

# Imperial Couple's visit underscores Japan's commitment to world food security



LOS BAÑOS, Philippines – Their Majesties Emperor Akihito and Empress Michiko received an overview of the **International Rice Research Institute** (IRRI) and the institute's vibrant partnership with Japan during a short visit to the IRRI headquarters on Friday afternoon (29 January).

IRRI Director General Matthew Morell presented the institute's goals, financial supporters, and some prominent Japanese scientists who have been associated with the institute.

Emperor Akihito and Empress Michiko were briefed by V. Bruce J. Tolentino, deputy director general for communication and partnerships, on some of the improved rice varieties developed at IRRI. "Their Majesties expressed special interest in IRRI's work on climate-ready rice, particularly submergence-tolerant rice," Tolentino reported. "They also seemed pleased about the long-term relationship IRRI has had with the Japan International Research Center for Agricultural Sciences (JIRCAS), and that the institute has always had a Japanese national on its board of trustees since its founding in 1960."

JIRCAS has through the years sent several Japanese scientists to work on collaborative projects at IRRI, under a special contribution from the Japanese government.

Japanese scientists on the IRRI staff interacted with the Imperial Couple.

Takashi Yamano discussed the institute's contributions to the Green Revolution. "They asked many questions about rice production and our contribution to increasing rice seeds and reducing rice prices," Yamano said. "They were very interested in our work."

Keiichi Hayashi showcased Japan's contributions to IRRI over the past decades. "They were curious about various stresses being caused by climate change that affect rice," Hayashi said.

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Rice played a significant role in the creation of Japan. According to Japanese mythology, Amaterasu, a major deity of the **Shinto** religion and the Sun Goddess and the universe gifted one of her descendants with rice. That descendant was Jinmu, the legendary first emperor of Japan. Emperor Jinmu was tasked with turning Japan into a land of rice.



Japan's creation myths were about "the transformation of a wilderness into a land of abundant rice at the command of the Sun Goddess, whose descendants, the emperors, rule the country by officiating at rice rituals," **said Emiko Ohnuki-Tierney**, a Japanese anthropologist and authority on its rice. Japan's emperors became priest-kings whose functions revolved around the rice crop.

As Jinmu's 125th direct heir, Emperor Akihito is currently Japan's rice-farmer-in-chief, according to Ohnuki-Tierney. Emperor Akihito has maintained his ties to rice. Every year, he plants and harvests rice at the paddy on the Imperial Palace grounds, a tradition started by his late father, Emperor Showa, in 1927.

The Japan-IRRI partnership dates back to 1960 when IRRI was established. Since then, Japan has provided leadership to IRRI with a representative on the IRRI board of trustees. The government of Japan has been one of IRRI's most generous financial supporters, having given a total of more than USD 211 million since 1971.

## EMPEROR AKIHITO AND EMPRESS MICHIKO OF JAPAN VISIT THE INTERNATIONAL RICE RESEARCHINSTITUTE

Northbound Philippines News Online January 29, 2016



Emperor Akihito and Empress Michiko of Japan visit the International Rice Research Institute (IRRI) in Los Baños Laguna on Friday, January 29, 2016. Their Majesties tour at IRRI will cap their five-day official visit to the Philippines. They are scheduled to return to Japan on Saturday morning. President Benigno S. Aquino III is expected to lead the send-off for Their Majesties. **Benhur Arcayan/ Malacañang Photo Bureau** 

AGRICULTURAL SUPPORT. Their majesties visit the International Rice Research Institute in Los Baños, Laguna, on January 29, 2016. Photo by Malacañang Photo Bureau.

After the 30-minute prayer ceremony at the war memorial – which was televised live by the government-run NHK in Japan – the imperial couple proceeded to the International Rice Research Institute (IRRI) in Los Baños.

According to IRRI's Bruce Tolentino, deputy director for communications and partnerships, "Their Majesties expressed special interest in IRRI's work on climate-ready rice, particularly submergence-tolerant rice."

He added, "They also seemed pleased about the long-term relationship IRRI has had with the Japan International Research Center for Agricultural Sciences (JIRCAS), and that the institute has always had a Japanese national on its board of trustees since its founding in 1960."

Emperor Akihito was excited about the tour for more than these official reasons, Takashima said. Aside from the fact that his majesty "personally knows some of the scientists" that the institute has had, the Emperor himself does some farming. "He is very interested in [growing] rice."

According to him, Emperor Akihito has a rice paddy, where he plants, grows, and harvests rice himself. He then prepares them for offering at one of the shrines in the imperial palace. "It is one of his most important rituals."



- Rappler.com



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January 30, 2016 (updated)

#### **IRRI News**

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The Japanese scientists on the IRRI staff interacted with the Imperial Couple.

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#### Imperial Couple visits IRRI

The emperor and empress went to the Japanese Memorial Garden in Caliraya and toured the International Rice Research Institute in Los Baños, both in Laguna, on Friday.

At the IRRI, they were briefed on the organization's efforts to ensure global food security and were told of Japan's contributions to the organization.

IRRI director general Matthew Morrell talked about the institution's mandate, its current work and how Japan contributed to its research efforts on rice production.

Japan was one of IRRI's financial donors in 2015, joining other big contributors like the Bill and Melinda Gates Foundation, the US and Australian governments.

Japan has also contributed 81 scientists to IRRI since 1960 and during IRRI's first board meeting in 1960, Japanese geneticist Hitoshi Kihara was elected as first chairman of the IRRI program committee.



Philippine Daily Inquirer

# Japanese Imperial couple visits IRRI to check on updates on rice research

Just before heading home, their Majesties Emperor Akihito and Empress Michiko dropped by the International Rice Research Institute (IRRI) in Los Baños, Laguna connecting with Filipino and Japanese rice experts associated with the organization.

According to the IRRI, the Japanese Imperial couple, who were in the Philippines for a 5-day state visit, were particularly interested how IRRI, the front runner in rice research studies, is able to plant rice three times a year at the world's longest-running rice research project—the Long-term Continuous Cropping Experiment (LTCCE).

"They were quite surprised that we have been planting rice at the LTCCE three times a year," Yoichiro Kato one of the Japanese rice researcher at the living field laboratory.

"In Japan, farmers usually plant only one crop a year. They were very interested in the different effects of fertilizer and pests on rice plants," Kato said.

Her Majesty, on the other hand, "was particularly keen on salt-tolerant rice."

In Japan, rice played a significant role in its creation as a country. Based on Japanese mythology, Amaterasu, a major deity of the Shinto religion and the sun goddess and the universe gifted one of her offspring with rice. The descendant was Jinmu, the legendary first emperor of Japan who was tasked to turn the country into a land of rice.

Emperor Akihito, Jinmu's 125th direct heir, is currently Japan's rice farmer-in-chief, according to Emiko Ohnuki-Tierney, a Japanese anthropologist and authority on Japanese rice. Traditionally, Japanese emperors serve as the priest-kings.

In keeping with tradition and to maintain his ties to rice, Emperor Akihito has yearly plants and harvests rice at the paddy on the Imperial Palace grounds—a tradition his late father, Emperor Showa started in 1927.

In Japan, rice farmers are heavyweights who can exercise their political clout in government, particularly in the legislature.

Bruce J. Tolentino, deputy general for communication and partnership, said the Imperial couple also expressed special interest in IRRI's work on climate-ready rice, "particularly submergence-tolerant rice."

"They also seemed pleased about the long-term relationship IRRI has had with the Japan International Research Center for Agricultural Sciences (JIRCAS), and that the institute has always had a Japanese national on its board of trustees since its founding in 1960," Tolentino said.

Japan and IRRI has a long-standing partnership that dates back to 1960 when the organization was founded. Japan has since provided leadership to IRRI with a representative on the IRRI board of trustees.

According to IRRI, the government of Japan has been one of IRRI's most generous and staunchest financial supporters, having given a total of more than US\$211-million since 1971. Through the years, JIRCAS have sent over several Japanese scientists to work in the Philippines through collaborative projects at IRRI.

Takashi Yamano, one of the scientists who discussed with the couple the institute's contributions to the Green Revolution said they "were very interested in our work."

"They asked many questions about rice production and our contribution to increasing rice seeds and reducing rice prices," Yamano said.

"They were curious about various stresses being caused by climate change that affect rice," Keiichi Hayashi said another prominent scientist at the IRRI. (By: Ched Romulo)

[Source: www.irri-news.blogspot.com ]

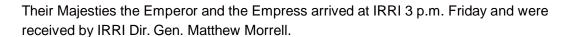




### Office of the President

Japanese Imperial couple visits International Rice Research Institute January 30, 2016

Japanese Emperor Akihito and Empress Michiko visited the International Rice Research Institute (IRRI) on Friday where they were briefed on the organization's efforts in ensuring global food security as well as the contributions of Japan to the rice research thrust of IRRI.





They were briefed by Dr. Morrell about IRRI's mandate, its current works and how Japan contributes to its research efforts on rice production.

Japan was one of IRRI's financial donors in 2015 joining other big contributors like the Bill and Melinda Gates Foundation, the US government, and the Australian government.

Last year, IRRI got \$97-million budget from more than 90 donors that include national governments, international agencies, and philanthropists.

Japan has contributed 81 scientists since 1960, among them: Akira Tanaka, head, Plant Physiology Department, 1962-66; Yujiro Hayami, agricultural economist, 1974,77; Iwao Watanabe, head, Soil Microbiology Program, 1975-91; Tokio Imbe, plant breeder, 1993-98; Osamu Ito, head of agronomy, Plant Physiology and Agro-ecology and leader of Long-Term Continuous Cropping Experiment (LTCCE), 1996-2000 and Yoshimichi Fukuta, plant breeder, 1999-2004.

Also, during IRRI's first board meeting in 1960, Japanese geneticist Hitoshi Kihara was elected as first chair of the IRRI Program Committee.

IRRI maintains offices in 15 countries in Asia and Africa and has a workforce of more than 1,200 representing 42 nationalities.

An independent, non-profit research and educational institute, IRRI was founded in 1960 by the Ford and Rockefeller foundations with support from the Philippine government.

Its global mission is to ensure global rice supply, reduce poverty and hunger, improve health of rice farmers and consumers and ensure environmental sustainability.

Among IRRI's recent achievement include the development of stress-tolerant rice, satellite mapping and watersaving technologies, decision-support tools, postharvest technology, pest and disease management, better grain quality and sequenced genome of 3,000 rice varieties.

### The Japanese Imperial Couple visit IRRI

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Photo by Isagani Serrano/IRRI

### Tour at the International Rice Research Institute (IRRI)

Los Baños, Laguna 29 January 2016

Their Majesties Emperor Akihito and Empress Michiko of Japan paid a visit at the International Rice Research Institute (IRRI) in Los Baños, Laguna.

According to reports by the Japanese Ministry of Foreign Affairs, Emperor Akihito takes a keen interest in natural life and its conservation. Following the example of his father, then Emperor Showa, His Majesty plants and harvests rice in the paddies of the Imperial Palace grounds.

Alongside a tour in IRRI's facilities, the Imperial couple was also briefed on the different kinds of rice developed by the institute, which are adoptive to climate change such as drought-tolerant, submergence-tolerant and salt-tolerant rice.

IRRI is a premier research organization dedicated to reducing hunger and poverty through rice science. It is a non-profit and independent research institute founded in 1960 by the Ford and Rockefeller Foundations with the support of the Philippine government. Its headquarters is located in Los Baños, Laguna and has offices in 17 rice growing countries in Asia and Africa.

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Photo by Isagani Serrano/IRRI



# AKIHITO, RICE FARMER-IN-CHIEF | Emperor's IRRI visit and Japan's stake in world food security

LAGUNA, Philippines - Their Majesties Emperor Akihito and Empress Michiko's visit to the International Rice Research Institute (IRRI), which has had a vibrant partnership with Japan for decades, underscored the Asian giant's commitment to food security. It also drew from Japan's creation mythology that makes Emperor Akihito heir of the legendary first emperor who made Japan into a land of rice, making Akihito now the "rice farmer in chief."

Akihito and Empress Michiko, who visited the Philippines for five days, paid a short visit to the IRRI headquarters in Los Baños, Laguna, on Friday afternoon, the day before departing for Tokyo.

IRRI Director General Matthew Morell presented the institute's goals, financial supporters, and some prominent Japanese scientists who have been associated with the institute.

V. Bruce J. Tolentino, deputy director general for communication and partnerships, briefed the Japanese imperial couple on some of the improved rice varieties developed at IRRI.

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"They were very interested in our work," he added.

#### Japan and IRRI

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descendant was "Jinmu", the legendary first emperor of Japan. Emperor Jinmu was tasked with turning Japan into a land of rice.

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Photo by Isagani Serrano

## Posters presented to the Imperial Couple

### THE INTERNATIONAL RICE RESEARCH INSTITUTE

IRRI is an independent, nonprofit research and educational institute founded in 1960 by the Ford and Rockefeller foundations, with support from the Philippine government. Its global mission is to

- Assure global rice supply
- Reduce poverty and hunger
- Improve the health of rice farmers and consumers
- Ensure environmental sustainability



**1960.** The IRRI Board of Trustees meets for the first time. Board member Hitoshi Kihara, Japanese geneticist, elected first chair of the IRRI Program Committee



**1962.** Philippine President Diosdado Macapagal and John D. Rockefeller III attend formal dedication of IRRI

### **OUR PEOPLE**

- Offices in 15 countries in Asia and Africa
- A workforce of more than 1,200, representing 42 nationalities
- 81 Japanese scientists since 1960, among them:

Akira Tanaka, head, Plant Physiology Department, 1962-66

Yujiro Hayami, agricultural economist, 1974-77

Iwao Watanabe, head, Soil Microbiology Program, 1975-91

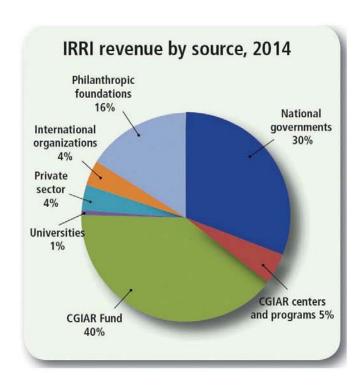
Tokio Imbe, plant breeder, 1993-98

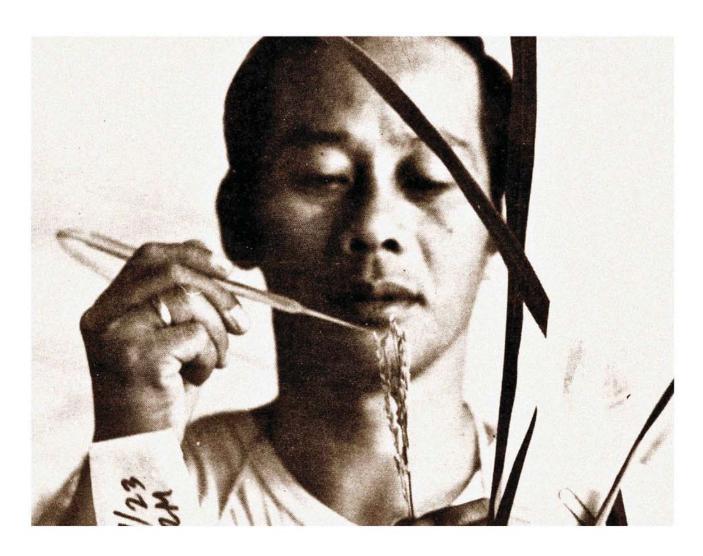
Osamu Ito, head of Agronomy, Plant Physiology, and Agro-ecology and leader of LTCCE, 1996-2000

Yoshimichi Fukuta, plant breeder, 1999-2004

### **FINANCIAL SUPPORT**

- 2015 budget is USD 97 million, from more than 90 donors that include national governments, international agencies, and philanthropists
- Major donors in 2015
  - Bill & Melinda Gates Foundation
  - United States of America
  - Japan
  - Australia





従来の品種改良方法によるIR8の開発

## 緑の革命及び'奇跡の米'



IR8はインドネシアの従来品種である「ペタ」と台湾の従来品種である「低脚島尖」を掛け合わせて誕生した。

- IR8、すなわち '奇跡の米'によって、IRRIの貢献による " 緑の革命"は1966年に始まった。
- IRRIの研究者であったピーター・ジェニングス博士、田中明博士、ハンク・ビーチェル博士及びテ・ズ・チャン博士によってIR 8は開発された。
- IR8の収量は従来品種のおよそ10倍。
- IR8は、深刻な飢饉に苦しんでいた1966年のインドや197 0年代の中国において普及が進んだ。
- IR8やそれに続く改良品種は、アジア中の農家に広く栽培される ようになり、米価を安定的かつ安価にし、食糧不足及び貧困削減に 貢献した。



左: IR8を19 67年に栽培し、 その普及に貢献し た"ミスターIR 8" ラオ氏

下: ラオ氏と20 09年から普及が 始まった洪水耐性 稲 (Swarna-Sub1)



## 日本による資金支援

日本政府はIRRIにとって最大の支援者の1つであり、1971年から2014年の間に211百万米ドルもの資金援助を行った。既に「インドの高温・稲作条件不利地域における気候状態が籾の念実及び品質に与える影響事業」及び「東南アジア地域における洪水抵抗性品種の普及と実証事業」は日本の支援により完了した。

### 日本の支援により実施中事業は以下のとおり。

- 天水稲作地域における気候変動適応事業
- アジアのかんがい地域における温室効果ガス排出 抑制事業
- 開発途上国向け干ばつ耐性稲の開発事業
- ・食の安全・健康に資する "ワンダーライス"構想事業
- ・アフリカの農業者を対象とした、種子から市場に 至るまでの米生産・流通に関する訓練プログラム
- 米生産・研究に関する学術プログラム

### 日本によるインフラ支援

- 逸見謙三研究棟
- ニール C. ブラディ研究棟 (国際稲遺伝子バンク)





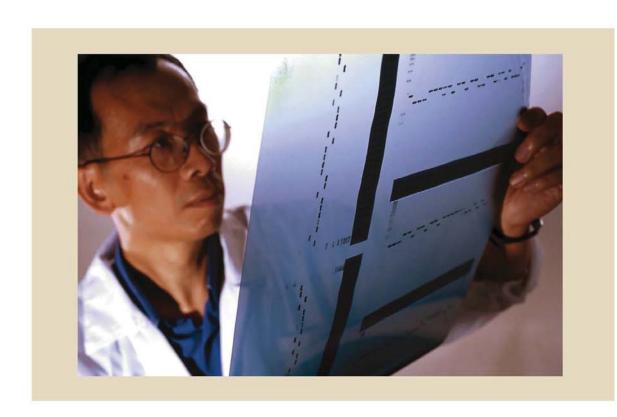
### 日本による能力強化・向上

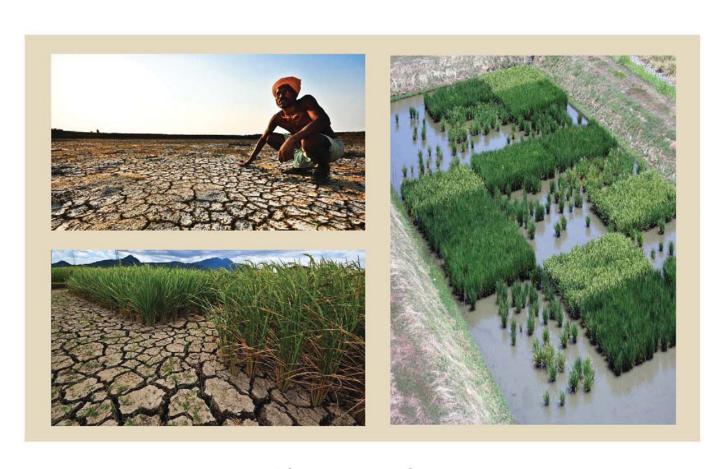
- ADB-日本奨学金プログラムにより、60人 以上の大学院生を支援
- 開発途上国の150人以上の大学生及び研究 生を支援
- ・アフリカの140人以上の稲研究者及び農家 を対象とした、職業訓練、技能研修を支援
- 田辺光彰による米多様性保全を推進する芸術 作品の供与

## **IMPROVED RICE VARIETIES**

Marker-assisted breeding using genetics to screen rice DNA and streamline the breeding process have resulted in:

- Flood tolerance
- Drought tolerance
- Salt tolerance
- Heat tolerance





Climate-ready rice

### RECENT ACHIEVEMENTS

- Stress-tolerant rice
- New high-yielding varieties for Africa
- Crop establishment
- Satellite mapping technology
- Water-saving technology
- Decision-support tools
- Postharvest technology
- Pest and disease management
- Technologies to reduce greenhouse gas emissions in rice production
- Better grain quality
- Sequenced genome of 3,000 rice varieties
- Scholarship program to support 150 scholars and trainees from developing countries



# Japan and IRRI

apan and IRRI have been partners since the Institute's establishment in 1960. Ever since, Japan has provided leadership expertise by having a representative on the IRRI Board of Trustees. The government of Japan has been one of IRRI's most generous financial supporters, having given more than USD 215 million between 1971 and 2014. In 1992, one of IRRI's research buildings was named after Dr. Kenzo Hemmi, an outstanding Japanese agriculturist. The Japanese government contributed USD 1.9 million to its construction. Japan also provided financial support for the construction of the Nyle C. Brady Laboratory, which houses the International Rice Genebank.

Over the years, Japan has shared with IRRI both knowledge and human resources, especially scientists. Forty-eight trainees and 112 scholars from Japan worked at IRRI between 1962 and 2015. These include 21 PhD and 16 MSc students, 49 on-the-job trainees, 12 interns, and 14 fellows.

Since 1984, Japanese scientists have been assigned by the Japan International Research Center for Agricultural Sciences (JIRCAS) to work on collaborative projects at IRRI headquarters under a special contribution of the Japanese government through the Ministry of Agriculture, Forestry, and Fisheries. This resulted in the identification of genes that are resistant to various races of bacterial leaf blight disease, establishment of direct seeding technology, and a clearer understanding of the genetic mechanism for control of rice tungro. JIRCAS, alongside IRRI and four other research institutions, is a strategic founding partner of the Global Rice Science Partnership.

### Ongoing research activities

#### Climate change

CCARA and CCADS-RR. Climate Change Adaptation in
Rainfed Rice Areas (CCARA) aims to maximize rainfed rice
production through efficient natural resource management
based on seasonal climate predictions in Southeast Asia.
The project developed WeRise, a decision-support system
that provides farmers with crucial weather and rainfall
distribution information during the crop-growing season.
WeRise has been pilot-tested in Indonesia and Lao PDR,
providing training to 114 extensionists and researchers.
It has also developed seven rice lines for yield potential
and seven lines for early-morning flowering. The second
phase of CCARA, Climate change adaptation through the
development of a decision-support tool to guide rainfed
rice (CCADS-RR), aims to develop a WeRise-based integrated
decision-support system in Southeast Asia. The system will



## Completed research activities and key achievements

- Impact of local climatic conditions on rice spikelet fertility and grain quality in the hot and vulnerable regions of India. JIRCAS and IRRI scientists evaluated the effect of weather conditions on rice grain quality and spikelet sterility under field conditions in India to develop early-morning flowering rice, which can avoid heat-induced spikelet sterility. The project identified heat-sensitive popular varieties to develop EMF rice through future molecular breeding.
- Implementation plans to disseminate submergence-tolerant varieties and associated new production practices in Southeast Asia. The project helped farmers reduce losses in production and income caused by typhoons and flooding through (1) GIS and remote-sensing courses; (2) the development of a response plan to reduce the impact of submergence on rice production and farmer livelihood; (3) on-station and on-farm evaluation of submergence-tolerant rice varieties; and (4) training of NARES partners on rice and marker-assisted breeding, management and analysis of socioeconomic data, and participatory varietal selection, among others.

- enable rainfed rice farmers to increase production by up to 50%. It also aims to evaluate this system for improvement of rainfed rice production in sub-Saharan Africa.
- MIRSA and MIRSA 2. Greenhouse gas mitigation in irrigated rice systems in Asia (MIRSA) assessed the feasibility of greenhouse gas mitigation through water-saving techniques in irrigated rice production. It determined different rates of methane gas emissions during a cropping season and established a standard protocol for measuring greenhouse gas emissions in rice systems. To familiarize farmers with alternate wetting and drying (AWD) technologies, extension activities such as field visits, seminars, and workshops were done. Technology development for circulatory food production systems responsive to climate change (MIRSA 2) is the ongoing second phase of the project. MIRSA 2 aims to develop an improved rice cropping system in Southeast Asia with AWD. The goal is to craft implementation guidelines on techniques to reduce greenhouse gas emissions from irrigated paddy fields and set up an information infrastructure to share findings of participating members.

#### Breeding and crop improvement

- Development of drought-tolerant crops for developing countries. The project evaluates transgenics of known stress-response genes for their role in affecting yield under drought. Work at IRRI focuses on drought in lowland rice conditions using the variety IR64. In collaboration with JIR-CAS, the International Center for Tropical Agriculture, and the International Maize and Wheat Improvement Center, 10 genes have been evaluated for yield under drought in field and screenhouse studies on rice and wheat. In lowland rice studies at IRRI, some transgenics related to multiple traits showed a significant effect on yield. The most promising line was identified and is being crossed with an IRRI drought-tolerant variety in an effort to increase its yield under drought.
- Wonder rice initiative for food security and health. This joint IRRI-Nagoya University-Japan International Cooperation

Agency (JICA) research project aims to develop new rice varieties for Africa and Asia that are high yielding, resistant to biotic stresses, and tolerant of abiotic stresses that adversely affect rice production in both regions. Currently in its third year, the project has used nine Asian and seven African elite varieties with inherent adaptation to different rice ecosystems on the two continents. Seven rice cultivars are being used as genetic donors for high yield and resistance to blast and bacterial blight. More than 200 advanced generation backcross lines, derived from different cross combinations between the selected recurrent and donor parents, have been developed. Pyramiding genes for yield and resistance to biotic stresses using rice lines developed under the project has been started.

 Introduction and use of the genetic resources produced by Japan-IRRI collaborative research. Breeding materials developed under the project are transferred to JIRCAS in Japan and evaluated under local environments. Selected elite lines with high-yield potential and heat tolerance will be used for the development of Japanese rice varieties.

#### Capacity-building programs

- From 2011 to 2014, JICA, IRRI, and the Philippine Rice
  Research Institute conducted the season-long rice-farming
  extension program for Africa. Established with the Coalition
  for African Rice Development (CARD), the program aims to
  strengthen human resources in rice production in Africa.
  Under the training component, IRRI trained 63 extension
  agronomists from 14 CARD countries and 13 participants
  from the Philippines, 38 young researchers from 20 CARD
  countries, and 41 research technicians from 21 CARD
  countries. In 2016-19, JICA and IRRI will conduct Phase 2 of
  the program and offer three courses annually on building
  capacity for improving the rice seed sector in Africa.
- In partnership with Kyushu University, IRRI will conduct a rice production and research course for the university's undergraduate and graduate students.

#### **International Rice Research Institute (IRRI)**

The International Rice Research Institute (IRRI) is the world's premier research organization dedicated to reducing poverty and hunger through rice science; improving the health and welfare of rice farmers and consumers; and protecting the rice-growing environment for future generations. IRRI is an independent, nonprofit research and educational institute founded in 1960 by the Ford and Rockefeller foundations, with support from the Philippine government. The institute, headquartered in Los Baños, Philippines, has offices in 15 rice-growing countries in Asia and Africa, and about 1,000 staff members.

Working with in-country partners, IRRI develops advanced rice varieties that yield more grain and better withstand pests and disease as well as flooding, drought, and other destructive effects of climate change. More than half of the rice area in Asia is planted to IRRI-bred varieties or their progenies. The institute develops new and improved methods and technologies that enable farmers to manage their farms profitably and sustainably, and recommends rice varieties and agricultural practices suitable to particular farm conditions as well as consumer preferences. IRRI assists national agricultural research and extension systems in formulating and implementing country rice sector strategies.

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