JARQ 55 (SI), 391-394 (2021) https://www.jircas.go.jp

Preface to the Special Issue

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Abstract

The CGIAR, formerly the Consultative Group on International Agricultural Research, was established in 1971 to support investments in research and technology development geared toward increasing food production in the food-deficit countries of the world. Japan has cooperated with the CGIAR since becoming a member in 1972 and has made significant contributions in terms of both financial and human resources. In 2021, the CGIAR celebrates its 50th anniversary. This Special Issue brings together the contributions of Japan and Japanese researchers to sustainable food system transformation. It includes a review article on CGIAR's international agricultural research and the role of Japan. There are 14 review papers from individual CGIAR Research Centers specialized in their respective fields, ranging from crops, livestock, forestry, fisheries, and natural resource management to policies, and an article from the Japan International Research Center for Agricultural Sciences (JIRCAS) that has long-term collaboration with the CGIAR. This introductory paper will briefly provide the background and rationale for this Special Issue and a short introduction of the papers presented herein.

Discipline: not applicable
Additional key words: CGIAR, CGIAR Research Centers, international agricultural research, Japan, JIRCAS

The CGIAR, formerly the Consultative Group on International Agricultural Research, was established in 1971 to coordinate international agricultural research efforts aimed at reducing poverty and achieving food security in developing countries. This global partnership unites international organizations engaged in agricultural research (referred to as CGIAR Research Centers), and is financially supported by its members, such as countries that include Japan, international organizations, and foundations (Saito 2006).

Among the fifteen CGIAR Research Centers listed in Table 1, ten joined the CGIAR in the first 10 years, whereas others joined from the 1990s (Ozgediz 2012). From the 1990s to 2018, the fifteen centers carried out research in close collaboration with hundreds of partners. Over 50 years, the CGIAR has broadened its research. Although the initial focus on increasing food production through research on crop improvement remains the main one, the domain has been expanded to include a farming systems approach, agri-food systems, and studies on gender and youth to take into account the human and physical conditions within which production takes place. In addition, the scope of research has been expanded to include natural resource management and institutional constraints on agricultural development. The current CGIAR research is dedicated to reducing rural poverty, increasing food security, improving human health and nutrition, and ensuring sustainable management of natural resources (CGIAR Consortium Office 2016). In 2018, to build on their complementary mandates and long collaboration, Biodiversity International and International Center for Tropical Agriculture (CIAT) created an alliance and World Agroforestry (ICRAF) and Center for International Forestry Research (CIFOR) merged in 2019. Furthermore, the CGIAR decided on fundamental reform in 2020, aiming at greater integration and a stronger response to those global challenges facing today's world; this reform is ongoing in 2021.

Japan has cooperated with the CGIAR since becoming a member in 1972 and has made significant contributions

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Received 15 July 2021; accepted 16 July 2021.

Table 1. Name and headquarters of CGIAR Research Centers, their year of establishment and year when they joined the CGIAR; numbers of Japanese board members and staff.

Center name	Headquarters	Year established [a]	Year joined [a]	Number of Japanese board members [b]	Number of total Japanese staff (current) [b]
International Rice Research Institute (IRRI) [c]	Philippines	1960	1971	14	49 (0)
International Maize and Wheat Improvement Center (CIMMYT)	Mexico	1966	1971	7	13 (1)
International Center for Tropical Agriculture (CIAT) [d]	Colombia	1967	1971	5	34 (3)
International Institute of Tropical Agriculture (IITA)	Nigeria	1967	1971	7	25 (3)
International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	India	1972	1972	6	30 (0)
International Potato Center (CIP)	Peru	1971	1973	4	7 (1)
Bioversity International [d, e]	Italy	1974	1974	6	4 (1)
Africa Rice Center (AfricaRice) [f]	Côte d'Ivoire	1971	1975	6	18 (2)
International Center for Agriculture Research in the Dry Areas (ICARDA)	Syria	1975	1975	3	9 (1)
International Food Policy Research Institute (IFPRI)	United states of America	1975	1979	5	17 (2)
World Agroforestry (ICRAF) [g, h]	Kenya	1978	1991	0	4 (0)
International Water Management Institute (IWMI) [i]	Sri Lanka	1985	1991	4	17 (1)
WorldFish [j]	Malaysia	1975	1992	4	1 (0)
Center for International Forestry Research (CIFOR) [h]	Indonesia	1993	1993	4	11 (3)
International Livestock Research Institute (ILRI) [k]	Kenya	1994	1994	2	24 (1)
CGIAR System Management Office [l]	France	1971	-	-	3 (0)
Total number of individuals				70 [m]	248 [m] (19)

[a] Data source: Kanamori & Iiyama, in this Special Issue.
[b] Data source: from survey carried out across 15 CGIAR Research Centers and CGIAR System Management Office in 2020. Number of staff includes the staff directly recruited by CGIAR Research Centers, the experts and researchers dispatched by Japan International Cooperation Agency (JICA), Japan International Research Center for Agricultural Sciences (JIRCAS), and other organizations in Japan including universities. This list does not include students and short-term interns.
[c] Japanese staff in IRRI's Japan Office were not included.
[d] CIAT and Bioversity International were aligned in 2018.
[e] Formerly the International Board on Plant Genetic Resources (IBPGR) and then the International Plant Genetic Resources Institute (IPGRI).
[f] Formerly the West Africa Rice Development Association (WARDA).
[g] Formerly the International Centre for Research on Agroforestry (ICRAF).
[h] CIFOR and World Agroforestry Center were merged in 2019.
[i] Formerly the International Irrigation Management Institute (IIMI).
[j] Formerly the International Center for Living Aquatic Resources Management (ICLARM).
[k] Created in 1994 through the merger of the International Laboratory for Research on Animal Diseases (ILRAD, established in 1973) and the International Livestock Center for Africa (ILCA, established in 1974).
[l] Formerly the CGIAR Secretariat and the CGIAR Consortium Office. Advisory bodies of the CGIAR are not considered.
[m] total < sum of 15 CGIAR centers and CGIAR System Management Office because some individuals worked for different CGIAR Research Centers.

to the CGIAR in terms of financial and human resources. The cumulative amount of its contribution to date is $730M, ranking 7th in the world (see Kanamori & Iiyama. in this special issue). Apart from this financial support, a total of 70 Board members and 248 staff had contributed to a great number of the research outputs by the end of 2020 (Table 1). The periodical changes of the number of Japanese staff joining the CGIAR over 60 years are shown in Table 2. Japanese staff who joined increased until a period of 2001 to 2010, whereas number of Japanese staffs joined in a period of 2011 to 2020 was slightly declined to that in a period of 1981 to 1990. Interestingly, the percentage of female Japanese staff, with those directly recruited by CGIAR Research Centers and the CGIAR System Management Office, had increased until now. The percentage of long-term visiting or seconded staff from organizations in Japan such as JIRCAS, Japan International Agricultural Agency (JICA), and universities has gone down. The CGIAR Research Centers and Japan also have contributed to the capacity development of young researchers, including those from our country. For example, through the Japan–CGIAR Fellowship Program (2004–2013), a total of 106 young Japanese scientists and students were dispatched to 15 CGIAR Research Centers (see Muranaka et al. in this Special Issue), and received on-the-job training from researchers there.

Nevertheless, information on the scientific contribution of Japan and Japanese researchers to the CGIAR research outputs has been fragmented and limited. To our knowledge, Saito (2006) reviewed our contributions and described Japan's framework for supporting the CGIAR. However, the document provided only a limited number of scientific contributions by Japanese researchers. Many other documents provided information on contributions of Japan and Japanese researchers in specific disciplines (e.g., Yamauchi & Kokubun 2011) or at the level of an individual center (e.g., Africa Rice Center 2018).

As the 50th Anniversary of the CGIAR is celebrated in 2021, this Special Issue brings together the contributions of the country and our researchers across diverse disciplines towards sustainable food system transformation and contains the following 17 articles.

- Preface (this article) that briefly introduces the CGIAR and the aim of this Special Issue.
- A review article on the CGIAR's international agricultural research and the contribution of Japan. Details of CGIAR's agenda and their changes will be provided, and it also points out important roles of CGIAR to achieve the sustainable transformation of the global food systems.
- Fourteen review articles from individual CGIAR Research Centers in their respective fields, from crops, livestock, forestry, fisheries, and natural resource management to policies. These papers summarize research activities led by researchers in CGIAR Research Centers and provide an update on state-of-the-art research and future perspectives in the specific disciplines.
- A review article on joint research efforts between CGIAR Research Centers and JIRCAS. This paper provides examples for other successful partnership models between CGIAR Research Centers and JIRCAS.

Table 2. Year when Japanese staff joined (board members were not included), numbers of Japanese staff in CGIAR Research Centers and CGIAR System Management Office, percentage of Japanese staff directly recruited by CGIAR Research Centers and CGIAR System Management Office, and percentage of female Japanese staff in CGIAR Research Centers and CGIAR System Management Office

	Number of Japanese staff in CGIAR Research Centers and CGIAR System Management Office	Percentage of Japanese staff directly recruited by CGIAR Research Centers and CGIAR System Management Office	Percentage of female Japanese staff in CGIAR Research Centers and CGIAR System Management Office
<1971	8	0	0
1971 to 1980	25	32	0
1981 to 1990	60	18	2
1991 to 2000	62	31	6
2001 to 2010	77	36	19
2011 to 2020	49	45	27
Unknown	3	33	33
Total	284 [a]	31	16

[a] Total number is higher than in Table 1 because some individuals worked for different CGIAR Research Centers and worked for same centers more than once.

We see the recent decline in the number of Japanese staff joining CGIAR, and currently there are only 19 working for them (Tables 1 and 2). We expect that the dynamics of CGIAR's international agricultural research and the contributions of our researchers illustrated in this Special Issue will help in enhancing understanding of the values and wide coverage of this significant contribution, especially among young researchers in Japan and other countries who lead further research activities towards sustainable food system transformation. Ultimately, it is our hope that numbers of Japanese students and young researchers who intend to work for the CGIAR will be increased. It is also expected that this Special Issue will lead to further strengthening relationships and collaboration between CGIAR Research Centers and Japanese agricultural research institutions, or in creating new partnerships between them.

Acknowledgement

We gratefully acknowledge Koichi Futakuchi, Yasuyuki Morimoto, Satoshi Ogawa, Daisuke Naito, Masahiro Kishii, Nozomi Kawarazuka, Masafumi Tamura, Satoshi Tobita, Hiroyuki Takeshima, Haruki Ishikawa, Kohei Makita, Keiichi Hayashi, Toru Nakada, and Yumiko Kura for their support for compiling a list of Japanese board members and staff.

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