

# Commercialization and branding of rice varieties in JAPAN



**Makoto SAKAI**

Agri-Food Business Innovation Center (ABIC)  
National Agriculture and Food Research Organization  
(NARO); JAPAN

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# Self Introduction

## 1<sup>st</sup> career ; Rice breeder.

Contributed to develop rice varieties of rice with resistance to high temperature, rice for flour, rice for sake brewing, etc. )

## 2nd career

Head of public relation and dissemination section of NARO institute

Contributed to realized the collaboration works with private enterprises based on the utilization of crop varieties.

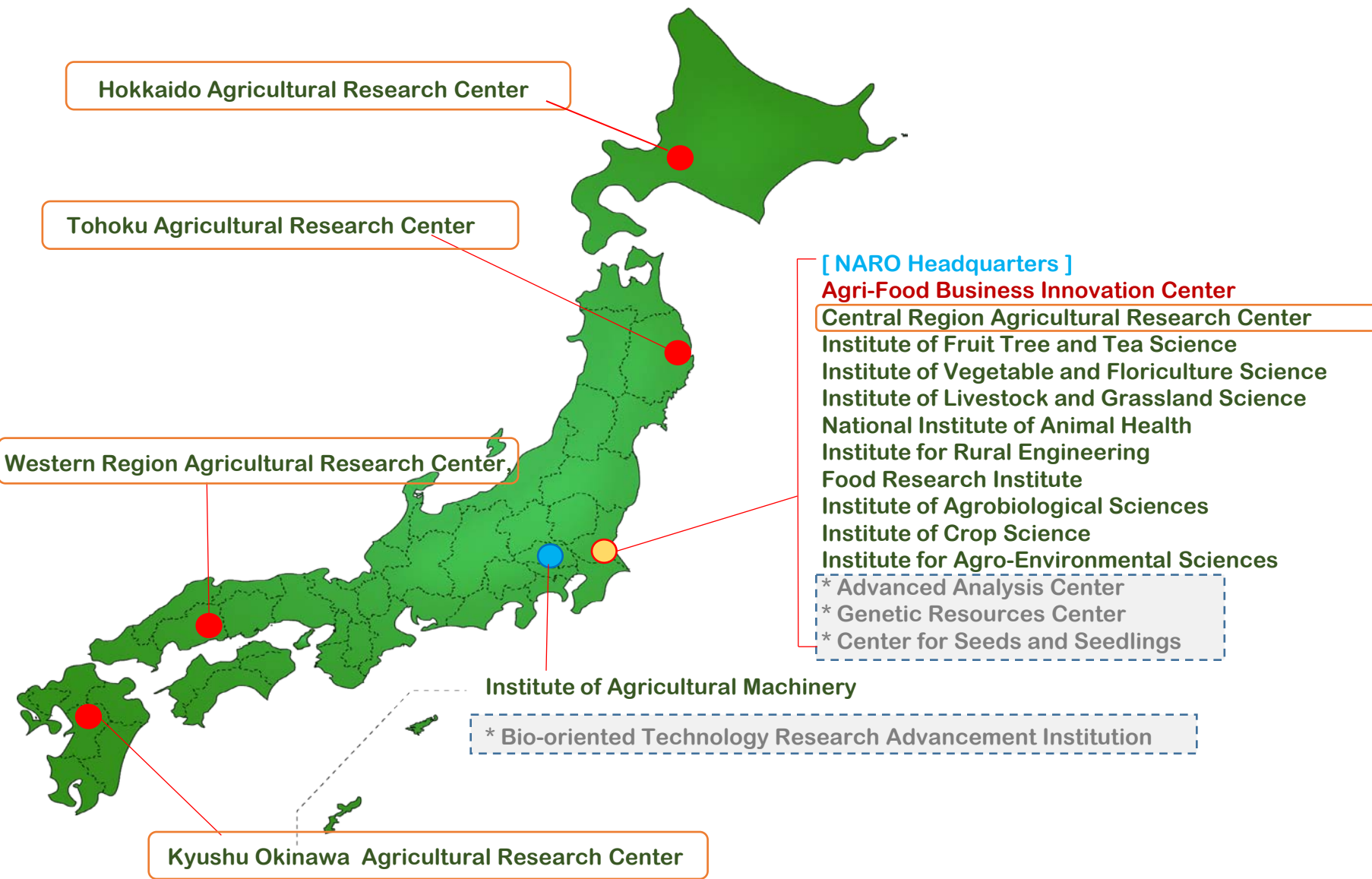
Present:

**Director of ABIC**

an organization for collaboration with industry, academia and government.



# Organizational Structure of NARO



## Objectives

- ▶ Development of advanced technology towards the creation of agriculture and food business.
- ▶ Execute and support NARO's initiatives on the utilization and transfer of research achievements.
- ▶ Research towards the development of viable marketing strategies for efficient transfer of research achievements



# Comparison Plant Breeders' Rights and Patent Right in JAPAN



	Plant Breeders' Rights (PBR)	Patent right
Object	Plant variety	Invention
Laws	Plant Variety Protection and Seed Act	Patent law
Government agency	Ministry of Agriculture, Forestry and Fisheries	Japan Patent Office
Requirements for registration	Varietal Traits (Identity, uniformity, stability) Not transferred Proper naming	Useful in industry Novelty Progressiveness
Validity period of registration	25 years from registration (30 years for tree plants)	20 years from application
Others	The target of protection is seeds and seedlings Self propagation by farmers is allowed	

# Application and registration for PBR at NARO



Year	2010	2011	2012	2013	2014	2015	Reference deta
No. of newly applied PV(domestic)	39	46	36	46	34	31	No. of newly applied (2014 Nationwide) 979
Total No. of registered PV (domestic)	475	485	519	534	580	599	Total No. of registered PV (2015.3 Nationwide) 8,830
No. of newly applied PV(overseas)	1	1	6	2	0	0	
Total No. of registered PV(domestic)	28	36	37	33	34	37	

NARO registers all promising varieties newly developed to keep PBR  
 NARO licenses its own PV' s to seed suppliers and agricultural organizations.

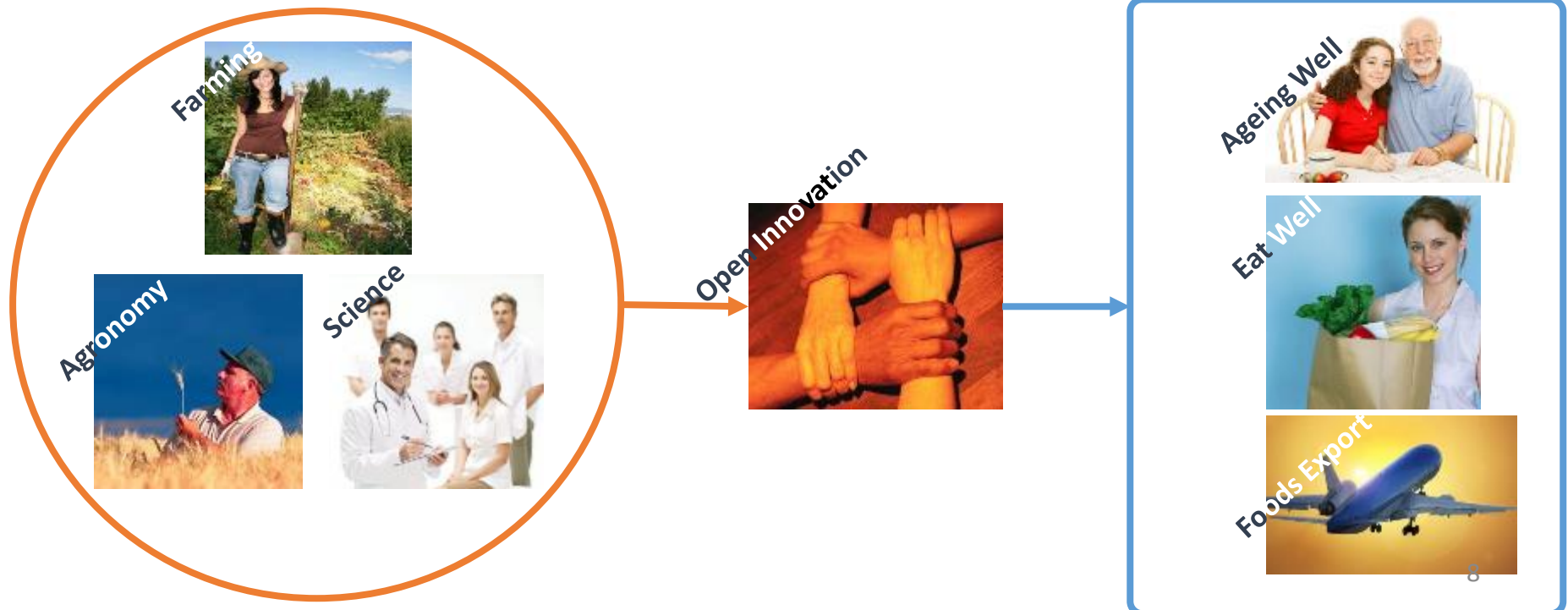
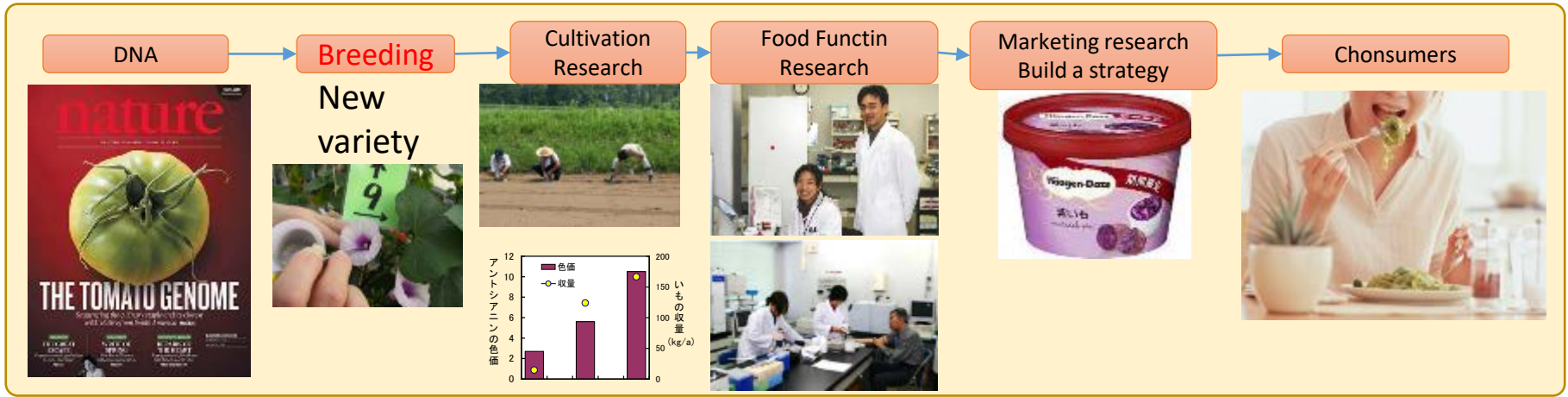
# Crop varieties developed by NARO with valid PBR (2016.3)



	Total No. of registered PV	No. of newly applied PV (in 2015)	Domestic Share of NARO varieties in No. of PV
Rice	120	7	27%
Wheat & Barley	56	2	60%
Soybean	31	1	29%
Fruit trees	83	4	
Flowers	13	1	
Vegetables	82	4	
Potatoes & tubers	60	1	52%
Feed crops	103	8	
	51	1	
<b>Sum</b>	<b>599</b>	<b>31</b>	

NARO is the largest food crop breeder in Japan.

# Contribution of the Food Value Chain





## ■ Brand new rice varieties developed by NARO

1. **Kinumusume** and **Nikomaru**: regional brand rice variety



2. **Mizuhochikara**: rice variety suitable for bread making



3. **Gin-no-Sato**: rice variety suitable for sake (rice wine)



# 1. Kinumusume and Nikomaru

## Aim of breeding



### **Kinumusume**

Intermediate maturity between “Koshihikari” and ‘Hinohikari’, combining the good eating qualities with adaptability for western region of Japan.



### **Nikomaru**

New brand variety to replace “Hinohikari”; leading variety in Western region of Japan which has significantly degraded in grain appearance.

# Dissemination process of Kinumusume and Nikomaru



## Nikomaru

Adopted for cultivation in Nagasaki Prefecture



Introduced in a matching meeting in Kyushu (2006)



Survey of tolerance for ripening at high temperature, sharing and follow-up of field data



Investigation of agronomic traits, development of cultivation manual



Expansion of cultivation in other prefectures

## Kinumusume

Adopted for cultivation in Shimane Prefecture



Chosen as representative variety by prefectural research agencies in western part of Japan with NARO.



Increase in number of prefectures that recognize the potential for cultivation



Expansion of cultivation in other prefectures

**Breeders' outreach activities:**  
**Very important rolls**

- Lectures and seminars in various regions on PV traits.
- Field visits from various agricultural organizations etc.
- Press release, correspondence with mass media

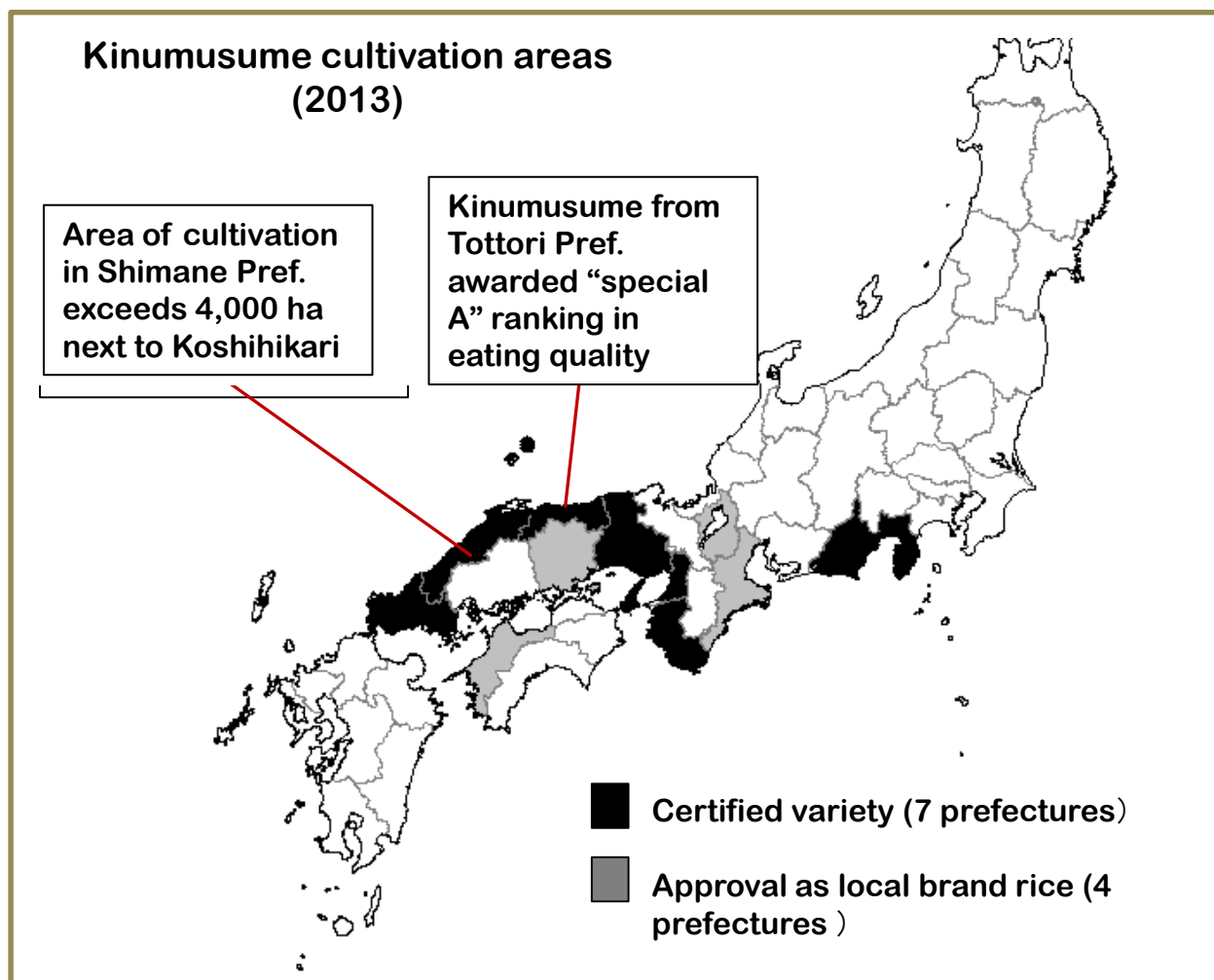
Cooperation of breeders and prefectural agencies



# Expansion of Kinumusume cultivation

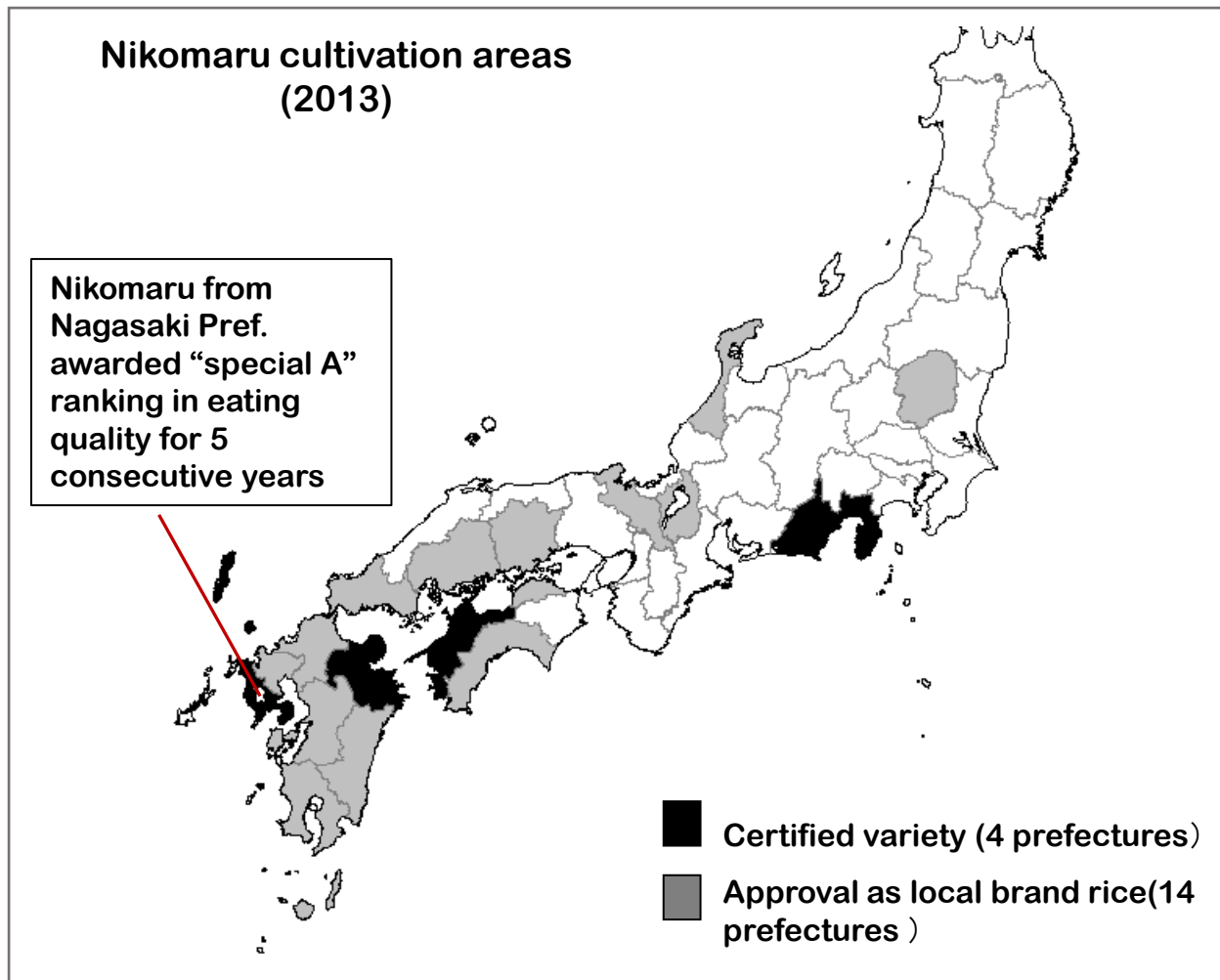


Rice package of Kinumusume



The total area of cultivation in 2015 is estimated at about 20,000 ha.

# Expansion of Nikomaru cultivation



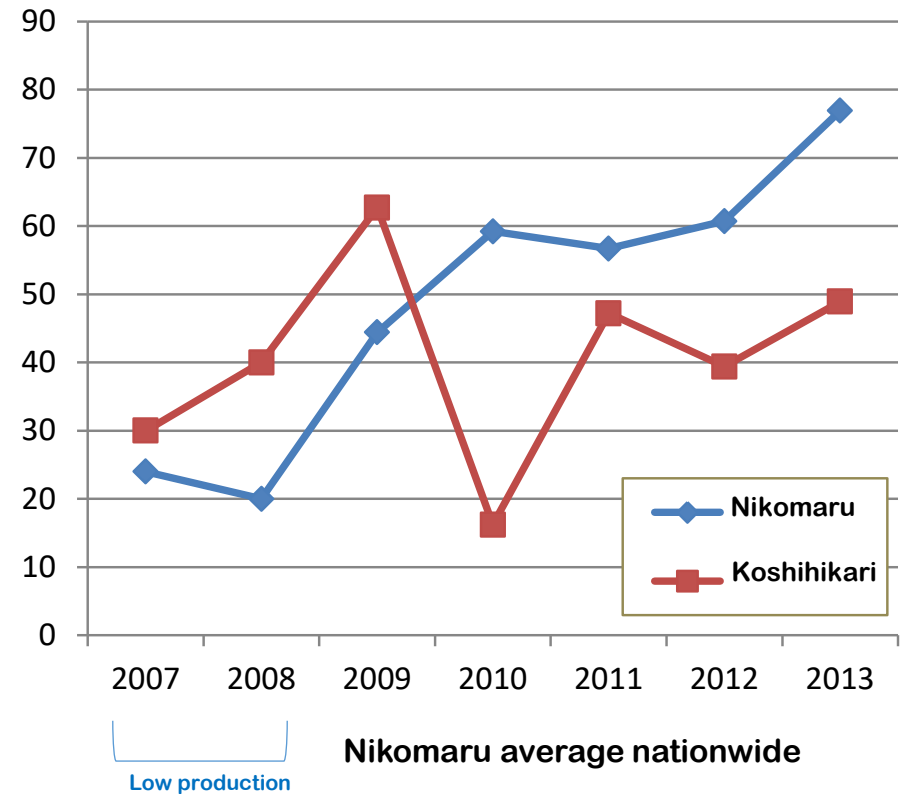
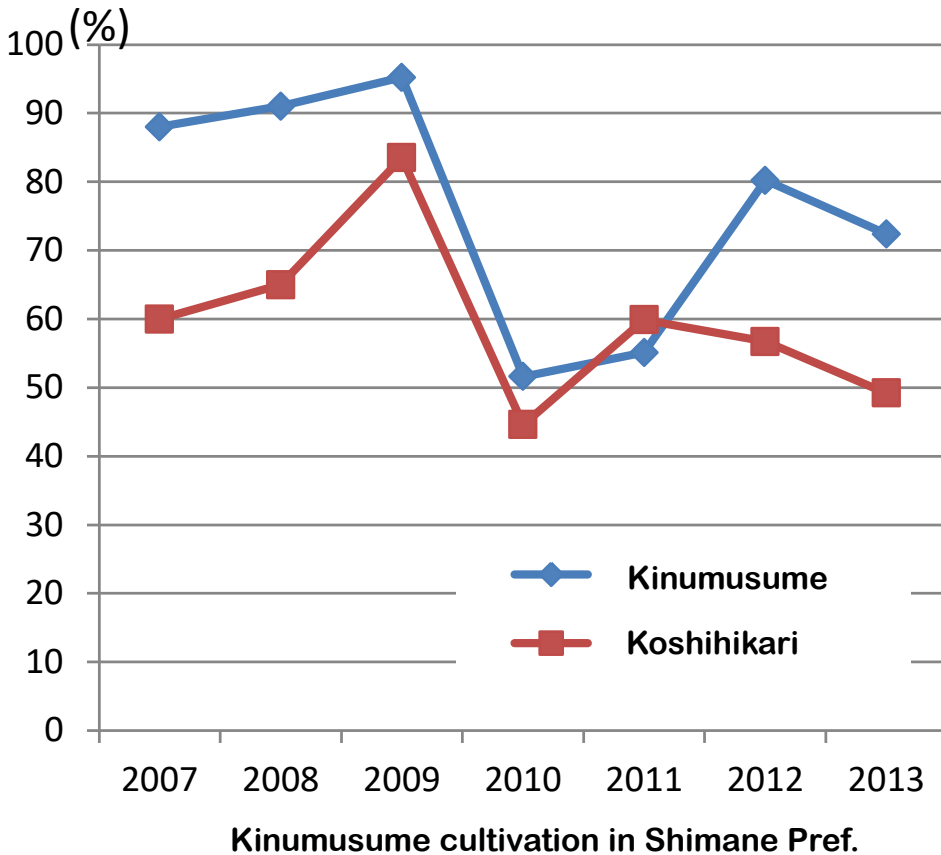
The total area of cultivation in 2015 is about 12,000 ha

**Cultivation of certified variety in Kochi Prefecture has increased since 2014.**

# Influence of Kinumusume and Nikomaro cultivation



Improvement of grain quality → Increase in percentage of high-quality rice production.



Percentage of high-quality (premium grade) rice

# Contribution of Nikomaru to local rice branding



“Tenku no Sato” from Motoyama village(Kochi)



“Niidayone” from Shimanto town (Kochi)

Both have been consecutively awarded for good taste by the Grain Inspection Association.



# Promotion of high quality rice as a new brand

Additional case information

**TSUYAHIME**: New rice variety granted in 2011

Suitable for cool region of Japan with **fine eating quality**

Under the comprehensive branding strategy organized by Yamagata Prefecture

◆ **Securing high quality**

Limited farmers, cultivation area and methods, severe standard for shipping

◆ **Advertising strategy**

Nationwide TV promotion film, Newspaper AD, Registered trademark of package design

◆ **Sales promotion**

Top sales by the Governor, PR by “Tsuyahime lady” at events, tasting events

High appreciation from market and consumers

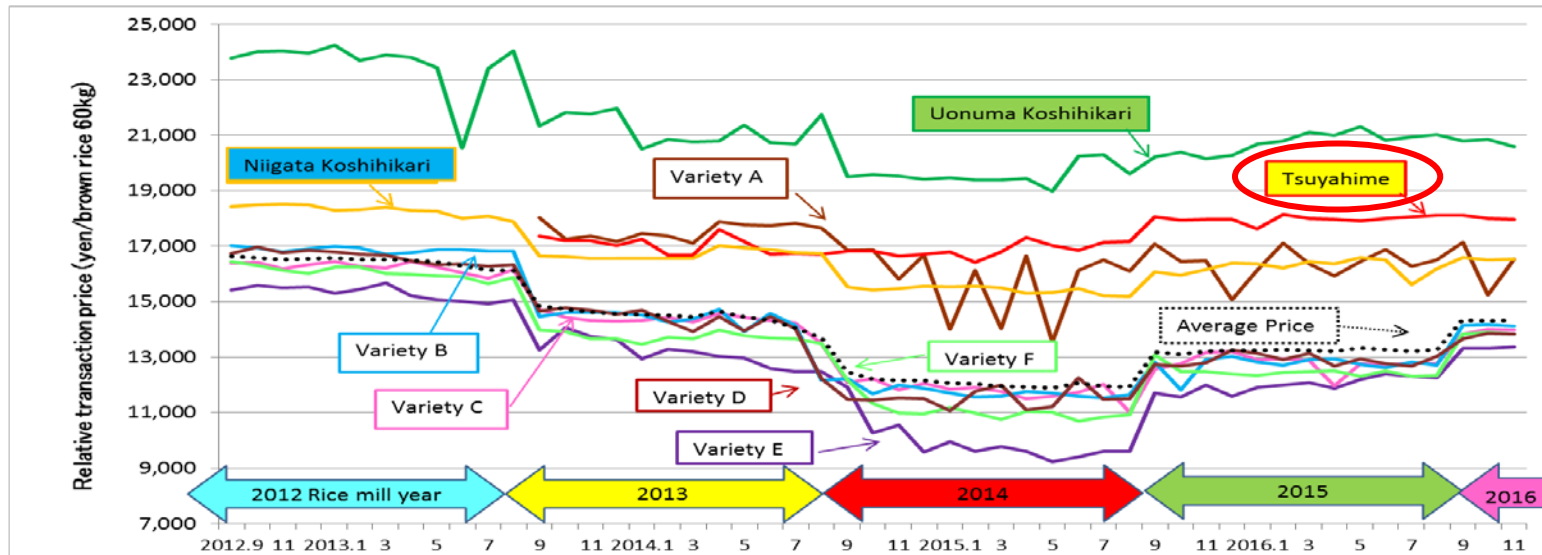
Expansion of Production





# Result of the promotion

- Secure price position equal to or better than Niigata Koshihikari



- Cultivation area and distribution volume increase about 3 times

cultivation area 2,500ha(2010) → 8,807ha(2016)

growers 2,520 unit(2010) → 5,320unit(2016)

distribution inspection amount

12,267t(2010) → 35,949t(2016)

- However, nationwide awareness is still on progress  
Production share 0.8% (Koshihikari 36.1%)

# What is variety evaluation?

**Natural values**  
(genetic traits and generally inherent)

**Agronomic traits**  
(yield, disease resistance etc.)

**Quality** (taste, cooking quality etc.)

**Acquired values**  
(based mainly on evaluation of society)

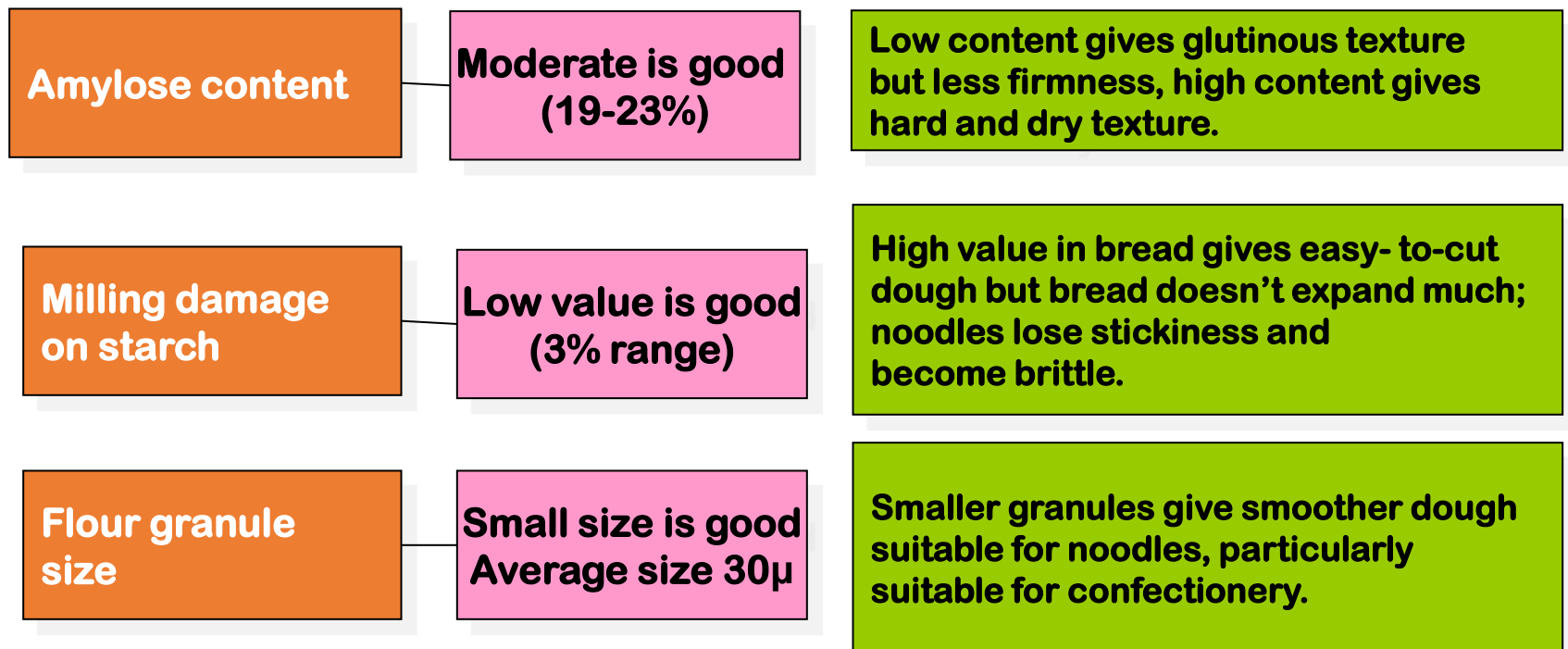
**Market value**  
**Name recognition**  
**Brand image**  
**Cultivation area (yield)**  
**Recommended varieties**

Cultivation method

Cultivation model

## What is the suitability of rice flour?

Rice flour characteristics and impact on processing of bread or pastries

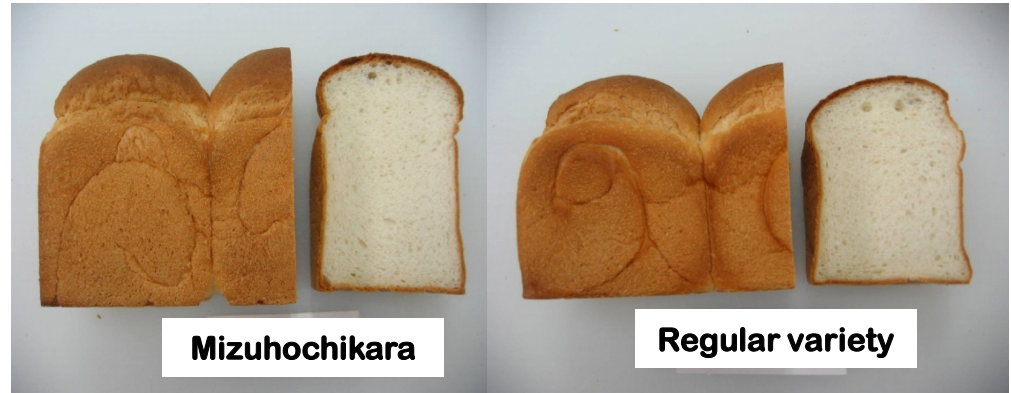


# Mizuhochikara as suitable variety for bread making

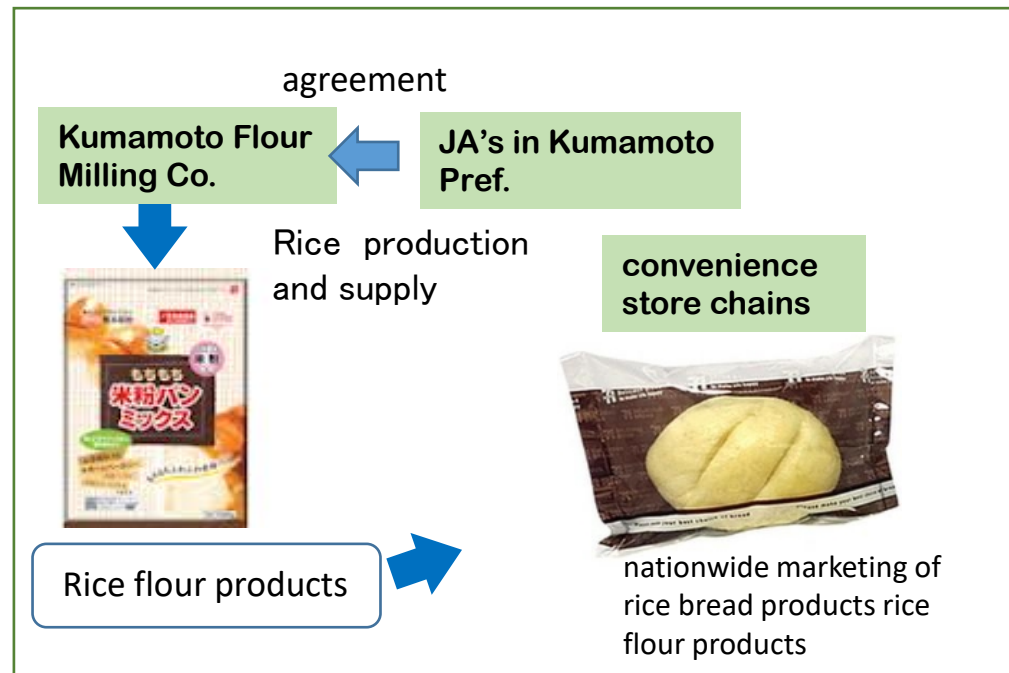
## Certified variety in Kumamoto for rice flour



## Better bread expansion than regular variety



The rice flour from Mizuhochikara was analyzed by NARO in cooperation with the Kumamoto Flour Milling Co.



# Gin-no-Sato rice variety suitable for sake ( rice wine)



## Rising popularity of sake overseas

- ▶ Boom in Japanese food overseas → Japanese sake is also becoming popular
- ▶ Increase in cold circulation → maintaining quality to increase export
- ▶ Inclusion in competition → Sake category is now included in international wine competition

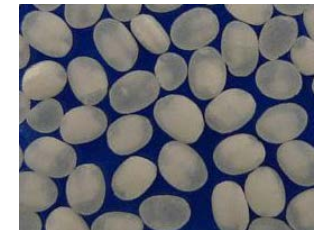


- Popularity of premium sake + demand for high quality rice for brewing. Conditions for rice sake brewing

- ▶ Large grains, good milling quality (grains do not break)
- ▶ White-core (shinpaku) expression · low protein

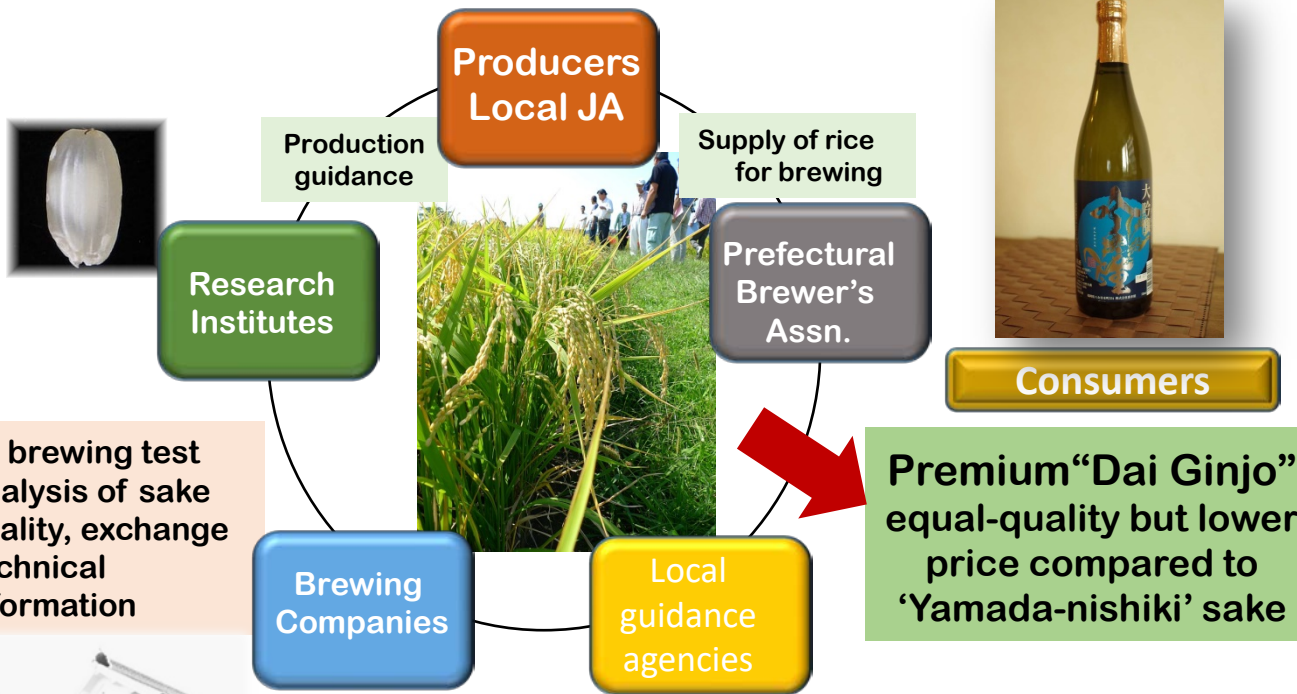
- Increasing demand for brewer's rice variety "Yamada Nishiki" (premium rice for brewing)

- ▶ Production limited to Hyogo, Fukuoka and Okayama Prefectures
- ▶ Low yield, easy lodging, high cost



# Gin-no-Sato improved rice variety suitable for sake

## Collaboration of Fukuoka Brewery, JA and NARO



Sake brewing test  
→ analysis of sake quality, exchange of technical information



Field seminar for farmers

Farmers and breweries started a study group on cultivation.

Guarantee towards a stable market → also enhances motivation among farmers

Certified in Yamanashi Pref.  
Recognized as brand "suitable for brewing" in 5 prefectures  
Comarcially Grown in 9 pref.'s



Adopted as rice for brewing by more than 20 brewers including 5 in Fukuoka Pref. for brewing Premium sake.



Consumers

Premium "Dai Ginjo" equal-quality but lower price compared to 'Yamada-nishiki' sake



Expert farmer and Breeder



Sake products

## ■ Brand new rice varieties developed by NARO

1. **Kinumusume** and **Nikomaru**: regional brand rice variety

Breeders' outreach activities



2. **Mizuhochikara**: rice variety suitable for bread making

Collaborating research with a milling company



3. **Gin-no-Sato**: rice variety suitable for sake (rice wine)

Value chain approach by local consortium



Thank you very much for your attention!



Power of Breeding

明日を動かす育種力

NARO

