SEARCHING FOR A NEW DIRECTION OF RESEARCH COLLABORATION IN JIRCAS

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ABSTRACT

This presentation aims to review 40 years of experience in international collaborative research by JIRCAS and its predecessor, the Tropical Agriculture Research Center (TARC), and to discuss the future direction of JIRCAS activities in the context of the recent changes in international agricultural research for development.

Forty years of experience

In 1970, when TARC was established to support Japanese governmental aid, research subjects were selected based on the availability and expertise of individual researchers. They were separately dispatched to research institutes in South and Southeast Asia as well as in Latin America. Although 60% of the research subjects was related to rice production, there was no explicit relationship among those research subjects. In 1975, however, the need for building a structural relationship among research subjects was already recognized; a trial of integrated production system research, in which farm management research was also included, was started in the Muda area in Malaysia and in the Cerrado area in Brazil. Reflecting the diversifying world agricultural market and post cold-war political situation, the needs for grasping the research priorities for agricultural development had been well recognized.

Changes in research for development

As global scale issues such as climate change and sustainable resource management came to be highlighted in the 1990s, the needs for inter-disciplinary and broader scale researches became appealing. The establishment of JIRCAS, which covers all agricultural ecosystems including fisheries and larger geographical targets, was correlated with this global trend. JIRCAS initiated the so-called ‘comprehensive research projects’ in Vietnam, Brazil, China etc. Various research components were incorporated in a project to solve specific problems. Participatory approach was also attempted. In addition, the role of basic researches such as molecular biotechnology was acknowledged and in-house research facilities had been gradually strengthened to produce intellectual global public goods.

As a result of governmental reforms in 2001, JIRCAS was re-structured as an Incorporated Administrative Agency. This legislation mandated JIRCAS to make its own priority-setting and to be subject to external evaluation. Thus, research activities were re-organized towards a result-oriented system. In 2006, JIRCAS’ whole research was structured as ‘research projects’ for which project leaders were responsible for planning and implementation. As a consequence, new types of collaboration which involved several counterparts in different countries, i.e. ‘networked research’ were initiated.

New direction of research collaboration

From April 2011, JIRCAS will enter into its third mid-term plan period. It is now planning to organize new research projects under an umbrella of ‘programs’ which correspond to the global development issues such as sustainable resource management, food security and rural livelihood. Thus, each research project can explicitly explain its role in achieving the overall goals to which JIRCAS aims to contribute. Global agricultural situation is ever-changing and new research agenda are endlessly emerging. The role of public research has to be redefined while considering the development of markets and private sectors in the developing regions. Accountability must be attained for the sake

of effectiveness of public investments. New direction for a new decade must be established based on the successful 40 years worth of experience of face-to-face and long-range partnerships with developing countries.

KEYWORDS

Research for development, international agricultural research, public research, research network

Searching for a New Direction of Research Collaboration in JIRCAS

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1. Forty years of experience
Evolution of IAR in TARC and JIRCAS

History

1970 Establishment of the Tropical Agriculture Research Center (TARC) by the Ministry of Agriculture and Forestry

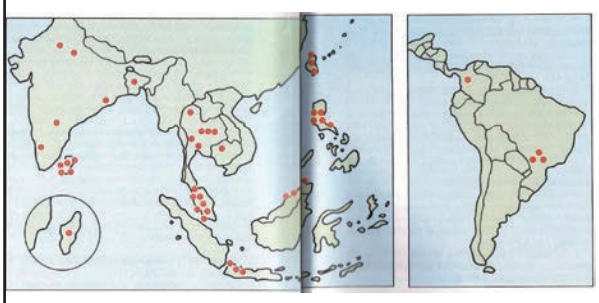
1977 Transfer of TARC Office from Tokyo to Tsukuba City

1993 Reorganized as the Japan International Research Center for Agricultural Sciences (JIRCAS) in the Ministry of Agriculture Forestry and Fisheries (MAFF)

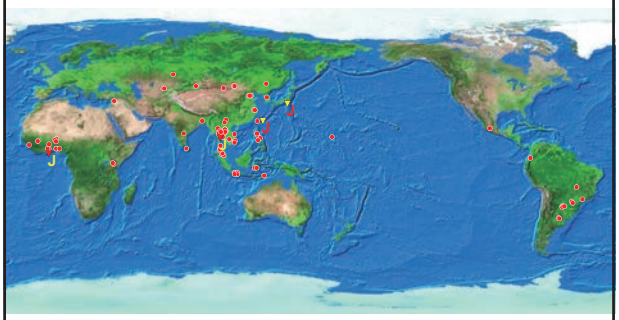
2001 Restructured as an Incorporated Administrative Agency (IAA) under MAFF

2008 Succession of the overseas activities from Japan Green Resources Agency (J-Green)

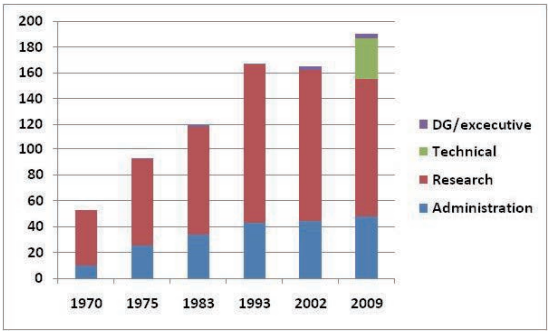
Assignment of TARC researchers 1970-80



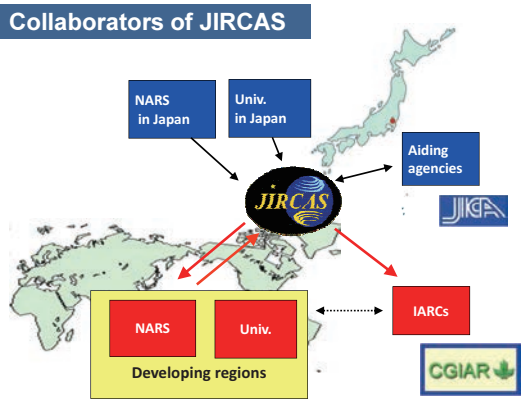
Counterparts of JIRCAS - 2010



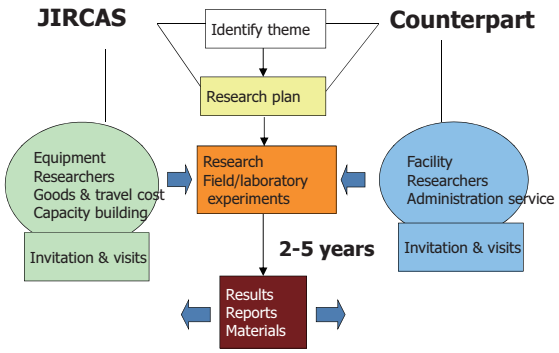
Number of Permanent Staff of TARC and JIRCAS



Collaborators of JIRCAS



The Way of Collaboration



Evolution of IAR in TARC

1970 Dispatches of individual researchers
(Asia, Latin America, 60% is on rice production)

1975 Research on production technology system
(Muda irrigation area in Malaysia)

1983 Domestic supporting research

1985 Collection and analyses of research information

1987 Start of basic research

1992 Long-term fellowship program in Okinawa

Evolution of IAR in JIRCAS

1993 Comprehensive research projects
(interdisciplinary, participatory, G-G base)
Wider research target (developing region, fishries)
Enhancement of basic research (bio-technology …)

2001 The first mid-term plan (PDCA cycle)

2003 Recognition of intellectual global public goods

2004 Establishment of J-FARD

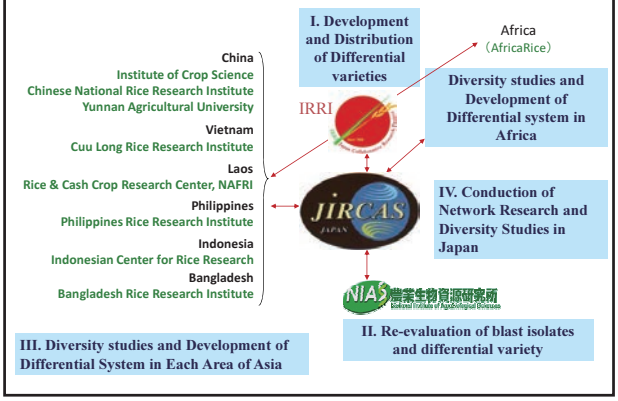
2006 Research management through 'project cycle'
Networking collaboration

2008 On-site trials, development-oriented activities

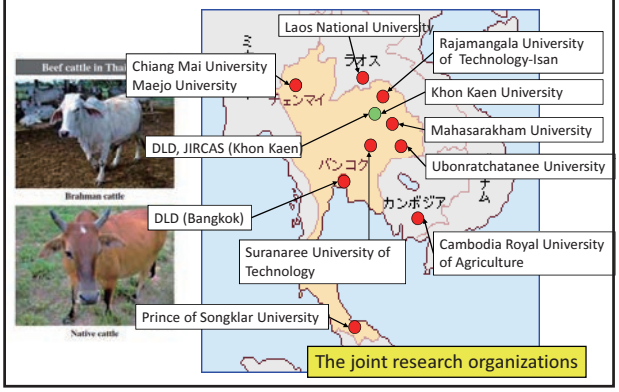
Comprehensive projects (1993-2005)
What's new

- Mekong delta – multi-component farming system, participatory approach
- Soybean in South America – Multi-country (Brazil, Paraguay and Argentina)
- Brackish water – collaboration between fisheries and forestry research
- Food resource in China – G-G base collaboration, production-distribution-process

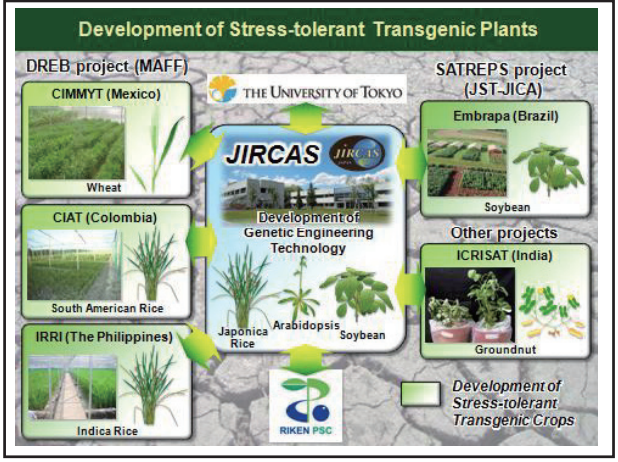
Blast Research Network for Stable Rice Production



Establishment of a Feeding Standard for Beef Cattle and a Feed Database for the Indochinese Peninsula



Development of Stress-tolerant Transgenic Plants



Capacity building of young researchers

Capacity Building of Young Japanese Scientists

Fellowship Program, Invitation of Counterpart Researchers

Contribution to the Coalition for African Rice Development (CARD)

Doubling African rice production in 10 years

JIRCAS satellite seminar
Arusha,Tanzania
on May 17, 2010

2. Changes in research for development

How do we get along with the global trend?

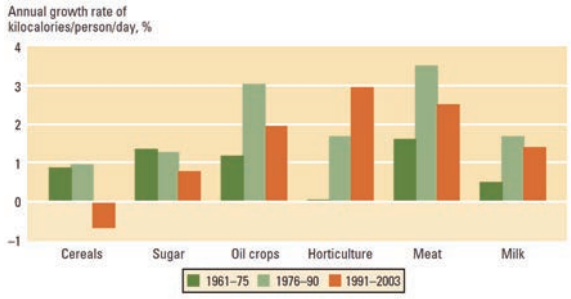
The past trend

1970s
Productivity-oriented (G-revolution)
Environmental research
Sustainable NRM
Pro-poor technology
Pro-market technology
Global issues (climate change, biodiversity, water …)
2010s

Recent changes

- Diversified agriculture, fragile market
- Regional gaps in research are widening.
- Roles of private sector is increasing, particularly for processing.
- Public spending in agriculture is stagnant.
- Declining cost of international collaboration
- GCARD & CGIAR Reform – common agenda
- Roles of agriculture in global issues

Per capita food consumption in developing countries



Source: World Bank, World Development Report 2008

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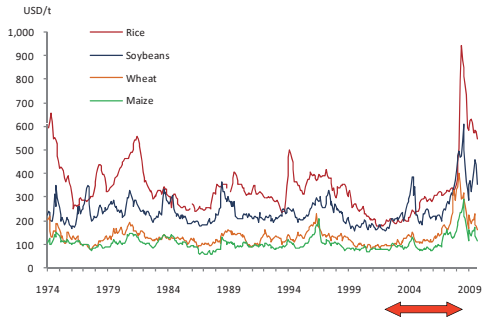
Long-term changes in international food price in US$

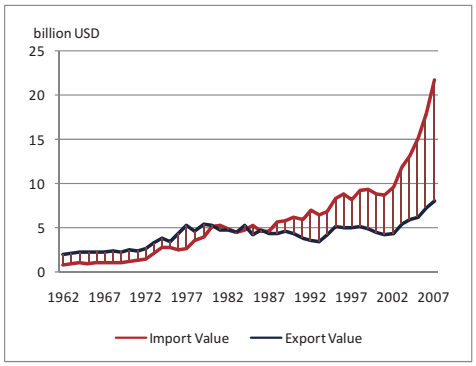


Public agricultural R&D expenditure Regional gaps enlarge

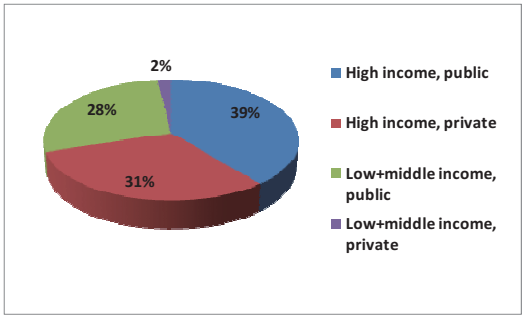
	Public R&D 1981	Public R&D 2000	% Ag. GDP 1981	% Ag. GDP 2000
Developing	6,904	12,819	0.52	0.53
Sub-Saharan Africa	1,196	1,461	0.84	0.72
Asia and Pacific	3,047	7,523	0.36	0.41
West Asia and N. Africa	764	1,382	0.61	0.66
L. America and Caribbean	1,897	2,454	0.88	1.15
Developed	8,293	12,819	1.41	2.36
Japan	1,832	3,828	1.45	3.62

Source: WDR 2008
Unit: million Int'l $, %

LDCs are paying for imported food

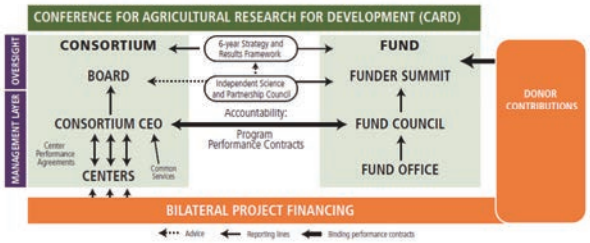


Food and Agricultural R&D (2000), $36.2 billion



Source: Pardey and Pingali (2010)

Structure of new CGIAR



Establishment of Global Research Alliance on Ag. GHG
"Agriculture is a solution to climate change"

3. New direction of research collaboration

How should we optimize our research?

Tracks to go by JIRCAS - No. 1

- Re-consolidation of global research priorities and national interest
  - – Accountability, clear explanation on priority setting
  - – Differentiated regional priority
  - – Provision of global public goods
  - – Contribution to Japanese food security

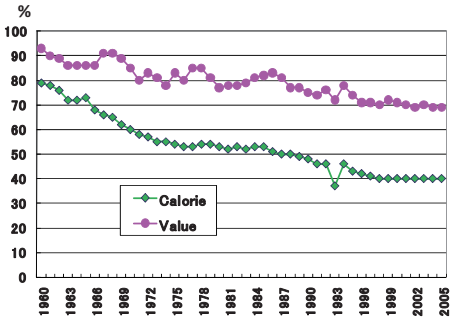
➡ Structure projects, with this intent

Tracks to go by JIRCAS - No. 2

- Active participation in newly emerging domestic and international networks
  - – Contributions to CGIAR mega programs
  - – Issue-based research coalition/network
  - – Collaboration with development agencies and private sector

➡ Design projects, with this intent

Food Self-Sufficiency Rates in Japan



Japanese unique agricultural policy

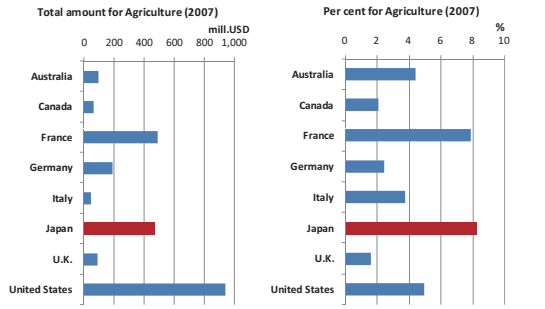
The basic Law on Food, Agriculture and Rural Areas (1999)

Article 20 defines the effort of government to secure world stable food supply.

Basic idea behind

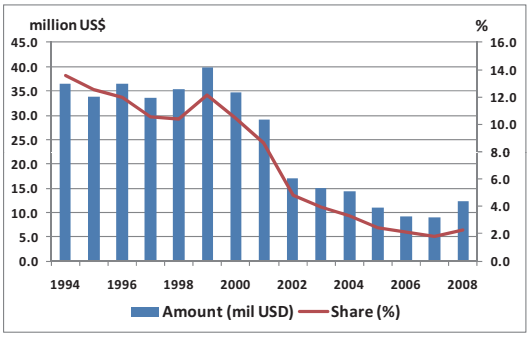
"National food security cannot be achieved without regional and global food security."

Bilateral Official Development Assistance for agriculture



Source: OECD,DAC

Japan's Contribution to the CGIAR Research Agenda



Program – project structure

Clear-cut linkage to the global agenda

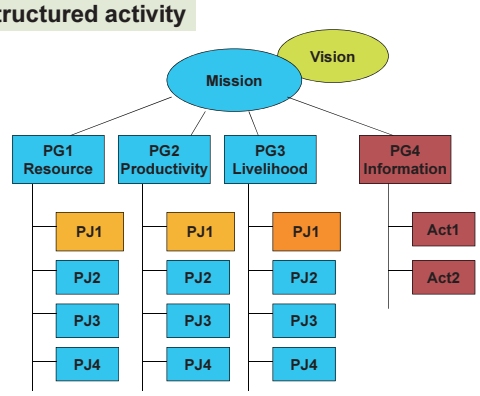
Program A – Environment, natural resource management (world wide)

Program B – Productivity increase of staple food (disadvantaged region, Africa)

Program C – Improve farm income and post-harvest (Asia)

Program D – Information

Structured activity



New Networks

Effective and integrated implementation of IAR and the presence of Japan

Mega programs – Grisp ….

Global issues – Climate change ….

Development – CARD ….

Private sector – East Asia food community ….

Domestic – J-FARD ….

4. Summary

1. **JIRCAS & TARC** has evolved its IAR, based on face to face, equal footing and long lasting collaboration.
2. **IAR for development** is changing. And there are plenty of opportunity for JIRCAS to actively contribute.
3. **JIRCAS**, a national center of the largest net food importer, can play a key role in providing global public goods in agriculture.

Thank you for your attention.

QUESTION and ANSWER

Masaru Iwanaga: Thank you very much, Dr. Koyama for providing us with a very comprehensive analysis of the history of TARC and JIRCAS; more importantly, your analysis of the future direction of JIRCAS. We can spend a few minutes for direct questioning to Dr. Koyama. Ah, yes!

John Caldwell: The issue of accountability to taxpayers. It's a very key issue. I was in a U.S. university for many years before I came to JIRCAS ten years ago and we had the same issue. How do you explain, or how do you justify international collaboration to the taxpayers? Now, you presented a very long range connection to food security in Japan based on food security all over the world. How do you explain that more concretely to the taxpayers? What kind of program could you design to present that in a way that the average taxpayer could understand?

Osamu Koyama: I don't have a direct answer to you, but maybe this basic idea is very close to the answer. National food security, Japanese food security, cannot be achieved without regional or global food security. So to contribute to the world food security is already in our interest, Japanese interest, because 60% of foods come from other areas. At this moment, mainly from developed countries , the global food security, in a globalized society, every event regarding food security is correlated. If something happened in the U.S. corn market, African people suffer. So Japan must contribute to global food security. That is basic interest and I think taxpayers can understand; that's the reason why JIRCAS is helping improvement of technology in developing countries. If I have time afterwards, I will talk about it more.

Koji Tanaka: My name is Koji Tanaka from Kyoto University. From listening to your presentation and reading your abstract, I became a little bit confused regarding the concept of your public research. And then, what is your intention or what is your definition of the public? So according to your presentation, it sounds almost like government institutions' research in contrast to private research, private sector's research. But I think that the sphere or the fields of the public is wider than the government activities. And then, could you please define again, what is public? Probably my question is closely related to Dr. Caldwell's questions.

Osamu Koyama: I think your question is related to the question raised by Dr. Miyata to CGIAR. The similar thing – what is public. In this chart, public is simply the government: national governments and local governments. But public means, nowadays--- there are many stakeholders which are in-between such as the NGOs, NPOs, communities, and many players are working in cultural research, too. I think....I don't have a clear definition myself as far as public, but as far as JIRCAS is concerned, the definition of global public goods is related to economic theory like externalities and so on. Therefore public research must provide public goods. That is a basic thing, but the public must be defined much larger than that. The provision of public goods, local or global, is one thing, but to help to a certain extent, the private companies and the private farmers is also public research. I would like to prefer the broader definition of public. Thank you.

Masaru Iwanaga: It's a somewhat difficult discussion. Now, I'd like to open the floor for questions to any of our three speakers this afternoon. Today's discussion or questions were somewhat focused on a definition of international public goods. And perhaps, the best way to answer is giving some specific examples. What constitutes, or what is a good example of international or global public goods? By giving that, we can easily grab the idea rather than the economist's definition of a public goods of a non-competitiveness and non-consumption and so on. For example, JIRCAS' famous research of DREB, which is patented by JIRCAS, but made available through international centers towards a mission of supporting resources for people. And that is utilized by everybody who is

interested in the same purpose of JIRCAS. That is a good example of your meaning of international public goods. And those are somewhat applied to two previous speakers who focused on the importance of producing international public goods. Probably, by defining that, we can see easily what is the role of CGIAR and what is the role of JIRCAS.

Osamu Koyama: In a narrow sense, intellectual public goods are open fortune like papers, knowledge, which is very open too. So, DREB gene which was developed by JIRCAS, is not a pure public good because we take money, compensation from developed countries, for example. So, the definition of pure public is very difficult but since farmers are very small or small scale in developing countries, to help those things is the kind of work of public sector. But, I think it's very difficult to define.

Masaru Iwanaga: Perhaps towards tomorrow afternoon when we have our other panel discussion, we can re-visit that point because you ended your talk, Dr. Koyama, as a summary that the role of JIRCAS is providing global public goods in agriculture. Without clear definition and understanding from us, we cannot see your next ten-year future. It is the same thing that I often ask to CGIAR. Okay?

Ganesan Balachander: Let me take a crack at this now. Maybe a few examples that can perhaps illustrate from the specifics would be gentle. Many bugs, I mean there are pests and diseases that strike without borders, right? Now, if can you find the solution to biological control through the involvement of international scientists, through the allocation of resources from various donors. But to find a solution, this is not going to be captured in a private company and patented. This will be available for the international system. It can be applied towards many of these countries to address the problems there. So I see this as an international public good. Another example might be crop productivity enhancements using the gene banks that you have. And this again is made available to the international community through the NARS system when it becomes available. Whether it is water usage, whether it is new technology in conservation tillage, whether it is, etcetera. I'm sure you know many more examples. Some people might say SRI is not a proven technology – the System of Rice Intensification, but I would think perhaps transgenic might be a very controversial thing, but again, new advances in technology is perhaps trying to make available enhancements in crop production. Now, many of the developing countries which were trying to increase production may not have access to those kinds of research, but you're making available the outputs of the research to these places. But, I feel that it is an example I think you could go on and on with very many examples from the past. For example, the Hybrid Rice and Green Revolution--- that was an effort from, an international public good.

Masaru Iwanaga: Okay? Good. Thank you very much for summarizing in that way. And so this concludes our session. I'd like to ask you to join me in congratulating the excellent presentations and a good discussion. Thank you very much.