

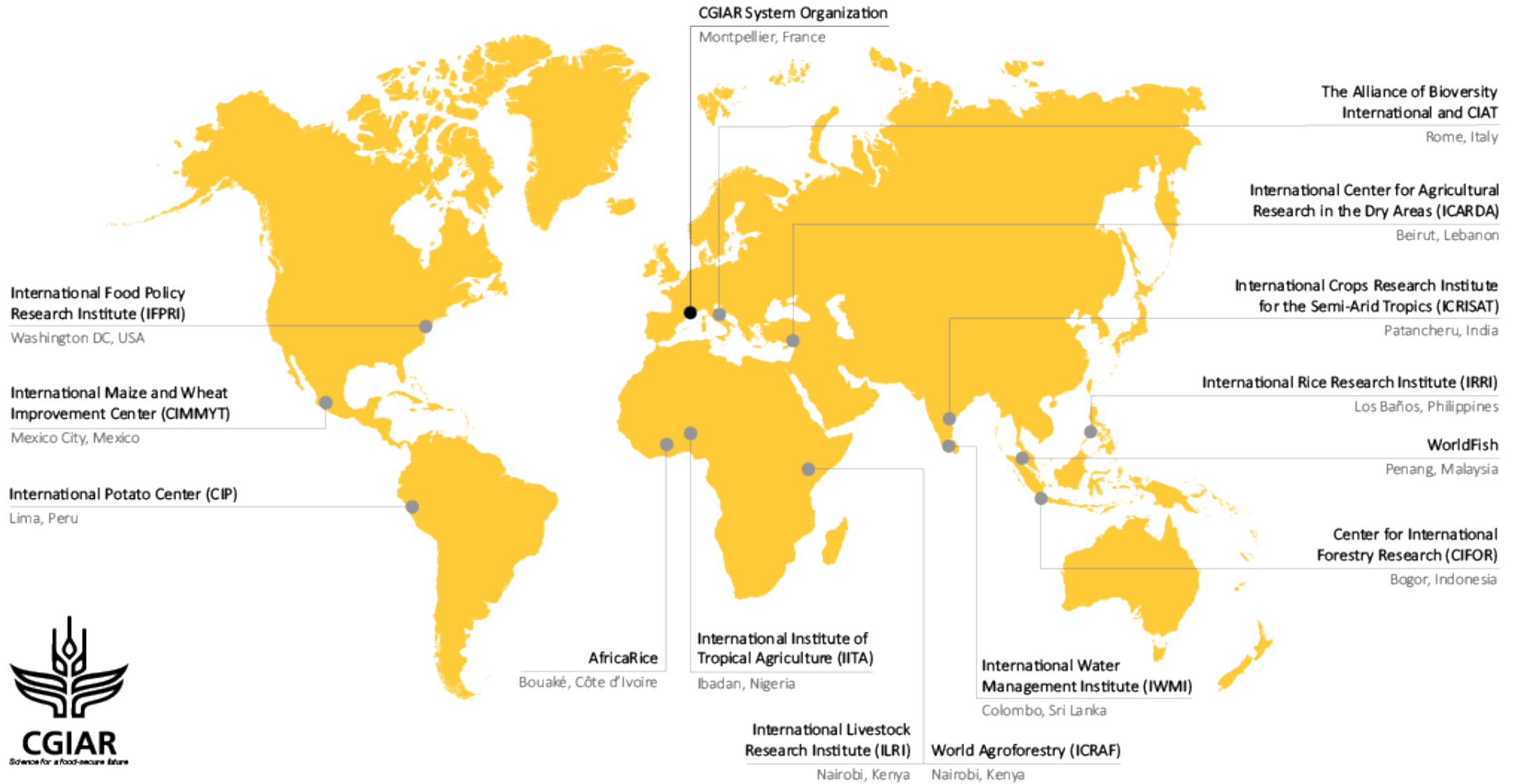


INITIATIVE ON
Genebanks

CGIAR and the MLS

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December 14, 2024
Frascati,

CGIAR



CGIAR Centers' genebanks



Genebanks Collections of seeds and plant material intended to preserve genetic diversity

Total accessions maintained in CGIAR genebanks:
712,206

CROP	ACCESSIONS AVAILABLE WITH SMTA
Wheat	163,819
Rice	148,428
Forages	51,865
Sorghum	44,403
Beans	37,936
Chickpea	35,716
Barley	31,851
Maize	30,077
Pearl millet	25,407
Cowpea	17,069
Fruit and multipurpose trees	15,266
Groundnut	15,240
Lentil	14,342
Pigeon pea	13,492
Small millets	11,694
Faba bean	9,594
Cassava	9,541
Potato	7,414
Misc. legumes	6,751
Sweet potato	6,206
Pea	4,591
Grasspea	4,357
Yam	3,886
Banana	2,083
Andean roots and tubers	1,178



Food and Agriculture
Organization of the
United Nations

1994 FAO-CGIAR In Trust Agreements

- “The Centre shall hold the designated germplasm in trust for the benefit of the international community
- [...] undertakes to [...] make germplasm available [...] without restriction [...] for the purpose of scientific research, plant breeding or genetic resources conservation
- **Can’t seek IP over materials. International standards.**

One page MTA!

- **“The recipient may reproduce the seed and use the material for agricultural research and breeding purposes and may distribute it to other parties provided the recipient is also willing to accept the conditions of this agreement.¹ “**
 - **“¹ This does not prevent the recipient from releasing or reproducing the seed for purposes of making it directly available to farmers or consumers for cultivation, provided that the other conditions set out in the MTA are complied with. “**

Second FAO-CGIAR Joint Interpretive statement, 1998

Large requests

- The Centers will need to exercise some discretion in determining the number of samples to be provided at any given time to any given recipient, and may not, for example, be in a position to distribute materials immediately where this would reduce stocks below accepted levels for conservation purposes;
- In cases of limited supplies, immediate availability of materials cannot always be guaranteed: Centers will need to agree on schedules for delivery;
- In cases where a would-be recipient requests samples of an abnormally large number of accessions all at once, the Centers may need to ask recipients to cover all or part of the costs of multiplying relevant accessions;

CGIAR Centers and the International Treaty on Plant Genetic Resources for Food and Agriculture

Article 15 - Ex Situ Collections of Plant Genetic Resources for Food and Agriculture held by the International Agricultural Research Centres of the Consultative Group on International Agricultural Research and other International Institutions

- a) “Plant genetic resources for food and agriculture listed in Annex I of this Treaty and held by the IARCs shall be made available in accordance with the provisions set out in Part IV of this Treaty. “
- b) PGRFA not in Annex I of this Treaty ... shall be made available in accordance with the provisions of the MTA currently in use ... amended by the Governing Body no later than its second regular session, in consultation with the IARCs, in accordance with the relevant provisions of this Treaty.”

CGIAR Centers' statement upon signing

“Obligations of Centers to make plant genetic resources for food and agriculture available (Article 2 (a) and (b))”

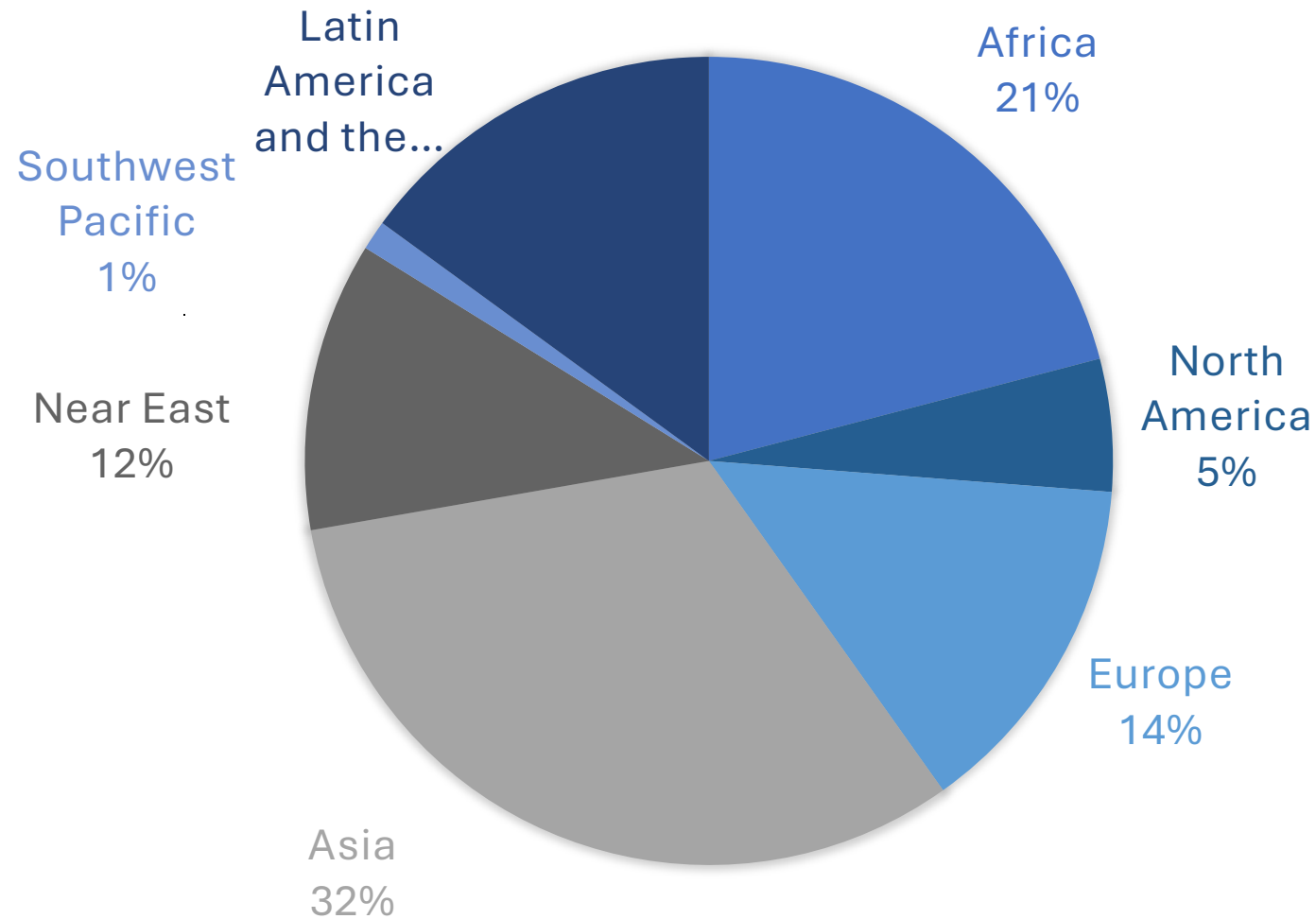
Repeats text from 1994 Joint Interpretative statement about large requests.

“Availability of PGRFA for cultivation

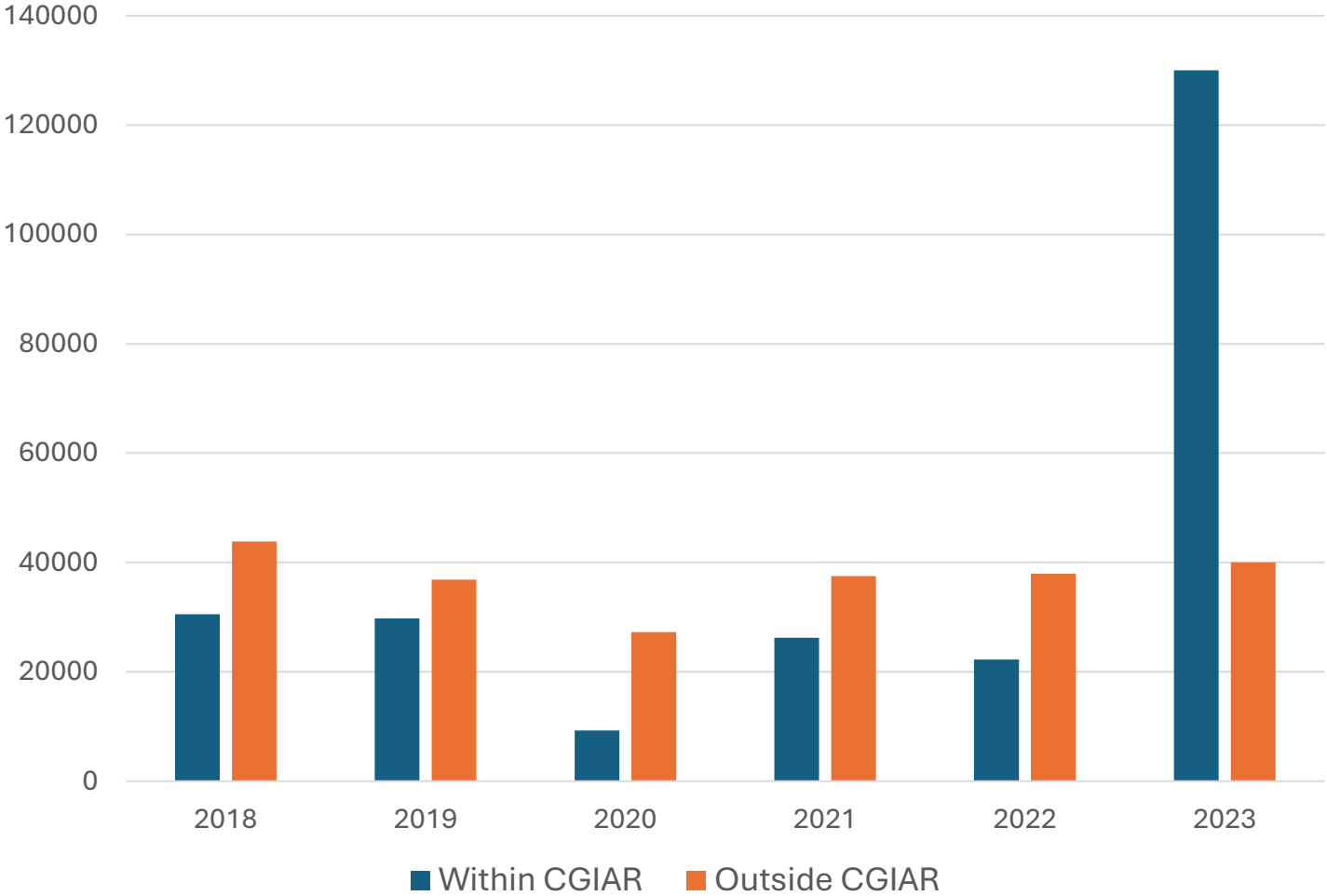
It is also understood that nothing in Article 2 will prevent the Centers from making PGRFA from the Multilateral System directly available to farmers or others for cultivation, as is the current practice, whether this is unimproved or improved PGRFA.”

CGIAR distributions with SMTA 2007-2022-24

Center	SMTAs	Samples
AfricaRice	656	58,990
Bioversity	605	9,247
CIAT	3,209	315,267
CIMMYT	27,227	3,315,792
CIP	904	24,934
ICARDA	12,177	1,085,993
ICRAF	581	3,157
ICRISAT	6,419	382,535
IITA	1,285	55,376
ILRI	1,049	15,740
IRRI	10,036	819,181
Total	64,148	6,086,212



Data about CGIAR Genebanks' internal and external distributions

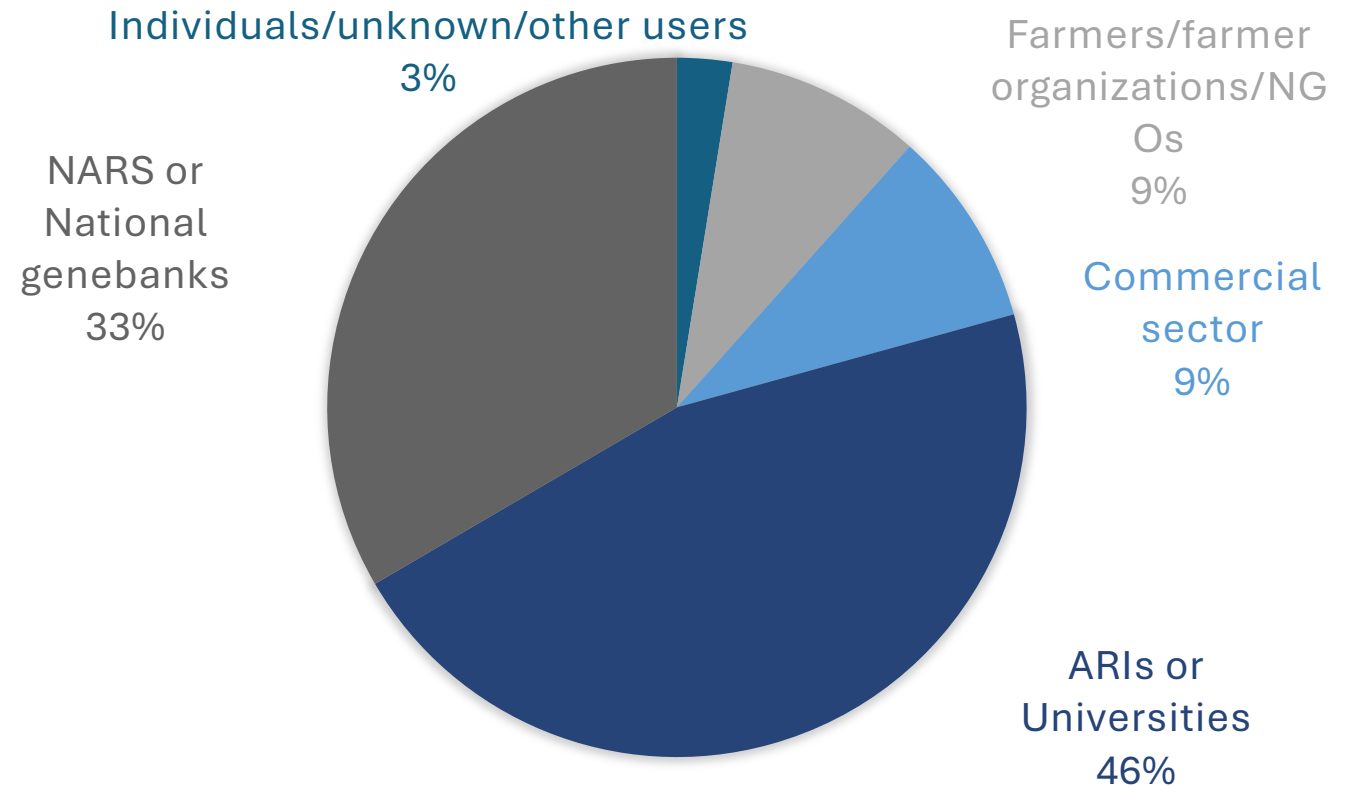


Accessions distributed annually by CGIAR genebanks from 2018 to 2023. Source: CGIAR Genebank Reporting Platform.

Data about CGIAR Genebanks' distributions

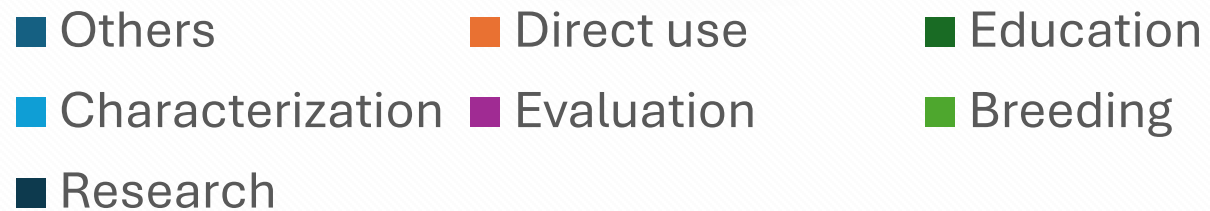
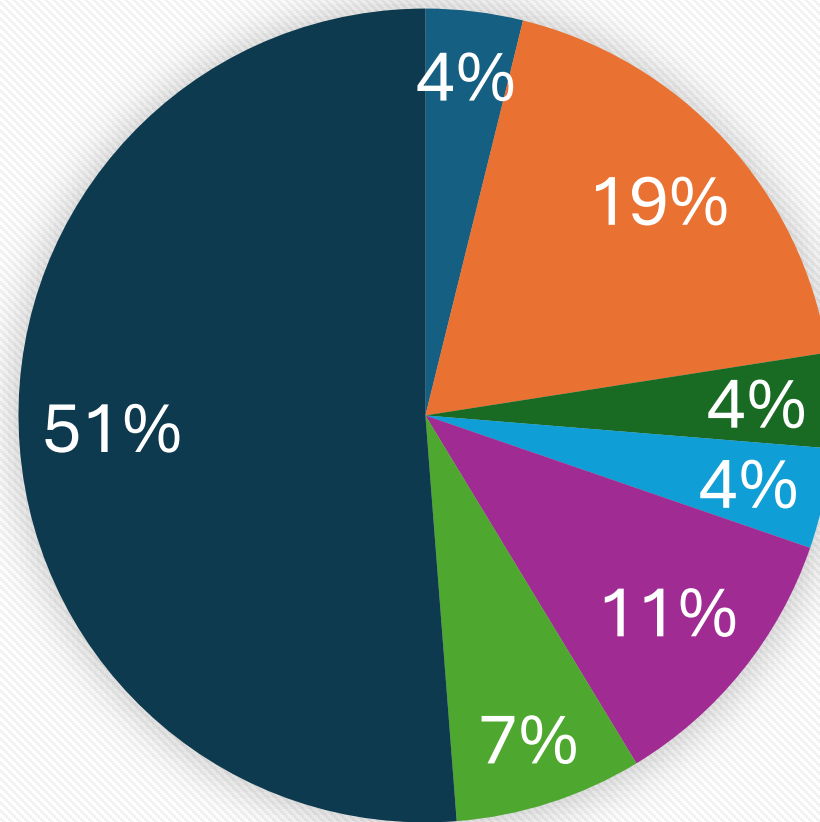
Country	2020	2021	2022	2023	Total
1 India	5,184	26,972	550	29,003	61,709
2 Viet Nam	680	3,709	5,741	3,809	13,939
3 Nigeria	2,558	2,740	2,178	2,919	10,395
4 Morocco	2,793	4,456	808	1,420	9,477
5 Mexico	1,266	2,052	1,942	1,642	6,902
6 Philippines	43	80	406	5,719	6,248
7 Lao, P.D.R.	495	685	3,155	1,723	6,058
8 Brazil	2,056	2,693	61	105	4,915
9 Italy	1,337	2,659	151	687	4,834
10 China	1,335	894	1,350	1,186	4,765
11 United Kingdom	373	2,140	1,278	725	4,516
12 Canada	63	58	4,226	31	4,378
13 Colombia	469	753	418	2,546	4,186
14 Ethiopia	730	1,098	823	1,182	3,833
15 United States	643	735	1,824	508	3,710

15 countries which received the most samples from the CGIAR genebanks, 2020–2023 (not including intra- and inter-CGIAR Center transfers)



Types of recipients of germplasm samples distributed by CGIAR Centers' genebanks 2019-2023 inclusive.

Purposes of requests for germplasm from CGIAR genebanks 2017-2023



Transferring PGRFA under development

Additional terms and conditions:

- share characterization, evaluation, research data;
- acknowledge the sources of materials if/when research findings and data are published;
- obtain approval before passing the material to subsequent recipients;
- either notify, or obtain approval before seeking to register or commercialize new varieties incorporating the PGRFA under Development;
- provide a sample of any released varieties to the genebank;
- acknowledge the provider when derived material is commercialized;
- not commercialize the material in the form received; and
- acknowledge that the PGRFA under Development is the intellectual property of the Provider.

Semi-exclusive licensing for commercialization of products

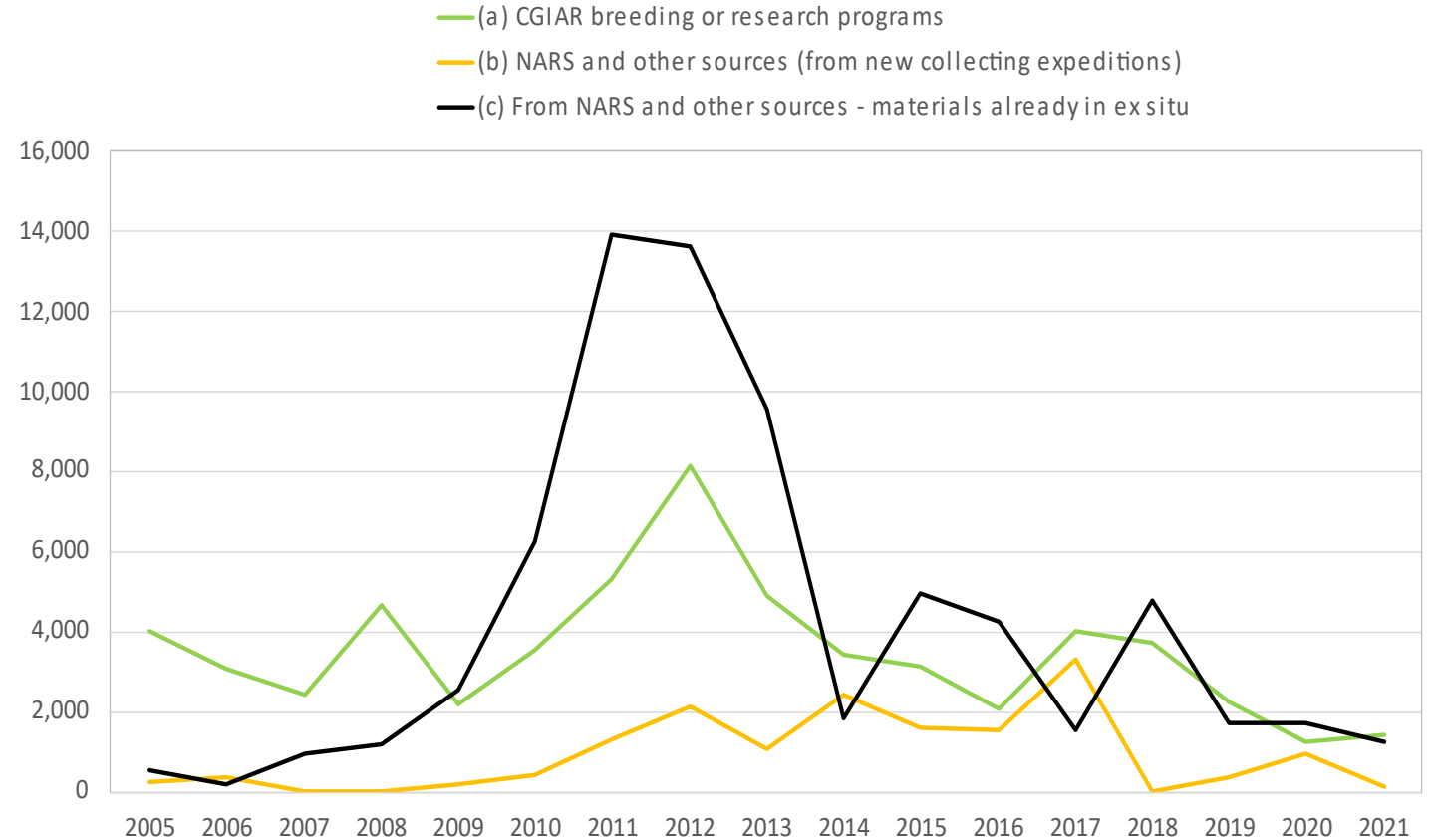
Must comply with CGIAR Guiding Principles for Management of Intellectual Assets

- Default: production of global public goods
- Necessary for further development of the asset, or to increase scale of impact
- Must keep asset available for further research and breeding (usually by the Center itself, using the SMTA – so SMTA Art 6.7 not triggered)
- Must be subject to on-line, public disclosure
- Must be reported/justified to SO and reviewed by independent Science Council Intellectual Property group
 - All results summarized in annual ‘CGIAR Annual reports on Intellectual Annual Management’
 - Approved by Science Council
 - Shared with the Governing Body since GB Resolution 4/2017

CGIAR Genebanks' acquisitions 2012-2021

2012-2021

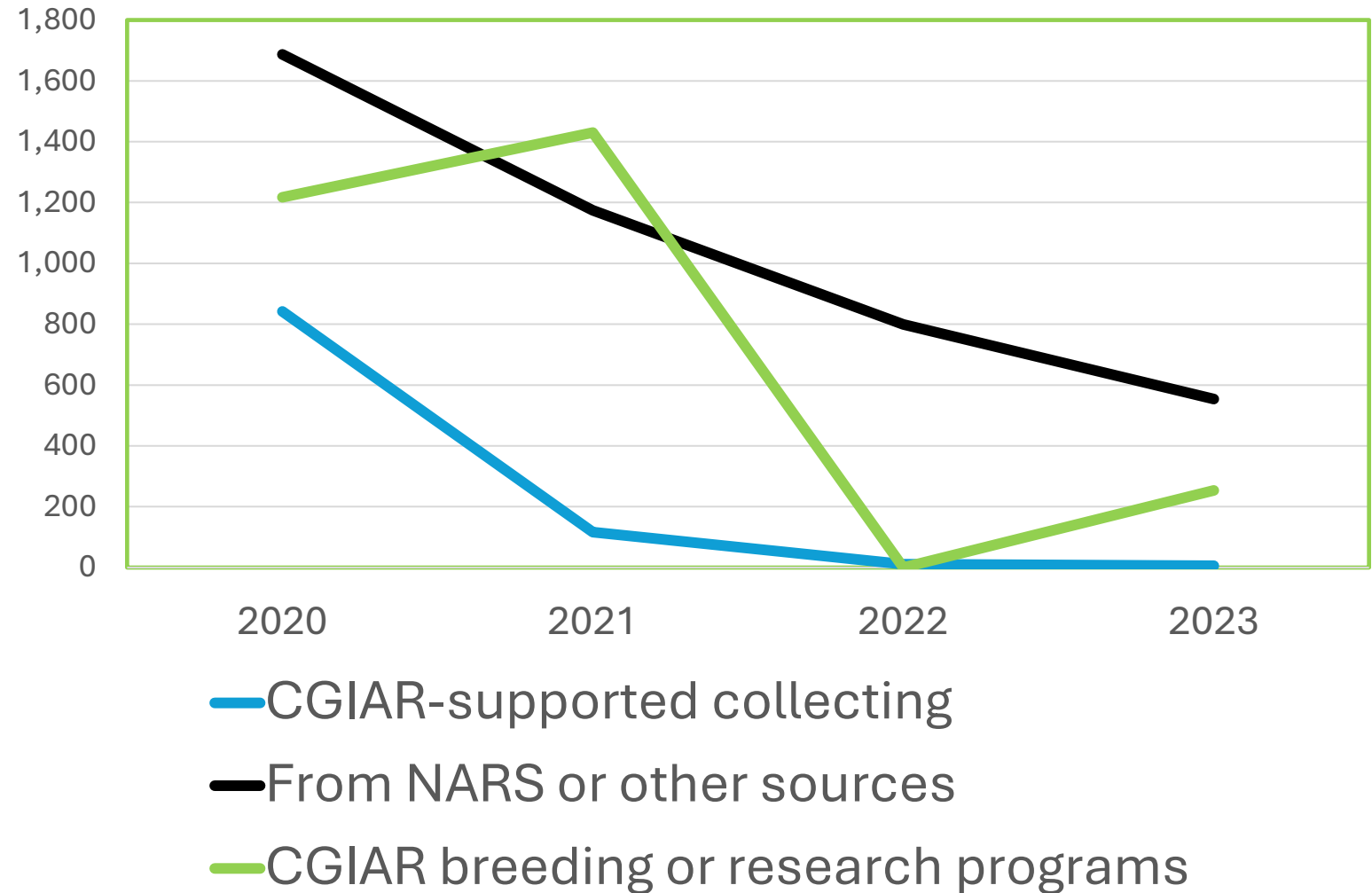
- 80,000 samples of distinct PGRFA
- From 142 countries
- Of 25 different crops
- 20% approx. through collecting expeditions
- All of them obtained with SMTA or under terms and conditions that are SMTA friendly



CGIAR Genebanks' acquisitions 2020-2023

2020-2023

- 8,090 samples of distinct PGRFA
- From 38 countries
- 25 different crops and trees
- 12% approx. through collecting expeditions
- All of them obtained with SMTA or under terms and conditions that are SMTA friendly



Common concerns around the SMTA

- Lack of a threshold level of incorporation of Multilateral System PGRFA both for the triggering of mandatory payments and for the termination of such payments;
- Concern over bureaucratic requirements for tracking any release, coupled with the obligatory payments;
- Concern over the possibility and legal implications of transfers between potential recipients and their parent companies in other countries;
- Duration of benefit sharing in case of restrictions for further research and breeding;
- Concern over the length and complexity of the SMTA;
- Ambiguities in the meaning of the provisions on IPRs and uncertainties over what can be patented; and

Instruments for awareness raising, capacity building and decision making

Updated April 2009



SGRP Guide for the CGIAR Centres' Use of the Standard Material Transfer Agreement

Includes updated FAQs (Appendix 7), August 2010

Prepared by the System-wide Genetic Resources Programme (SGRP) of the Consultative Group on International Agricultural Research (CGIAR)

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Rome, Italy
Tel: (39) 061181
Fax: (39) 06119161
Email: biobvity@cgiar.org
<http://www.bioviversityinternational.org>

Note: this is a 'rolling document' which will be updated on a continuing basis. It is available at http://www.sgrp.cgiar.org/sites/default/files/Guide_SMT

Document to be cited as: SGRP. 2009. Guide for the CGIAR Centres' Standard Material Transfer Agreement. Bioviversity International, Rome, Italy.



CGIAR
Genebank Platform

CGIAR Genetic Resources Policy Helpdesk

Supported by the Genebank Platform Policy Module



www.genebanks.org

Photo: The work of CGIAR's Genetic Resources Unit to regenerate forages seeds near Sanicander de Quichaco, Colombia. Credit: CIAT/Neil Palmer

Alliance

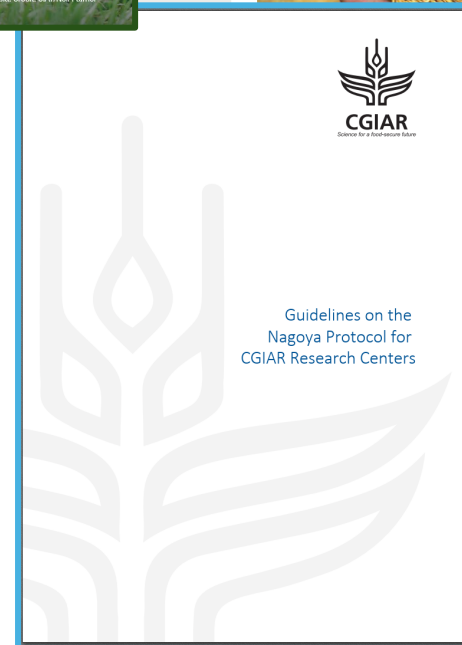


Risk-mitigation for projects that rely on genetic resources from multiple sources: a project planner's decision-making tool

Isabel López Noriega
Michael Halewood

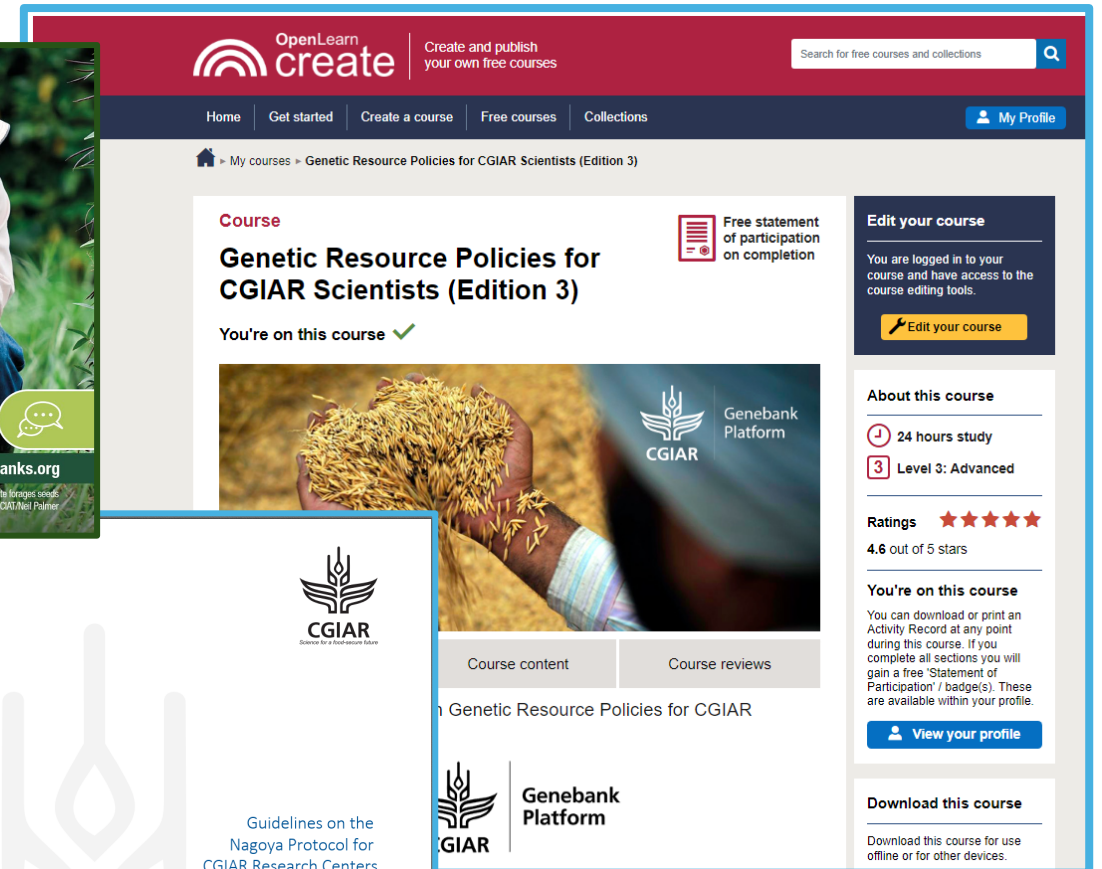


Horizon 2020 of European Union
This project has received funding from the European Union's Horizon 2020 Programme for Research & Innovation under grant agreement n°727312.



CGIAR
Division for Food Security and Nutrition

Guidelines on the Nagoya Protocol for CGIAR Research Centers



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Genetic Resource Policies for CGIAR Scientists (Edition 3)

You're on this course ✓

Free statement of participation on completion

Edit your course
You are logged in to your course and have access to the course editing tools.
Edit your course

About this course

- 24 hours study
- Level 3: Advanced

Ratings ★★★★★
4.6 out of 5 stars

You're on this course
You can download or print an Activity Record at any point during this course. If you complete all sections you will gain a free 'Statement of Participation' / badge(s). These are available within your profile.

View your profile

Download this course
Download this course for use offline or for other devices.

Large-scale genotyping in PGRFA



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Crops	Number of accessions that have been resequenced	Number of accessions that have been genotyped	Percentage of accessions from in trust collections that have been resequenced or genotyped	Percentage of accessions from in trust collection whose genetic information is available on public databases (out of those that have been resequenced or genotyped)
Major cereals (maize, rice -Asian and African, wheat, barley, pearl millet)	13,176	111,565	33%	53%
Roots and tubers (potato, cassava, sweet potato, yams, Andean roots and tubers - Ullucus tuberosus and Oxalis tuberosa) and bananas	400	24,404	79%	12%
Minor cereals (small millets, sorghum)	448	1,629	7%	33%
Pulses (common bean, groundnut, chickpea, lentil, pea, cowpea, pigeonpea, faba bean, grasspea)	5,567	7,778	7 %	17%
Forages: buffelgrass, napiergrass, rhodes grass, Urochloa spp, Megathrysus maximus, Sesbania sesban, Neonotonia wightii, Lablab, Brizantha, Brachiaria)	-	2,378	9%	20%

Examples of DSI databases by CGIAR



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The screenshot shows the Banana Genome Hub website. At the top, there is a navigation bar with links for Home, Genomes, JBrowse, Search, Download, Studies, About, and Partners. Below the navigation bar is a large image of banana plants. The main content area is titled "Available Tools" and features four tool cards: Synteny viewer, GO enrichment, Giga, and Crispor Tefor. Below the tools section is a "Genomes" section with four small images representing different banana varieties.

The screenshot shows the Rice SNP-Seek Database website. The header includes the IRIC logo and navigation links for Home, Search, Browse, My Lists, Order Seeds, Download, and Help. A green banner below the header states: "By using SNP-Seek, you abide by the data use license stated here, and development here". The main content area contains a paragraph describing the database's purpose and data sources. Below the text are five large, colorful icons representing different aspects of the database: a rice stalk, a bar chart, a city skyline, a question mark, and a DNA helix.

The screenshot shows the CicerSeq website. The header features the CicerSeq logo and the tagline "A global reference for chickpea genetic variation based on sequencing of 3,366 genomes". Below the header is a navigation bar with links for Home, Search, Passport data, JBrowse, Download, and Contact us. The main content area includes a section titled "It of the Toronto Statement" with a DOI link. Below this is a paragraph describing the database's content and purpose. At the bottom, there are four icons representing different data types: Genotype calls, Passport, JBrowse, and Data. The footer features the CGIAR and ICRISAT logos.

The screenshot shows the Genotyping data in CGIAR genebanks website. The header includes the title "Genotyping data in CGIAR genebanks" and a sub-header "(Click on the map to access GIGWA instances)". Below the header is a world map with various CGIAR genebanks marked with their logos and names: CIMMYT (Mexico City, Mexico), Alliance Bioversity & CIAT (Leuven, Belgium), ICARDA (Rabat, Morocco; Beirut, Lebanon), ICRISAT (Patancheru, India), AfricaRice (Abidjan, Côte d'Ivoire), IITA (Ibadan, Nigeria), World Agroecology Centre (Nairobi, Kenya), ILRI, and CIP (Lima, Peru).

Conditions under which the data are made available by CGIAR Centers

- Generally, follow academic practices on data sharing:
 - Sequence data are deposited in INSDC databases
 - Access is open and free in institutional repositories and scientific databases
 - Follows Toronto statement 2009 on prepublication data sharing
- Specialized portals maintained by CGIAR Centers usually don't require login, but do require, acknowledgement / attribution
 - Some also include IPR related restrictions with respect to data
- One CGIAR center requires login and click-wrap license agreement for non-exclusive non-transferable use of genetic data subject to conditions such as not claiming IPRs over the data



Thanks!