Cover image: Harvest of upland rice, Cao Phong District, Hoa Binh, Vietnam. Photo: Michael Major for Crop Trust
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Background information

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HIGHLIGHTS

**CGIAR’s 2022 engagement with international regulatory frameworks**

During 2022, international intergovernmental bodies dealing with the conservation and use of genetic resources reactivated their in-person meetings.

The Policy Team of the CGIAR Initiative on Genebanks coordinated CGIAR’s engagement in international meetings organized under the International Treaty on Plant Genetic Resources for Food and Agriculture (“the International Plant Treaty”) and participated in negotiations related to genetic resources and information under the Convention on Biological Diversity (“the CBD”). In addition, the Policy Team coordinated a wide range of activities and resources, which strengthen CGIAR’s engagement with, compliance with, and implementation of these international regulatory frameworks.

CGIAR continued to be transparent in its actions and submitted two reports to the ninth session of the Governing Body of the International Plant Treaty (19–24 September 2022). One report provided an update on the status of implementation of the CGIAR Principles on the Management of Intellectual Assets (CGIAR IA Principles) during the year 2021 and included links to the CGIAR Intellectual Assets Management Reports published since the eighth session of the Governing Body in November 2019, as well as past CGIAR Intellectual Assets Management Reports, which are made publicly available on CGIAR’s website.

**Intellectual property rights and agreements limiting global accessibility as reported by CGIAR Research Centers in 2022**

- Five patent applications with updated status (national submissions) and one granted patent
- Thirty-three Limited Exclusivity Agreements
- Two Restricted Use Agreements
- Justifications: The justifications provided by CGIAR Research Centers for the above were generally deemed acceptable by the CGIAR System Organization and the System Council Intellectual Property (SC IP) Group according to the criteria as outlined in the *CGIAR IA Principles*.

**Intellectual assets management under One CGIAR**

The CGIAR Integration Framework Agreement was developed in 2022 and paves the way for an integrated partnership among the signatory CGIAR Research Centers and the System Organization. The Agreement offers a more interconnected and concerted approach to governance, operations, research and innovation strategy and works across institutional boundaries and action areas for impactful research. Given that intellectual assets as outputs of our research for development and innovation agendas are at the heart of impactful research, cross-CGIAR and multidisciplinary groups have emerged under One CGIAR. These groups work on aspects such as identifying different types of outputs and innovations and their level of development and suitability for further co-development with partners, wider dissemination, technology transfer, and identification of business opportunities. These include supporting scientific ventures and small- to medium-sized agribusinesses that aim to scale products to make food systems healthier, secure, equitable, sustainable and resilient. Legal and intellectual property expert support has been provided to these groups, establishing synergies and developing complementary working agendas to better manage and valorize CGIAR innovations to achieve the impact targets of our Research Initiatives and Impact Area Platforms.
KEY TOPICS

CGIAR IA Principles

This annual report is published pursuant to the CGIAR Principles on the Management of Intellectual Assets (CGIAR IA Principles, effective on 7 March 2012) which govern the management of Intellectual Assets produced or acquired by the CGIAR System Organization or CGIAR Research Centers to maximize their global accessibility and/or ensure that they lead to the broadest possible impact on target beneficiaries in furtherance of CGIAR’s vision. The CGIAR IA Principles establish a comprehensive framework for reporting and oversight, which culminates in an annual report providing insights regarding the implementation of the framework in the preceding year.

CGIAR’S 2022 engagement with international regulatory frameworks

The International Treaty on Plant Genetic Resources for Food and Agriculture (International Plant Treaty) establishes rights and obligations, which have implications for farmers, research organizations, non-governmental organizations, plant breeders, seed companies and governments related to conserving, improving, and sustainably using plant genetic resources for food and agriculture and to equitably share benefits derived from the use of those resources. CGIAR is committed to fully implementing and complying with the International Plant Treaty. Other international fora, particularly the UN Convention on Biological Diversity (the CBD) and FAO’s Commission on Genetic Resources for Food and Agriculture also have implications for access and equitable benefit sharing associated with CGIAR’s work on and with genetic resources.

The Policy Team of the CGIAR Initiative on Genebanks coordinates CGIAR participation in international fora dealing with genetic resource policies. It provides periodic updates and recommendations to CGIAR Center Directors General and the System Board on matters of risk and strategic importance and receives guidance for engagement in international fora from those bodies. The Policy Team consults with a range of CGIAR scientists and research leaders through a variety of mechanisms, including the Article 15 Genebank leaders’ group, CGIAR Intellectual Property Community of Practice and the CGIAR Genetic Resources Policy Working Group, which was established in late 2017.

- **Convention on Biological Diversity (CBD)**

After five years of fraught negotiations, the Conference of the Parties (COP) to the CBD finally adopted the Global Biodiversity Framework (GBF) at its 15th meeting in Montreal, Canada, in December 2022. Throughout the years of negotiations, CGIAR has consistently and proactively engaged by submitting policy briefs, meeting with delegates, hosting side events, participating in informal, off-the-record meetings of key stakeholders, among other activities.

As CGIAR, we pursued two primary points. The first was that the GBF should recognize and promote the International Plant Treaty and its Multilateral System of Access and Benefit Sharing. The second was that new norms of benefit sharing from the commercial use of digital sequence information (DSI) should be multilateral in nature, with minimal or no interruption to the open availability and use of DSI for agricultural research, while, at the same time, generating monetary and non-monetary benefits to be shared with developing countries. In the end, the text of the GBF and the decisions adopted by the CBD COP were largely in line with the approaches promoted by CGIAR.

The following activities of the Policy Team of the CGIAR Initiative on Genebanks contributed to these achievements:

- Participation in the following meetings:
  - Twenty-fourth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 24)
  - Bellagio Center Convening on Digital Sequencing Information & the Governance of Plant and Genetic Resources, Bellagio, 2–6 May 2022

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1 Intellectual Assets means any results or products of research and development activities of any nature whatsoever (including, but not limited to, knowledge, publications and other information products, databases, improved germplasm, technologies, inventions, know-how, processes, software, and distinctive signs), whether they are protected by IP Rights.


3 Additional information concerning the CGIAR Initiative on Genebanks is available at https://www.cgiar.org/initiative/genebanks/
Informal exchange on DSI organized by the Access and Benefit Sharing Initiative and the European Commission, The Hague, 8–9 November 2022

Fifth meeting of the Working Group on the Post-2020 Global Biodiversity Framework, Montreal, 3–5 December 2022

Fifteenth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15), Montreal, 7–19 December 2022.

Engagement with like-minded stakeholder groups, notably the DSI Scientific Network https://www.dsiscientificnetwork.org/

Bilateral consultations with country representatives and regional groups

Submission of paper on DSI to COP15 https://hdl.handle.net/10568/125749

CGIAR side event on DSI at COP15, entitled “DSI is changing the way genetic resources are used in agricultural research and development, Implications for new benefit sharing norms”, 7 December 2022

International Plant Treaty

At its Ninth Session from 19 to 24 September 2022, the Governing Body of the International Plant Treaty decided to relaunch a process that will consider options for monetary benefit sharing under the Multilateral System, ways to lower transaction costs for users, and the expansion of the list of crops and forages included in the Multilateral System. CGIAR contributed to this positive outcome by passing a clear message in favor of the relaunching of the negotiations for the improvement of the functioning of the Multilateral System, at the meetings and consultations that took place in the last three years, after the suspension of these negotiations in 2019.

Up to the Ninth Session of the Governing Body (GB9), CGIAR had submitted the CGIAR Reports concerning the status of the implementation of the CGIAR IA Principles on the Management of Intellectual Assets (“CGIAR IA Principles”) for the years 2019 and 2020 in response to resolutions adopted by the Seventh Session of the Governing Body (Resolution 4/2017), and Eighth Session of the Governing Body (Resolution 2/2019) respectively. In such resolutions, the Governing Body invited CGIAR to provide the CGIAR annual reports, particularly as the implementation of the CGIAR IA Principles related to germplasm that the CGIAR Research Centers manage under the framework of the International Plant Treaty, including in cases where such germplasm, parts thereof, or information generated from the use of this germplasm are the subject matter of patent or plant variety protection applications (PVP) or are included in partnerships that qualify as restricted use or limited exclusivity agreements pursuant to the CGIAR IA Principles.

The submission of the above-mentioned CGIAR annual reports and the assurances provided by the CGIAR delegation in meetings with contracting parties and stakeholder groups, and side events explaining CGIAR operations under the International Plant Treaty Framework during GB9, addressed possible concerns in relation to Centers’ practices on the management of their intellectual assets. Ultimately, the Governing Body adopted a resolution requesting CGIAR to continue reporting on the status of the implementation of the CGIAR IA Principles.

Farmers’ Rights

Article 3 of the CGIAR IA Principles recognizes the indispensable role of farmers, indigenous communities, agricultural professionals, and scientists in conserving and improving genetic resources. Furthermore, CGIAR Centers are required to respect national and international efforts to protect and promote Farmers’ Rights as envisaged by the International Plant Treaty and to support the development of appropriate policies and procedures for their recognition and promotion.

CGIAR Research Centers undertook several initiatives to promote and strengthen Farmers’ Rights in 2022.

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Repatriation of genetic resources to farmers and communities: In 1997, CIP started a program to repatriate landraces to farmers and communities in Peru. The ancestors of these farmers developed, used and conserved these landraces for millennium. But now, due to climate shocks, diseases and other reasons, the landraces are disappearing from farmers’ fields. The repatriation activity has restored the diversity and variability of cultivated potatoes in the Andean biodiversity micro-centers and restored local productivity by replacing seed stocks with pathogen-free accessions contributing to increased food security, productivity and poverty alleviation. The repatriation has also helped mitigate the challenges and impacts of climate change by introducing traditional cultivars that are tolerant or resistant to biotic and abiotic stresses. In 2022, CIP repatriated 554 samples of 375 accessions of potato to farmers in Peru and thus restored the diversity of cultivated potato in the recipient communities and helped ensure farmers’ food and source of income. All requests for repatriation can be done online at https://cipotato.org/genebankcip/process/potato/repatration-2/.

Developing local agroecology living models in Tunisia: A Tunisian-led agroecology living landscape (ALL) has been established in a semi-arid area along the El Kef-Siliana corridor in the northwest of the country to test and assess the most likely pathways that could lead to an agroecological transition of the food system, notably in terms of sustainability and resilience. In 2022, four farmers associations representing diverse systems of mixed cereal, trees and ruminants (sheep and goats) worked with ICARDA, national agricultural research institutes, national training and extension agencies, the Ministry of Agriculture and Water Resources and Fishery, the Livestock and Pasture Office and others, including a seed company, to co-identify agroecological transitions pathways and spread knowledge about models for agroecological practices. Access to seeds and acquisition and dissemination of knowledge about forage seed production by farmers are also part of the agroecological living landscapes. The degree of fairness, connectivity and participation will be measured to see how these features influence the agroecological transitions of the farmers organizations.

Capacity building and training for farmers, particularly women: IRRI and ICRISAT held multiple capacity-building programs and sessions in diverse areas and countries in 2022. Some of them targeted women and youth. Training sessions on seed production, variety identification, implementation of agroecological and climate-resilient practices, multiple cropping systems, implementation of quality seed systems, crop residue management, governance, advertising, and financing for producer organizations, food processing, safety and quality management for food producer organizations were carried out in countries such as Niger, India, Bangladesh, Tanzania and Mali, for crops including rice, groundnut, cowpea, sorghum and pearl millet.
Participatory approaches to crop production systems: AfricaRice, ICARDA, ICRISAT and IRRI applied participatory varietal testing and selection with farmers for crops such as rice, durum wheat and several pulses during 2022. AfricaRice used a participatory approach to co-design, implement and evaluate sustainable intensification and diversification options on farmers’ fields in Cote d’Ivoire, Nigeria, Ghana, Mali and Senegal in the framework of several projects and CGIAR regional integrated initiative of West and Central Africa. The interventions and innovations options included improve water, nutrient and labor efficiencies, land and water use planning, marketing of products, diverse climate services, and climate-smart agriculture practices applicable to rice-production systems. Farmers’ field days were organized at each harvest to discuss the results and expose farmers of non-project sites to the benefits of the interventions. The capacity of lead farmers, national extension agents, and technicians from development organizations was strengthened to provide backstopping to farmers in the adoption of the most preferred interventions.

Tools and technologies for farmers’ benefit: IT-based tools, bioprotectants, harvesting machinery, post-harvest bags are some of the tools and technologies that CGIAR Research Centers reported in 2022 as shared with or supplied to farmers to facilitate their work in the fields and increase their crop returns.

- GeoAgro-MiSR is a smartphone app designed by ICARDA which is available in English and Arabic. It allows Egyptian smallholder farmers to ask questions about several agronomic themes to online experts and get immediate responses in real time. The app uses high resolution remote sensing-based analytics to show the spatial variability of crop stress to farmers without scientific jargon. It will eventually cover different aspects of farming including water, fertilizer, soil, weather and plant varieties. It also provides an option for government administrators to announce and disseminate specific information to farmers via the app (e.g. upcoming drought, upcoming pest infestation, or availability of subsidies and microfinance).

- Aflasafe is a natural product developed by IITA and partners that protects crops in farmers’ fields from aflatoxins, which are highly toxic carcinogenic compounds produced by the fungus *Aspergillus*. Currently used in 11 African countries and with country-specific strains to be developed in other 10 African countries, Aflasafe is becoming a popular and cost-effective food safety-related technology to combat aflatoxin in Africa’s food. In 2022, the IITA Aflasafe Unit donated Aflasafe to farmers in areas of Burkina Faso where the technology is not well known. In addition to providing the product, the Unit designed and delivered training sessions for farmers and trainers of farmers in Nigeria, Togo, Senegal, Burkina Faso, Mali, Ghana, Niger, Kenya and Tanzania. The Unit also provides its partners with technical support with respect to product creation and training materials.

- Recently released seeds of machine-harvestable chickpeas developed by ICRISAT were distributed to about 600 farmers in Andhra Pradesh, India. In addition to distributing the seeds, ICRISAT provided training and an information sheet (in the local language) to the farmers on cultivation practices, land management and recommended fertilizer application, and training on the harvesters to maximize the benefits to the farmers by cultivating machine harvestable chickpeas.

- ICRISAT has partnered with Purdue University to use Purdue Improved Crop Storage (PICS) triple-layered bags for controlling storage insect pests on multiple crops. ICRISAT tested the PICS bags for groundnuts and pigeon peas in India and supplied 50,000 bags to 25,000 farmers in the Odisha state, representing 2,000 tons of safe on-farm hermetic storage capacity.
### Access and benefit sharing

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (Nagoya Protocol) entered into force in October 2014. Unlike the Multilateral System established under the International Plant Treaty, which facilitates access to certain Plant Genetic Resources for Food and Agriculture with a pre-established framework for access and benefit-sharing (as reflected in the SMTA), the Nagoya Protocol reinforces a bilateral system of access and benefit-sharing requiring prior informed consent and mutually agreed terms for benefit-sharing for the access and use of genetic resources and associated traditional knowledge on a case-by-case basis.

In 2022, the Policy Team of the CGIAR Initiative on Genebanks conducted an online course for the third time entitled “Genetic Resource Policies for CGIAR Scientists” from 2 February until the end of March 2022. This course is provided through the UK’s Open University online Learning Platform and comprises seven modules that touch upon different dimensions of access and benefit sharing. Each module included readings, videos, animations, self-test questions, practical exercises working through scenarios. The Policy Team organized a live session with students at the end of each module. Experts from inside and outside the CGIAR participated as resource people in these sessions. Thirty-seven CGIAR staff participated in the third edition of the course, including genebank managers and staff, plant breeders, pathologists, information managers, seed system specialists, and legal and intellectual property specialists. More than 100 CGIAR staff have taken the course since 2021.

In late 2022, the Policy Team and the Open University initiated the work to develop a new training course on genetic resource policies targeting both CGIAR staff and researchers and legal experts in national agricultural research organizations. A unified course is expected to facilitate the exchange of experiences and collaboration between CGIAR and non CGIAR students.

### Patents

The CGIAR IA Principles require that CGIAR Research Centers carefully consider whether to register/apply for (or allow third parties to register/apply for) patents and/or plant variety protection over the Centers’ respective intellectual assets. Under the policy, generally, such applications will not be made unless they are necessary for the further improvement of the intellectual assets or to enhance the scale or scope of impact on target beneficiaries, in furtherance of the CGIAR vision. As part of their justifications, CGIAR Research Centers are required to provide information concerning the foreseen or actual strategy for dissemination, including elements related to global access, impact, and communication to promote transparency. The justifications in support of non-provisional patent applications are expected to be more detailed than those for provisional patent applications, as the latter typically require further effort (e.g. to strengthen proof-of-concept and to evaluate technical developments and prospective commercial markets) to support the additional steps involved in securing a patent.

In 2022, five non-provisional patent filings were reported, one by ICRISAT and four by IRRI, while CIP reported one granted patent. All of them correspond to previously reported filed patent applications.

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6 The course comprises seven modules: 1) Key policies and laws; 2) The International Plant Treaty and the Nagoya Protocol; 3) Accessing genetic resources; 4) Transferring genetic resources; 5) Transferring Center-improved genetic materials; 6) Farmers’ Rights; 7) Evolving issues, (including DSI and negotiations to enhance the International Plant Treaty’s Multilateral System). The course is accessible through the following link: https://www.open.edu/openlearncreate/.

7 Non-provisional patent applications can advance directly to registration if approved (e.g. Patent Cooperation Treaty applications advancing to national filings; national non-provisional applications such as non-provisional utility applications in the USA).

8 Provisional patent applications lock in a priority date and require an additional filing to mature into a patent registration (e.g. Patent Cooperation Treaty (PCT) applications and national level provisional applications, as are available in certain countries).

9 Concerning millet and food products with reduced lipase activity, the invention was filed as a provisional patent application in India in 2021. Based on this provisional application, a Patent Cooperation Treaty (PCT) application has been filed and published in the USA in 2022. The PCT application is planned to advance for national filings in the USA and India.

10 Regarding a Patent Cooperation Treaty (PCT) application concerning genes and a method to enhance grain yield and published in 2020, which is based on a provisional patent application filed in the USA and first reported by IRRI in 2019. The PCT application has matured into national phase in India, the Philippines, and the USA, and has been converted to an European application.

11 A non-provisional patent application on the nutritional composition in Peru was reported by CIP in 2017.
The number of patent applications by CGIAR Research Centers in 2022 was comparable with recent years. Overall, the low number of intellectual property applications sought by Centers in 2022 is consistent with previous years.

CGIAR Research Centers’ patent applications to date cover a range of innovations, including vaccines, planting methods, breeding methods, and agronomic traits. The latter are typically developed in Centers’ breeding programs and in most cases are derived or developed from materials that incorporate germplasm from the Multilateral System (e.g. from Center genebanks or elsewhere under a SMTA). In such cases Centers’ licensing arrangements for patent-protected inventions are consistent with the SMTA requirements that intellectual property rights are not enforced in a manner that could limit facilitated access to the native traits, and concerning benefit-sharing if the commercialized downstream products incorporate materials from the Multilateral System.

Justifications provided in support of CGIAR Research Centers’ patent applications can vary. For example, in developed countries Centers focus on the desire to prevent free-riding (e.g. by organizations that have the capacity to pay market rates for premium technology) and to generate revenue that can be used to fund the further development of the technology and/or be reinvested in the Center’s mission. For developing countries, justifications for patents may include conferring the leverage to implement dissemination strategies designed to ensure that any products or services derived from the protected technology benefit smallholder farmers. Centers also typically apply a differentiated approach to revenue generation whereby particular users (e.g. public sector organizations, smallholder farmers, etc.) are intended to access the technology on a royalty-free basis or at no cost.

In justifying their patent and plant variety protection applications, CGIAR Research Centers typically explain that patent protection or plant variety protection, as applicable, are necessary to create incentives for partners to invest the significant funds that are required to further develop the technologies concerned into commercial products or services and make them available to farmers. It is important to recall in this context that Centers generally undertake the breeding and research to develop bred lines to prepare them for release. Additional investments are necessary for further development and dissemination – sometimes quite substantial investments – at least to prove that candidate cultivars are sufficiently novel, distinct, uniform, and stable to qualify for registration as cultivars, and that they have

<table>
<thead>
<tr>
<th>Center</th>
<th>Title</th>
<th>Type of filing and document number</th>
<th>Country</th>
<th>Public disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIP</td>
<td>Nutritional composition from Pachyrhizus spp. and Ipomoea batatas with high concentration of micronutrients</td>
<td>Granted patent - Certificate No. 11636</td>
<td>Peru</td>
<td><a href="https://on.cgiar.org/3ZUMOQM">https://on.cgiar.org/3ZUMOQM</a></td>
</tr>
<tr>
<td>ICRISAT</td>
<td>Millet and food products with reduced lipase activity, genes and implementation thereof</td>
<td>PCT application - WO 2023/019172 A2 (published)</td>
<td>United States</td>
<td>India</td>
</tr>
<tr>
<td>IRRI</td>
<td>Methods of enhancing grain yield, plants and products generated thereby</td>
<td>USA national phase - US 2022/0167576 A1 (published)</td>
<td>United States</td>
<td>India</td>
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<td></td>
<td>India national phase - IN 2022/27003472 A (published)</td>
<td>India</td>
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<tr>
<td></td>
<td></td>
<td>Philippines National Phase (Filed)</td>
<td>Philippines</td>
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</tbody>
</table>
sufficient value for commercial use to justify their commercial release in the target markets; they may also undertake further genetic development, incorporating CGIAR lines and optimized traits in plant varieties that are ready for use. Substantial investments may also be necessary to ensure that the new varieties effectively reach smallholder farmers as the main target beneficiaries of CGIAR. These investments are related to developing and maintaining foundation seed, multiplying seed, packaging, pricing and delivery conditions adapted to poor farmers living in remote areas. For all these reasons, in the absence of a registered intellectual property right that protects the investments of private actors and provides incentives for embarking in the development and delivery of the new technologies, the Centers concerned would be unable to achieve these outcomes.

The justifications for the patent applications reported in 2022 were deemed acceptable by the CGIAR System Organization and the SC IP Group according to the criteria for maximizing global accessibility and impact as outlined in the CGIAR IA Principles.

Limited exclusivity agreements

Limited exclusivity agreements are addressed in Section 6.2 of the CGIAR IA Principles, which permit CGIAR Research Centers to grant limited exclusivity for commercialization of the intellectual assets they produce, subject to certain research and emergency use exemptions. The exclusivity must be justified as being as limited as possible in duration, territory, and/or field of use, and necessary for the further improvement of the underlying intellectual assets or to enhance the scale or scope of impact on target beneficiaries, in furtherance of the CGIAR Vision. The exemptions ensure that the intellectual assets remain available for use by public sector organizations for non-commercial research purposes, and for use in food emergencies anywhere in the world. Deviations from these exemptions require compelling reasons, which must be approved in advance by the System Organization. As part of their justifications, Centers are required to provide information concerning the foreseen or actual strategy for dissemination, including elements related to global access, impact, and communication.

Patent Example: granted patent concerning a novel nutritional composition reported by CIP

CIP devised a nutritional composition rich in micronutrients such as iron, zinc and b-carotene (provitamin A) to boost nutrient intake in developing countries, particularly among children, and as an aid to stave off malnutrition-derived diseases. The composition has been awarded a patent in Peru by the National Institute for the Defense of Competition and the Protection of Intellectual Property (Certificate No. 11636).

The nutritious flour is made of two crops: orange-fleshed sweet potato (*Ipomea batatas*) and yam bean (*Pachyrhizus* spp.). Both crops are commonly cultivated in several regions of Central and South America. The composition can be consumed directly after reconstitution with water or can be added to juices, custards, cookies and breads.

According to figures from the National Institute of Statistics and Informatics of Peru, chronic malnutrition affected 11.7% of children under five years in Peru in 2022, of which 23.9% live in rural areas. Further, anemia, a prevalent nutritional-related disease, affected 42.4% of children between 6 and 35 months of age, with 51.5% of them living in rural areas. In some departments such as Puno, seven out of 10 children have anemia.

With the granted patented invention, CIP aims to attract potential manufacturers and investors to adopt the technology and will set out to market it as a competitive, yet low-cost, highly nutritious and alternative products that could replace the current commonly purchased and consumed low-nutrient products in Peru. By investing in this technology, third parties can contribute significantly to health improvements for children in Peru and, potentially, in other parts of the world.

Further information is available in the public disclosure online at https://on.cgiar.org/3ZUMOQM.
Limited exclusivity arrangements typically concern improved genetic resources developed in a Centers’ breeding program, usually in the form of improved plant varieties comprising open pollinated varieties, inbred parental lines, and/or hybrids. Unless explicitly specified otherwise, these improved plant varieties incorporate germplasm from the Multilateral System (e.g. from a Center’s genebanks or from elsewhere under a SMTA). Arrangements conferring limited exclusivity to commercialize such varieties are designed by Centers to be consistent with the SMTA requirements, for example, by ensuring that the licensee and any sublicensees are bound by the benefit-sharing obligations under the Multilateral System, or by ensuring that commercial varieties remain accessible for research and breeding by third parties. Additionally, if a (co)development phase precedes commercialization, transfers of plant genetic resources for food and agriculture under development are carried out using the SMTA.

In justifying their limited exclusivity arrangements, CGIAR Research Centers typically explain their rationale on a comparable basis to their patent applications, as mentioned above, that exclusivity is necessary to create incentives for partners to invest the significant funds that are required to further develop the technologies concerned into commercial products or services and make them available to farmers.

In 2022, 33 limited exclusivity agreements were reported by CGIAR Research Centers: 31 by CIMMYT and two by the Alliance of Bioversity International and CIAT. As has been the case since 2017, CIMMYT’s exclusivity arrangements account for the substantial number of limited exclusivity agreements observed, whereas for the remainder, Centers arrangements were as typically observed in the years 2012 through 2021.

The justifications for conferring limited exclusivity, for retaining the rights to use the intellectual assets for non-commercial research purposes by public organizations and for use in case of declared food emergencies for the 33 limited exclusivity agreements reported in 2022 were deemed acceptable by the System Organization and the SC IP Group according to the criteria for maximizing global accessibility and impact as outlined in the CGIAR IA Principles.

<table>
<thead>
<tr>
<th>Center</th>
<th>Subject matter and number of agreements</th>
<th>Geographies with limited exclusivity</th>
<th>Public disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alliance of Bioversity International and CIAT</td>
<td>Commercialization of bean variety BSMN10 – one agreement</td>
<td>Zimbabwe</td>
<td><a href="https://on.cgiar.org/46s7im9">https://on.cgiar.org/46s7im9</a></td>
</tr>
<tr>
<td></td>
<td>Development, testing and eventual commercialization of high-performance rice hybrids – one agreement</td>
<td>India, Bangladesh, Pakistan, Vietnam, Myanmar, Indonesia, Philippines, Nepal, Italy, Spain, Portugal, USA</td>
<td><a href="https://on.cgiar.org/3RVPdsd">https://on.cgiar.org/3RVPdsd</a></td>
</tr>
</tbody>
</table>

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12 The CIMMYT license agreements have been granted as per the product allocation and licensing approach for elite maize hybrids in place since 2016. In most instances, CIMMYT’s standard licenses for maize hybrids are granted for a five-year term renewable for a further five years subject to diligence requirements. Further information concerning the maize materials available for licensing is available here. Likewise, detailed information on the guidelines, principles and procedures followed by CIMMYT for the allocation of products can be found here.

13 One agreement concerns the commercialization of a bean variety developed by the Alliance of Bioversity International and CIAT and is featured below in this report. The second agreement on the rice hybrids concerns the use of the Alliance’s restorer lines by Rice Tec for the generation and testing of rice hybrids in countries where the Alliance does not have the capacity to operate directly. Depending on the testing results, the hybrids will be commercialized in the listed countries. Exclusivity per country will depend on reaching certain performance criteria. More details on this agreement can be found at the cited public disclosure.
Beans have a fundamental role in tackling malnutrition. They represent an affordable source of protein and amino acids, while providing essential nutrients such as proteins, iron and zinc. However, their consumption levels are still low and despite the release of hundreds of bean varieties by public sector entities, including the Alliance of Bioversity International and CIAT ("the Alliance"), inclusive access to quality bean seed remains a major challenge due to inadequate capacity of public seed enterprises to produce and market bean seed. Private seed companies do not normally invest in bean breeding and commercialization, due to its limited profitability compared to other crops such as hybrid maize and vegetables.

The Alliance developed a bean variety called BSMN10, which is climate resilient and contains essential nutrients. The Alliance then granted Seed Co. a five-year license to produce and commercialize BSMN10 and disseminate it to small- and medium-sized holder farmers in Zimbabwe. The agreement aims to serve the double purpose of making accessible good quality bean seed in an affordable manner and quantity to small- and medium-sized holder farmers, and stimulating the investment by private local enterprises, including the involvement of networks of local seed sellers, in the production and commercialization of beans. The commercialized bean variety remains available for further research and breeding. Moreover, if a food emergency were declared in Zimbabwe, Seed Co. would have to make available the seed variety in the quantity reasonably required to respond to the emergency for the period of the emergency. Sharing monetary benefits with the International Benefit Sharing Fund from the commercialization of the bean variety is also contemplated.

Further information can be found in the public disclosure.

Restricted use agreements

Restricted use agreements arise pursuant to Section 6.3 of the CGIAR IA Principles, which permit CGIAR Research Centers to acquire and use third-party intellectual assets on terms that restrict the global accessibility of the resulting products/services for commercialization, research, and development, provided that certain conditions are fulfilled. Centers must confirm that they are, to the best of their knowledge, unable to acquire equivalent intellectual assets from other sources under no or less restrictive conditions, and that the resulting products and services will further the CGIAR Vision in the countries where they are made available. They must also confirm their best efforts to ensure that such third-party intellectual assets are only used in relation to, or incorporated into, such intended products/services. As part of their justifications Centers are required to provide information concerning the foreseen or actual strategy for dissemination, including elements related to global access, impact and communication.

In 2022, two restricted use agreements were reported by CGIAR Research Centers: one by CIMMYT14 and one by ICARDA15. This is consistent with the relatively small numbers of this type of agreement observed between 2012 and 2021.

14 It concerns the use of a proprietary technology by Corteva Agriscience, which generates non-pollen producing parents used to produce the three-way maize hybrids. The technology eliminates the need of removing the tassels by hand prior to the release of pollen (known as detasseling), which is a process which is labor and time intensive and prone to error and carried out for the production of hybrid maize seed. The technology coupled with CIMMYT’s hybrid maize materials has the potential to reduce seed production costs and improve seed quality, utilizing inputs more efficiently to produce higher grain yield. CIMMYT and partners aim to benefit smallholder maize farmers throughout the targeted region by employing this technology for hybrid maize seed production. Further information is available in the public disclosure.

15 It concerns the use of AgriSat’s remote sensing tools to optimize water and nutrient management for cereal crops in Egypt. ICARDA assists in the optimization of AgriSat’s tools and at the same time develops the fertilizer component of its GeoAgro-MiSR app, an app designed to help Egyptian smallholder farmers. See this agreement featured below in this report.
## RESTRICTED USE AGREEMENTS REPORTED FOR 2022

<table>
<thead>
<tr>
<th>Center</th>
<th>Subject matter and number of agreements</th>
<th>Targeted geographies</th>
<th>Public disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIMMYT</td>
<td>Novel seed production technology for maize hybrids – one agreement</td>
<td>Sub-Saharan Africa</td>
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<tr>
<td>ICARDA</td>
<td>Integration of remote sensing and IT tools with agricultural knowledge for productive and cost-efficient farming – one agreement</td>
<td>Egypt</td>
<td><a href="https://www.icarda.org/media/news/smart-integration-new-technology-and-traditional-knowledge-sustainable-agricultural">https://www.icarda.org/media/news/smart-integration-new-technology-and-traditional-knowledge-sustainable-agricultural</a></td>
</tr>
</tbody>
</table>

### Restricted Use Agreement example: integration of tools and knowledge for productive and cost-efficient farming in Egypt

Cereal and root crops are staple foods and feed in Mediterranean countries, including in Egypt and Spain, and occupy almost one third of the farmland in this region. Any improvement adopted in the management of nutrition and water in cereal and root crops can have an immediate multiplier effect.

AgriSat, a company from Spain, with the assistance of ICARDA and other partners, is developing and validating a set of remote-sensing tools to assist Egyptian farmers, extension services and land and water managers to optimize water and nutrient management to move towards a more sustainable social and environmental outcome. Cereals, such as wheat, barley and maize, and potato are the target due to their economic and environmental importance and their high demand for nitrogen fertilization. Once adapted to Egyptian environments, remote-sensing tools will help to determine the water and nutrient demands of the crop in space and time and then allow farmers to adjust the external supply of water and nutrients, especially nitrogen, to crop demands. This will in turn help Egyptian farmers optimize their economic benefit and reduce potential pollution from nitrates.

While assisting AgriSat to fine tune the remote sensing tools on wheat, ICARDA will be able to incorporate fertilization-related information in the free-of-charge smartphone app GeoAgro-MiSR. GeoAgro-MiSR, as described in the Farmers’ Rights section of this report, will ultimately cover a variety of different aspects of farming including water, fertilizer, soil, weather and plant varieties. The collaboration with AgriSat is enabling ICARDA to develop the fertilizer component of the GeoAgro-MiSR app. Developing apps in partnerships within the private sector ensures affordable access for farmers to innovative remote-sensing technology.

ICARDA anticipates that Egyptian farmers directly involved in validating the tools will benefit from advice on the use of irrigation water and fertilizer to the needs of their crops, both economically (higher profits) and environmentally (protection of soil and water resources). The direct involvement of farmers – the intended end users – will also ensure that innovations are demand driven. On a larger scale, these trials and validations, once embedded by ICARDA in the GeoAgro-MiSR app, have the potential to show the spatial variability of crop stress to farmers without scientific jargon.

Further information on this agreement can be found in the public disclosure.
Restricted use agreements typically cover the application or incorporation of a partner’s technology into improved genetic resources developed in a CGIAR Research Centers’ breeding program, usually in the form of improved plant varieties comprising open pollinated varieties, inbred parental lines, and/or hybrids. Unless explicitly specified otherwise, such outputs incorporate germplasm from the Multilateral System (e.g. from a Center’s genebanks or from elsewhere under a SMTA) and are transferred under a research collaboration as plant genetic resources for food and agriculture under development using the SMTA. Commercialization arrangements for such varieties are designed by Centers to be consistent with the SMTA requirements, for example, by ensuring that any licensee or sublicensees commercializing such varieties are bound by the benefit-sharing obligations under the Multilateral System, or by ensuring that such commercial varieties remain accessible for research and breeding by third parties. The extent to which Centers improved varieties incorporating or developed using third-party technologies are available, depends on the restrictions imposed by the technology provider as well as national law or regulation, for example, as may relate to biosafety requirements concerning genetically modified organisms. Centers strive to secure the technologies under the most permissive terms.

Restricted use agreements allow CGIAR Research Centers to acquire and use cutting-edge technologies that would otherwise be inaccessible either because of their proprietary nature or the research and development capacity constraints of the Center concerned. Centers responsible dissemination strategies for resulting products and services are designed to flow down the restrictions imposed by the technology provider, which typically relate to the geographic scope of dissemination and end-user requirements, such as additional approvals and/or stewardship requirements.

The justifications for the restricted use agreements reported in 2022 were deemed acceptable by the CGIAR System Organization and the SC IP Group according to the criteria for maximizing global accessibility and impact as outlined in the CGIAR IA Principles.

Intellectual assets management under One CGIAR

The 2030 CGIAR Research and Innovation Strategy supported by a CGIAR Performance and Results Management Framework sets the strategic direction and implementation approaches for how CGIAR will deliver demand-responsive innovations in three action areas (Systems Transformation, Resilient Agrifood Systems and Genetic Innovation) targeting five major impact areas, which include nutrition, health and food security; climate adaptation and mitigation; gender equality, youth & social inclusion; and environmental health and biodiversity. This research framework led CGIAR Research Centers and the CGIAR System Organization to refine an operational structure that fully respects the international/intergovernmental status of each Center and the System Organization and the important role of the highly valued host countries across the globe. The framework brings the integration necessary to collectively and cohesively accelerate innovations to create sustainable and resilient food, land and water systems and to meet Sustainable Development Goals.

The CGIAR Integration Framework Agreement developed in 2022 and effective on 1 January 2023, confirmed and clarified the pathway for One CGIAR and paves the way for a more interconnected and concerted approach to governance, operations, research and innovation strategy, common rules, practices and systems, increased pool funding and engagement with partners at country, regional and global levels. The integrated partnership set up by the signatory Research Centers and the System Organization recognizes and furthers each Center’s mandate, according to their respective governing instruments and host country agreements, while adopting an integrated approach to work across institutional boundaries and action areas for impactful research.

The varied CGIAR intellectual assets that constitute the outputs of our research for development (R4D) and innovation agendas are at the heart of the goal of impactful and demand-responsive research. By adopting a new modus operandi, resulting intellectual assets have become the subject of a number of endeavors carried out by groups across CGIAR, that seek to assess the types and nature of R4D outputs and their status of development to estimate their readiness for uptake and adoption by varied users, and that work to accelerate the development and the deployment of scalable and innovative intellectual assets together with partners, for wider and more effective impact on our target beneficiaries.
As part of the CGIAR Performance and Results Management Framework, CGIAR adopted an Innovation Portfolio Management approach that refers to the systems, processes and mechanisms to intentionally manage innovation investments and decisions within CGIAR to advance its vision and strategy. The approach includes profiling innovations16 developed at CGIAR, by establishing its characteristics as well as assessing their “innovation readiness” which is the stage of development or maturity of an innovation, ranging from an idea (level 0) to a proven innovation (level 9). Profiled and interrelated innovations with specific level of readiness (e.g. at least level 5 – a model or early prototype stage) are combined forming “innovation packages”, to provide enabling conditions (e.g. partnerships, finance, market and policy environment) that can lead to transformation and impact at scale in a specific context. Innovation packages with high transformation/impact potential are prioritized for resource mobilization, developing context-specific strategies for scaling. Recognizing what is an innovation and promoting realistic thinking about it and scaling trajectories at CGIAR level is critical for the management of the CGIAR innovation portfolio. With that aim, an online course on innovation and scaling was launched in March 2022. The course was open to CGIAR staff and partners and available in three languages. It has received more than 2,000 students. In-person training sessions on scaling readiness have also been organized, with a large workshop at CGIAR level taking place in November 2022, bringing together experts on scaling across the CGIAR to support networking, training and collaboration.17

The CGIAR Performance and Results Management System (PRMS), a comprehensive common IT-based system part of the Innovation Portfolio Management, was implemented in 2022 across One CGIAR to better understand the extent of our results, innovations and their status. The CGIAR Research Initiatives and Impact Area Platforms, the organizational research units set up under the 2030 Research and Innovation Strategy, report into the PRMS on the outputs achieved related to capacity building, innovations and knowledge/information-based products.

The CGIAR Results Dashboard, in turn, provides a publicly accessible overview of the outputs and outcomes reported by the CGIAR Initiatives so far for 2022. For instance, innovations are reported and described according to their type (e.g., new crop varieties), their nature (e.g. incremental, disruptive, radical), geographical scope, the network of partners participating in their design, testing or validation so far, and their status of development, estimating in this way its level of readiness to scale. In 2022, technological innovations accounted for 58% of the innovation portfolio (of which 28% were new or improved varieties or breeds), such as maize, beans, pigeon peas and soybean biofortification and diversification to enhance nutritional value of produce. Twenty-eight disruptive innovations are in the pipeline, such as an Artificial Intelligence-based audio analytics tool for identifying farmers’ needs and targeting digital extension services.

Strategies for delivery and scaling for wider dissemination, production and/or marketing are also one of the workstreams of the Genetic Innovation and the Resilient Agri-Food Systems Action Areas. Engagement with partners for the development of innovations for impact is at the core of the CGIAR Engagement Framework for Partnerships and Advocacy (“Engagement Framework”). Released in March 2022, the Engagement Framework sets out guiding principles and transformative approaches, which create new opportunities for CGIAR and its partners to co-develop research and share and scale knowledge, innovations, and technologies toward greater impact. Embracing the Engagement Framework, the Private Partnerships for Impact (PP4I), the Accelerate for Impact Platform (A4IP) and the CGIAR Food Systems Accelerator have embarked on identifying inventions and innovations across different CGIAR research areas, generated inside and outside CGIAR, to provide the right management and to accelerate and support their development, together with appropriate partners.

PP4I has been set up under the CGIAR Partnerships and Advocacy Group, as the CGIAR center of expertise for private sector-related best practices in governance and practical achievements related to strategic management of CGIAR intellectual assets identified as inventions. Under its remit, PP4I includes technology transfer stewardship by identifying business opportunities and partners aligned with the CGIAR vision and mission; venture-focused services to innovation leaders through synergies built among accelerators and incubators at CGIAR; and the provision of sustainable financial services to financial investors, to improve the sustainability of investments in agri-food portfolios in the Global South.

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16 Innovations are defined as new, improved or adapted (groups of) outputs such as products, technologies, services and organizational/institutional
17 More information on the Innovation Portfolio Management can be accessed here.
A4IP is hosted by the Alliance of Bioversity International and CIAT and is also linked to CGIAR Partnerships and Advocacy Group. It is the venture space to connect scientific products produced by CGIAR and by third parties to the market. A4IP helps to accelerate and incubate scientific ventures such as start-ups that respond to market demand and are compromised with making food systems healthier, equitable and sustainable. In 2022, A4IP together with the World Bank and IMPACT Lab (an accelerator entity) launched a call for applicants with proposed disruptive agri-tech solutions in support of the Moroccan agri-food sector.

Lastly, the CGIAR Food Systems Accelerator, which is part of the CGIAR Research Initiative on Ukama Ustawi: Diversification for resilient agrifood systems in East and Southern Africa, in partnership with 2Scale (an African incubator) provides technical and financial support to small- and medium-size nascent agribusinesses that want to scale climate-smart innovations to tackle food insecurity and increase resilience in the East and Southern African Region.

Legal and intellectual expert support has been provided to the above-mentioned CGIAR bodies and groups, establishing synergies, identifying needed IP services, and developing supportive and complementary working agendas that will allow us to better manage and valorize our innovations to achieve CGIAR’s research for development targets.
A. Overview

The CGIAR System Council Intellectual Property Group (SC IP Group) is pleased to report once again that it had few concerns based on its review of CGIAR Center Reports for 2022. For the relatively few concerns we did have, all were ultimately resolved to the satisfaction of the SC IP Group through follow-up discussions with the relevant Center/Alliance. The only area that could be improved at the initial reporting stage includes timely, robust and specifically tailored public disclosures for restrictive arrangements overall. For another year, however, the Centers continued to demonstrate improved understanding of the CGIAR IA Principles and the fundamental policy behind them, namely the need for transparency in providing justifications for any restrictive arrangements with partners.

B. Noteworthy areas to highlight

1. FAO’s International Treaty on Plant Genetic Resources for Food and Agriculture, Convention on Biological Diversity, and Nagoya Protocol

CGIAR Research Centers continue to build their expertise on national and international Access and Benefit Sharing (ABS) regulations, under the steady guidance of the Policy Team of the CGIAR Initiative on Genebanks. For the third year, the SC IP Group notes that the Policy Team of the CGIAR Initiative on Genebanks continued to provide critical educational resources, by offering their course on genetic resource policies for CGIAR scientists. The online course addresses various components of ABS and is comprised of multimedia and live sessions and was well attended by a diverse set of CGIAR stakeholders.

2. IP applications, limited exclusivity agreements and restricted use agreements (collectively, “Restrictive Arrangements”)

The SC IP Group confirms that it considers all 2022 IP applications and limited exclusivity agreements to be in compliance with the CGIAR IA Principles. In contrast to prior years, the SC IP Group is pleased to report that this year the CGIAR Research Centers provided fulsome reports from the outset regarding their IP applications, limited exclusivity agreements and restricted use agreements. This significantly alleviated the workload for the SC IP Group, which appreciated having to follow-up with fewer series of inquiries and requests than in previous years. In addition, the SC IP Group is pleased that several Centers adopted the best practice (despite not being explicitly required under the CGIAR IA Principles) of reporting on updates regarding material developments associated with the previously reported justifications. As emphasized in previous years, the SC IP Group acknowledges the critical importance of transparency as one of the most critical aspects of implementation of the CGIAR IA Principles. It is important to be able to clearly communicate to parties outside One CGIAR why any restrictive arrangements are pursued and how they contribute to CGIAR’s mission.

3. Public disclosures

The SC IP Group is once again pleased to note that the breadth and quality of information provided in CGIAR Research Centers’ public disclosures have continued to improve, with almost all new public disclosures being satisfactory from the outset. Public disclosures remain the most effective means for Centers to externally communicate the reasons why One CGIAR enters into restrictive arrangements and how they contribute to CGIAR’s mission, thereby increasing transparency as well as critical partnership opportunities.

4. Training and capacity-building

The SC IP Group observes that although there is still no centralized training or capacity-building program for IP Focal Points and that CGIAR’s IP learning community (IP Community of Practice) remains a work in progress, the SO expressed that there has been renewed interest in restarting this network for the One CGIAR-wide benefit. Regarding research staff, CGIAR Research Centers organize intellectual asset management training sessions individually according to their needs, which are not homogenous across CGIAR. Some Centers proposed minimal training to staff and relied on external consultants. As in past years, apart from the commendable system-wide trainings in the area of ABS offered by the Policy Team of the CGIAR Initiative on Genebanks, there continues to be a lack of centralized trainings on intellectual asset management and compliance within the system, leaving individual Centers vulnerable to turnover, loss of intellectual asset knowledge management, as well as Center know-how and capacities in this area.
C. Conclusions and recommendations regarding One CGIAR

The transition of intellectual asset management reporting and oversight from the current standalone SC IP Group towards an integrated One CGIAR approach remains in process. The SC IP Group was greatly encouraged to learn more from the CGIAR Portfolio Performance Unit (PPU) and the Private Partnerships for Impact (PP4I) how the strategic management of intellectual assets (IA) is figuring into the research initiatives for a measurable pathway to impact.

Overall evaluation of strategic impact of IA Principles in One CG context

This integration of IA management into the research initiatives will allow for a coherent One CGIAR review of current management of intellectual assets as a lever for achieving the impact envisioned and evaluate the strategic impact of the approaches outlined in the CGIAR IA Principles. Since their enactment, the CGIAR IA Principles have been reviewed three times but without a systematic evaluation of the impact that different exclusive arrangements have had on the development and implementation of the respective technologies to benefit target beneficiaries in furtherance of the CGIAR vision. SC IP Group is encouraged that, through the Innovation Management Approach put in place by the PPU and the work of the PP4I, among other CGIAR groups, One CGIAR might bring a more nuanced approach to evaluating whether and how specific asset protection strategies, licensing models and partnership structures effectively achieve the Initiatives’ targets for impact. Such coordination of intellectual asset management and review in a manner which is integrated with Initiatives will continue to enable CGIAR to assess the effectiveness of strategies, improve transparency both internally across One CGIAR as well as externally and ensure accountability the stakeholder community.

Engagement with the private sector, which underpins most of the reviewed agreements, is clearly one path to impact of One CGIAR research. Monitoring the private sector activities through the restrictive agreements entered into by CGIAR Research Centers and reviewed by the SC IP Group would provide additional impact data that may be useful to One CGIAR.

Clarification of IA Principles

The CGIAR IA Principles may benefit from clarification about the level of details expected (or required) when reporting confidentially to the SC IP Group the licensing agreements. This includes justification for the choice of a licensee against other potential licenses, the grounds for license termination for lack of efforts, in case the licensee parks the technology or variety.

One CGIAR resource- and capacity-building and continuous training

It will take time before both legal and strategic intellectual asset management are fully entrenched within the new system structures. Meanwhile, CGIAR Research Centers have a broad range of experience, skills and capacity in this area. The SC IP Group has noted in recent years that the previous CLIPNet needed to be reinvigorated. Once again, the SC IP Group recommends that the existing IP Community of Practice be revived, strengthened and intentionally integrated under One CGIAR to ensure system-wide learning and sharing and collective impact.

One CGIAR transparency for restrictive arrangements: User-friendly tools for streamlined reporting

Given the overriding policy priority of transparency for CGIAR Research Centers’ restrictive arrangements, the SC IP Group recommends that the CGIAR System Organization establishes a user-friendly, acronym-free and accessible overview of all Centers’ plant variety protection and patent applications (i.e. patent families) and their respective public disclosures, so that this information is easy for the public to locate and understand.

The SC IP Group once again notes that Center IA reporting probably warrants a refreshed review in light of One CGIAR, to ensure that reporting is streamlined for both Centers and reviewers and that systems and formats are user-friendly. Such a reporting system would ideally provide clear overviews of all CGIAR patent families, plant variety rights and other restrictive arrangements, including the related public disclosures that explain their rationale and objectives. Certain reporting requirements may be redundant and should be explored for opportunities to streamline. For

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example, when considering oversight arrangements which are a best fit under One CGIAR’s integrated operational structure, it is worth investigating whether real-time, robust public reporting of any restrictive arrangements might eliminate the need for separate annual reporting by Centers.

Integration of IPR into One CGIAR results and innovation management processes

Finally, the SC IP Group was impressed and encouraged by the establishment of working groups between the Portfolio Performance Unit and the PP4I, with the participation of the CGIAR Legal Office of the System Organization, which are focusing on conducting an innovations inventory, and integrating Intellectual Property Rights (IPR) into One CGIAR’s Results and Innovation Management Processes. Based on a preliminary review, their presentations still appear rather early-stage and somewhat generic, but the SC IP Group is hopeful that within the next year their work and value will become integrated into the research initiatives. Based on updates from these groups, the SC IP Group is cautiously optimistic that One CGIAR is moving meaningfully in the direction of building the IA management directly into its overall asset management portfolio and impact assessment work. This may have significant implications for the best way to mainstream the IA management oversight into the overall operations of One CGIAR research initiatives.
ANNEXES


This section provides updates on the five recommendations of the SC IP Group from the 2021 CGIAR Intellectual Assets Management Report.

Recommendation 1: Operating as One CGIAR, striking an appropriate balance between the CGIAR IA Principles’ core dual policies of legal compliance and strategic IA management, and committing to strengthening both

Response: This recommendation was well received and echoes recommendations arising from internal audits and external reviews of the CGIAR IA Principles, as highlighted in previous years’ reports. Strategic management of intellectual assets has emerged among interinstitutional and multidisciplinary groups across One CGIAR as described in this report, working on partnerships, technology transfer, research scaling and impact, engagement with international regulatory frameworks pertaining to genetic resources. It is expected that as the One CGIAR integrated operational structure is further implemented, synergies and common work agendas among these groups and the legal and intellectual property practitioners of the Centers and the System Organization will be further strengthened to ensure an appropriate balance between strategic IA management and legal compliance.

Recommendation 2: Overall evaluation of strategic impact of intellectual assets principles

Response: An evaluation of the impact of the management of intellectual assets as a lever for achieving the objectives as outlined in the CGIAR IA Principles requires a concerted and integrated effort of all Centers and the System Organization, with the likely participation of program performance and management, legal offices, and monitoring and evaluation groups. Acknowledging the importance of this task, some steps have been taken to start gathering pertinent information towards that end. Modifications introduced in the report form for this year cycle aimed at triggering Centers to share information on outputs and developments obtained from restricted arrangements reported in past years. Also, the synergies and more coordinated work among CGIAR groups dealing with the management of intellectual assets as outputs/innovations, as mentioned in the response to Recommendation 1, is expected to give us elements to devise approaches and models to evaluate if and how the restrictive arrangements are a lever to help us achieve the targets for impact.

Recommendation 3: Need for continuous training and capacity building

Response: During the first half of 2022, the CGIAR System Organization organized webinars for IP Focal Points to facilitate the exchange of expertise and best practice on issues related to intellectual assets management. Casting a wider net beyond Legal or IP focal points, the Policy Team of the CGIAR Initiative on Genebanks conducted the online course “Genetic Resource Policies for CGIAR Scientists” for the third time, from 2 February until the end of March 2022. As featured earlier in this report, this online course touches upon different dimensions of CGIAR’s obligations with the international regulatory frameworks dealing with access, use and benefit sharing of genetic resources. Thirty-seven CGIAR staff participated in the third offering of the course, including genebank managers and staff, plant breeders, pathologists, information managers, seed system specialists and legal and intellectual property specialists. It is envisioned that further editions and variations of the course, allow the integration of CGIAR and non-CGIAR attendees (e.g. partners). Further, the System Organization decided in late 2022 to initiate CGIAR-wide webinars in 2023 on IP topics of interest, taking advantage of the broad range of expertise, skills and capacity existent within and out of the CGIAR Centers.
**Recommendation 4:** System-wide establishment of protocols for ABS compliance and Farmers’ Rights

**Response:** A protocol system-wide has not been developed. Yet, the online course “Genetic Resource Policies for CGIAR scientists”, which was mentioned earlier in this report, deals with access and benefit sharing compliance and has a full module on Farmers’ Rights and how CGIAR Research Centers can contribute to their recognition and protection. Regarding benefit sharing, a draft CGIAR policy was considered by One CGIAR Director Generals in 2022 and is under further revision. In parallel, some Centers have adopted policies to contribute voluntarily to the International Benefit Sharing Fund of the International Plant Treaty when obtaining royalties. Regarding Farmers’ Rights, when reviewing each restrictive arrangement, the CGIAR System Organization and the Policy Team have paid particular attention to (i) ensuring that restrictive arrangements do not limit in any way access by farmers or any other user to in trust material from which the intellectual assets may derive; and (ii) encouraging Centers to not enforce intellectual property rights such as patents and plant variety protection certificates against smallholder farmers. Public disclosures related to applications for such intellectual property rights have stated that the Centers will not enforce these intellectual property rights against smallholder farmers.

**Recommendation 5:** Considerations for future reporting: user-friendly tools and streamlined approaches

**Response:** During the second half of 2022, adjustments in the report of intellectual assets were reviewed to take into account the CGIAR Research Initiatives and Impact Area Platforms. Yet, the System Organization decided that any reform of future reporting should consider the cycles and likely the tools to be used by such Initiatives and Platforms to avoid duplication. It is envisioned that during 2023 and likely early 2024, the CGIAR groups engaged and dealing with performance and results management, impact assessment, and management of intellectual assets discuss tools and approaches that allow streamlining information related to the intellectual assets and intellectual property rights generated by Centers, including the possibility of simplified reporting on such assets.
Annex 2: Mandate and composition of the System Council Intellectual Property Group

The role of the System Council Intellectual Property (SC IP) Group is to facilitate coordination between the System Council and the CGIAR System Organization by working in cooperation with the System Organization regarding implementation of the CGIAR Principles on the Management of Intellectual Assets and advising the System Council to enable it to provide adequate oversight of intellectual asset management in CGIAR.

The SC IP Group receives all CGIAR Research Centers’ intellectual asset reports, which include information and justifications about the Centers’ limited exclusivity agreements, restricted use agreements, and patent and plant variety protection applications.

To safeguard the sensitive or confidential nature of the material contained in these reports, or of additional information requested by the SC IP Group, this information is received on an in-confidence basis by the SC IP Group. The SC IP Group then filters this internal information to produce high-level observations and strategic recommendations to both the System Organization and the System Council.

For the review of Centers’ 2022 intellectual assets reports, the SC IP Group was comprised of the following two members, who serve in their personal capacity and not as representatives of their affiliated organizations:

- Aline Flower, Bill & Melinda Gates Foundation
- Eric Huttner, Australian Centre for International Agricultural Research

SC IP Group members are appointed by the System Council for a two-year term based on demonstrated expertise and practical experience in the management of intellectual assets and IP rights. They may serve for more than one term.
Annex 3: Article 15 Centers

All 11 CGIAR Research Centers that host germplasm collections in CGIAR genebanks (termed Article 15 Centers) have agreements with the Food and Agriculture Organization of the United Nations, placing these collections within the purview of the Multilateral System of Access and Benefit-sharing established under the International Plant Treaty. Pursuant to these agreements, Article 15 Centers hold and manage these collections in trust for the benefit of humanity.

The Article 15 Centers\(^\text{19}\) are:

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<thead>
<tr>
<th>CENTER (SHORT NAME)</th>
<th>CENTER (FULL NAME)</th>
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<tbody>
<tr>
<td>AfricaRice</td>
<td>Africa Rice Center</td>
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<tr>
<td>Bioversity</td>
<td>Bioversity International</td>
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<tr>
<td>CIAT</td>
<td>International Center for Tropical Agriculture</td>
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<tr>
<td>CIMMYT</td>
<td>International Maize and Wheat Improvement Center</td>
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<tr>
<td>CIP</td>
<td>International Potato Center</td>
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<tr>
<td>ICARDA</td>
<td>International Center for Agricultural Research in Dry Areas</td>
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<tr>
<td>ICRAF</td>
<td>International Centre for Research in Agroforestry</td>
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<td>ICRISAT</td>
<td>International Crops Research Institute for the Semi-Arid Tropics</td>
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<td>IITA</td>
<td>International Institute of Tropical Agriculture</td>
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<td>ILRI</td>
<td>International Livestock Research Institute</td>
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<tr>
<td>IRRI</td>
<td>International Rice Research Institute</td>
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\(^{19}\) CIAT and Bioversity International have formed an alliance operating as the Alliance of Bioversity International and CIAT. For 2022 reporting purposes an integrated Alliance report was submitted under the CGIAR IA Principles.
### Annex 4: Glossary

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<thead>
<tr>
<th><strong>Alliance</strong></th>
<th>Alliance of Bioversity International and CIAT</th>
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<tbody>
<tr>
<td><strong>Article 15 Centers</strong></td>
<td>As per the centers indicated in Annex 3</td>
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<tr>
<td><strong>AfricaRice</strong></td>
<td>Africa Rice Center</td>
</tr>
<tr>
<td><strong>CGIAR Research Centers</strong></td>
<td>Independent research organizations that are recognized as CGIAR Research Centers as defined in the CGIAR System Framework (presently comprising AfricaRice, the Alliance of Bioversity International and CIAT, CIFOR, ICARDA, ICRISAT, IFPRI, IITA, ILRI, CIMMYT, CIP, IRRI, IWMI, ICRAF and WorldFish)</td>
</tr>
<tr>
<td><strong>CGIAR System</strong></td>
<td>When taken together as a collective whole, the CGIAR System refers to the CGIAR Research Centers, the Funders, the System Council, the CGIAR System Organization, advisory bodies and CGIAR Research, as defined in the CGIAR System Framework</td>
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<tr>
<td><strong>CIMMYT</strong></td>
<td>International Maize and Wheat Improvement Center</td>
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<tr>
<td><strong>CIP</strong></td>
<td>International Potato Center</td>
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<tr>
<td><strong>Multilateral System</strong></td>
<td>Multilateral System of Access and Benefit-sharing established under the International Plant Treaty</td>
</tr>
<tr>
<td><strong>Nagoya Protocol</strong></td>
<td>Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity</td>
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<tr>
<td><strong>PGRFA</strong></td>
<td>Plant Genetic Resources for Food and Agriculture, which are defined in Article 2 of the SMTA as “any genetic material of plant origin of actual or potential value for food and agriculture”</td>
</tr>
<tr>
<td><strong>SC IP Group</strong></td>
<td>System Council Intellectual Property Group</td>
</tr>
<tr>
<td><strong>SMTA</strong></td>
<td>Standard Material Transfer Agreement of the International Treaty on Plant Genetic Resources for Food and Agriculture</td>
</tr>
</tbody>
</table>
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