 **The consignment** is prepared by checking the seeds against the finalized list and inspecting for correspondence of accession number (visual checking). A final verified list of accessions is generated. The envelopes are visually checked for openings/leakage and arranged sequentially in a bigger envelop and sealed.
- 4.11 The completed consignment is inspected by NACGRAB germplasm monitoring team whose mandate is to monitor the movement of genetic resources in and out of the organization. A member of the team comes to the bank for verification of the batch of prepare materials. This last inspection will: 1) verify compliance with all necessary procedures and obligations 2) check that the germplasm list corresponds to the germplasm samples, 3) check the request letter with what is being supplied in distribution 4) Monitors and document requestor/collectors form.

	Distribution of genetic resources at the National Centre for Genetic Resources and Biotechnology (NACGRAB)		
	SOP Number: NACGRAB DIST SOP v1.2	Version: 1.2	Page 5 of 8
	SOP Owner: Babatunde Adetoro	SOP Approver: Adam Olosunde	



Fig 2. Small consignments are packed in paper envelopes while larger requests are packed in boxes.

4.12 **Availability of information** is essential and therefore error-free transmission of data associated to the accessions is provided electronically to the requestor/recipient, either as an attachment to an email or via phone call. Reasonable measures are taken to obtain and supply additional information that is not made available as a standard.

Post-consignment follow-up

4.13 An **acknowledgement receipt/form** is requested to be filled and submitted at collection by the requestor or collector. This may also be attached to consignment to be delivered by courier and retrieved for documentation.

4.14 A **“Customer Survey”** is sent post-reception to monitor the quality of the service provide by the genebank and the condition of the genetic resources upon arrival. Any observations are noted, and steps are taken to clear the observations. The requestor is contacted to acknowledge receipt of the observations and to provide information regarding corrective actions.

4.15 Genebank staff strive to periodically request data and research results obtained by the recipient to build the body of knowledge of each germplasm collection.

Documentation update

4.16 The following consignment details are recorded in the genebanks database.

For the documentation

	Distribution of genetic resources at the National Centre for Genetic Resources and Biotechnology (NACGRAB)		
	SOP Number: NACGRAB DIST SOP v1.2	Version: 1.2	Page 6 of 8
	SOP Owner: Babatunde Adetoro	SOP Approver: Adam Olosunde	

- date
- recipient name
- recipient address
- recipient State
- document location
- retrieval information

For the material (accessions):

- crop
- sample ID

The following documents are scanned and filed:

- Request for material
- List of sent materials

4.17 The distribution procedure is completed and finalized when: 1) the genebank receives an official confirmation by the requestor that the material has arrived to its destination and 2) all pertinent information has been entered into the genebank database.

5. Staff Training and Competency

Training and competency requirements to perform this SOP have been met by the following staff:

- Mary Adiat-Adegoke, Agric Suprintendent, oversight of the seed distribution procedure.
Contact maryadiat18@gmail.com;
- Babatunde Adetoro, Agric Suprintendent, oversight of the seed testing and packaging.
Contact torosangokunle@gmail.com;

Genebank staff undergo periodic training. Mary Adiat-Adegoke and Babatunde Adetoro were trained (Seed Processing Techniques and Handling) in April 2016 at the Millennium Seed Bank (MSB) in the United Kingdom.

	Distribution of genetic resources at the National Centre for Genetic Resources and Biotechnology (NACGRAB)		
	SOP Number: NACGRAB DIST SOP v1.2	Version: 1.2	Page 7 of 8
	SOP Owner: Babatunde Adetoro	SOP Approver: Adam Olosunde	

6. *References*

FAO. 2014. Genebank Standards for Plant Genetic Resources for Food and Agriculture. Rev. ed. Rome

FAO. 2022. Practical guide for the application of the Genebank Standards for Plant Genetic Resources for Food and Agriculture: Conservation in field genebanks. Commission on Genetic Resources for Food and Agriculture. Rome.

Millennium Seed Bank 2015. Seed Conservation Techniques (SCT) Training Manuals and Workbook. West Sussex. United Kingdom.

Millennium Seed Bank 2016. Seed Processing Techniques and Handling Manuals and Workbook. West Sussex. United Kingdom.

7. *Revision History and frequency*

Effective Date of the SOP	Version #	Description	Reviewed By
12/01/2020	1.0	Original SOP	Adam, Olosunde
27/11/2020	1.1	Audited SOP	Janny van Beem
15/01/2024	1.2	Edited SOP	Janny van Beem

Revision frequency: the review of this SOP is done on a yearly basis and is part of the staff's work plan and performance evaluation process.

8. *Citation, Copyright, Access agreement*

Citation: National Centre for Genetic Resources and Biotechnology, 2024, *Distribution and exchange of plant genetic resources, (SOP NACGRAB-DIS-v1.2)*. Contributors: Sunday Aladele, Adam Olosunde, Olutoye Fashola, Mary Adiat-Adegoke and Babatunde Adetoro.

© NACGRAB, 2024

NACGRAB has an explicit access agreement (www.nacgrab.gov.ng) that defines the terms of use of the information.

	Distribution of genetic resources at the National Centre for Genetic Resources and Biotechnology (NACGRAB)		
	SOP Number: NACGRAB DIST SOP v1.2	Version: 1.2	Page 8 of 8
	SOP Owner: Babatunde Adetoro	SOP Approver: Adam Olosunde	

Annex 1. Flowchart of the Distribution process.

Annex 1. Flow chart of distribution process

