

# Crop Seeds as Local Resources for Endogenous Rural Development -Cases in Japan-

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Workshop on China-Japan-Korea Rural Vitalization Experiences:  
Implications for ASEAN Countries

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# Contents of Presentation

- 1 . Importance of agricultural bio-diversity in rural development
2. Seed management on local areas as implementing tools of on farm biodiversity conservation for rural-revitalization
  - Introduction of Japanese cases -
3. Future direction of local seed management for regional development

# Policies and Strategies for Agriculture in Japan

1 . Sustainable food supply

2. Creation of competitive agriculture

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3. Rural promotion and re-vitalization using local  
resources

== Recognition of multi-functions of agriculture  
(not so popular as compared with the past)

# Agricultural biodiversity and regional development

1. Sustainable Development Goal 15 = “LIFE ON LAND,  
→ aims to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

2. Three different levels of biodiversity  
“ecosystem diversity,” “species diversity,” and “diversity within species”

Diversity within species has important function in production sustainability of farming and need to be conserved on farm as well as in gene banks.

# Unique characteristics of seeds as resources

1. The standardized use of biological resources through modernization of farming may have caused a significant reduction in sustainability and resilience.
2. Biodiversity (especially genetic resources) is renewable, and under-utilization will have a negative impact on management. (= Utilization will be the best way to conserve biological diversity.)



# Crop in market, past and present



Through modernization of agriculture, farmers buy seeds from seed companies instead of seed saving and exchange by themselves.

➔ Main cause of loss of indispensable rural resources = diversity of seeds

# Important remarks concerning seeds

1. “If the **seeds** disappear, so could your food....So could you” (by Bent Skovmand)

2. “Soil, water, and genetic resources constitute the foundation upon which agriculture and world food security are based. Of these, the least understood and most undervalued are **plant genetic resources (=Seeds)**. They are also the resource most dependent upon **our care and safeguarding**. And they are perhaps **the most threatened**.”  
(Report on the State of the World’s Plant Genetic Resources for Food and Agriculture (1996: FAO))

# Diversity and meaning of local varieties (of vegetables) farmers developed

1. **Part of lifestyles** as processing methods and recipes are developed to take full advantage of characteristics. (Suge, 1987)
2. Characteristics of crops are never fully understood without **discussing how we eat them**. (Nakao, 1966)
3. Industrialized farming cuts off the chain of “varieties - cultivation techniques – food” or the connection to our culture of life.



# Sustainable agricultural biodiversity management in Japan

Cases	Case objectives	Main actors	Characteristics Points to note	Results
Hiroshima Agricultural Gene Bank	Increasing farmers' income by seed loan	Prefecture, experimental station, extension officers, dietitians, farmers	Utilization of genetic resources for a non-research purpose	Traditional vegetable cultivation, revival of home seed-raising by farmers
Use of Hybrid Seeds Nagano Prefecture	Commercialization and conservation of traditional vegetables	Prefecture, JA, university, extension officers, seed dealers	Management of genetic resources of traditional vegetables by using F1 technology	Increase in sales of vegetables
Project Awa (=millet)	Conservation and use of genetic resources	Multi-faceted Organization (NPO + Local farming enterprise + restaurant)	Community vitalization through conservation	Rural revitalization with local variety conservation
Senior High School Kyoto Prefecture 6/28/2019	Harvesting seeds of traditional vegetables	Farmers, high school, high school students	Link of education and agricultural/rural development	Continuation of seed/development of new ways for utilization

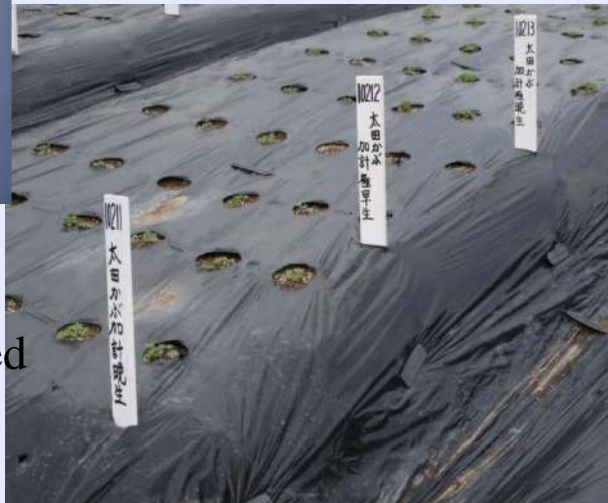
# Case 1

## Hiroshima Agricultural Gene Bank (Local administration)



Mr. Funakoshi, Gene Bank Curator, standing in front of seed refrigerator

Characterization of varieties at the Agricultural Technology Research Center



Restoration of Ota turnip cultivation

# Creative ideas upon implementation of the Seed-Loan Project

- ◆ Releasing characteristic information obtained in the fields of the Research Center
  - ◆ Selecting population or lines required by farmers
  - ◆ Holding workshops connecting food and farming
- ⇒ Selecting lines that have different growing periods in order to develop products to secure market = Extending harvest periods
- ⇒ Held a cooking class using an obsolete variety (Ota turnip) with the theme of “health promotion using vegetables re-created at research station” with an association of dieticians

## Case 2

# Hybrids of Traditional Vegetable Varieties (Nagano Prefecture)

- ◆ 'Certification System for Traditional Variety' program by prefecture government (2005).
    - to maintain varieties and their cultivation methods
    - to promote regional economy through disseminating information on food and culture of the region.
  - ◆ A mechanism of maintaining traditional varieties needs to be established for sustainable use of such local resources.
- Creation of hybrids varieties  
(Securing standardized products acceptable to **market** and **conserving** varieties while respecting **tradition**)



# Local Seed Management and pickles made using traditional recipe





# Involvement of farmers in hybrid creation by farmers



Note: The two photos above are post evaluation of a variety and for image purposes only. Photo© Nemoto

# Total Production of Seinaiji Akane (certified as traditional vegetable of Nagano Pref.)

F1 production  
(Spring and Autumn)

Traditional  
variety  
production  
(Autumn only)

Commercial Pickles  
And  
Liquir  
(Local market)

Fresh Produce  
(Super market in  
urban area)

Domestic use  
And  
Traditional pickles

# Case 3: Project Awa (Project Millet) = multi- faceted



Farmers (production and seed harvest, including introduced varieties)  
NGO (seed storage and research)  
Restaurant (use of product and profit making) (Michelin one star)



# Case 4 A High School Activity (Kyoto Prefectural Katsura Senior High School)



Seed production of  
Kyoyasai at a  
school field

Processing



Storage



Regenerating and storing seeds of 14 Kyoyasai varieties  
Utilization of “Training in Agriculture for Future Farmers Scheme”

# The origin of the concept of “Farmers’ Rights” and its development

- ◆ **International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR-FA):** Nothing in this Article (Article 9) shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate.
- ◆ **The origin:** Plant genetic resources are **a heritage of mankind (the basis of the FAO treaty** = International Undertaking on Plant Genetic Resources (Resolution 8/83)); people in developing countries should be guaranteed access to improved varieties based on the premise that everyone should have access (Reconciliation with excessive protection of breeders’ rights).



# Recent Trend in the World

## ◆ The UN Decade of Family Farming.

The following benefits of family farming were stressed:

- Connected to the world's food security
- Contribution to protection of the environment and biodiversity
- Creation of various employment opportunities in communities

## ◆ The UN Declaration on the Rights of Peasants and Other People Working in Rural Areas

- 'Farmers' Rights' was clearly indicated in article 24.

# Message from Japan's cases

Collaboration among different sector stakeholders for seed management through basically endogenous movement/initiatives  
Technical support from formal research institutes are indispensable.

## Weakness of Japan's case

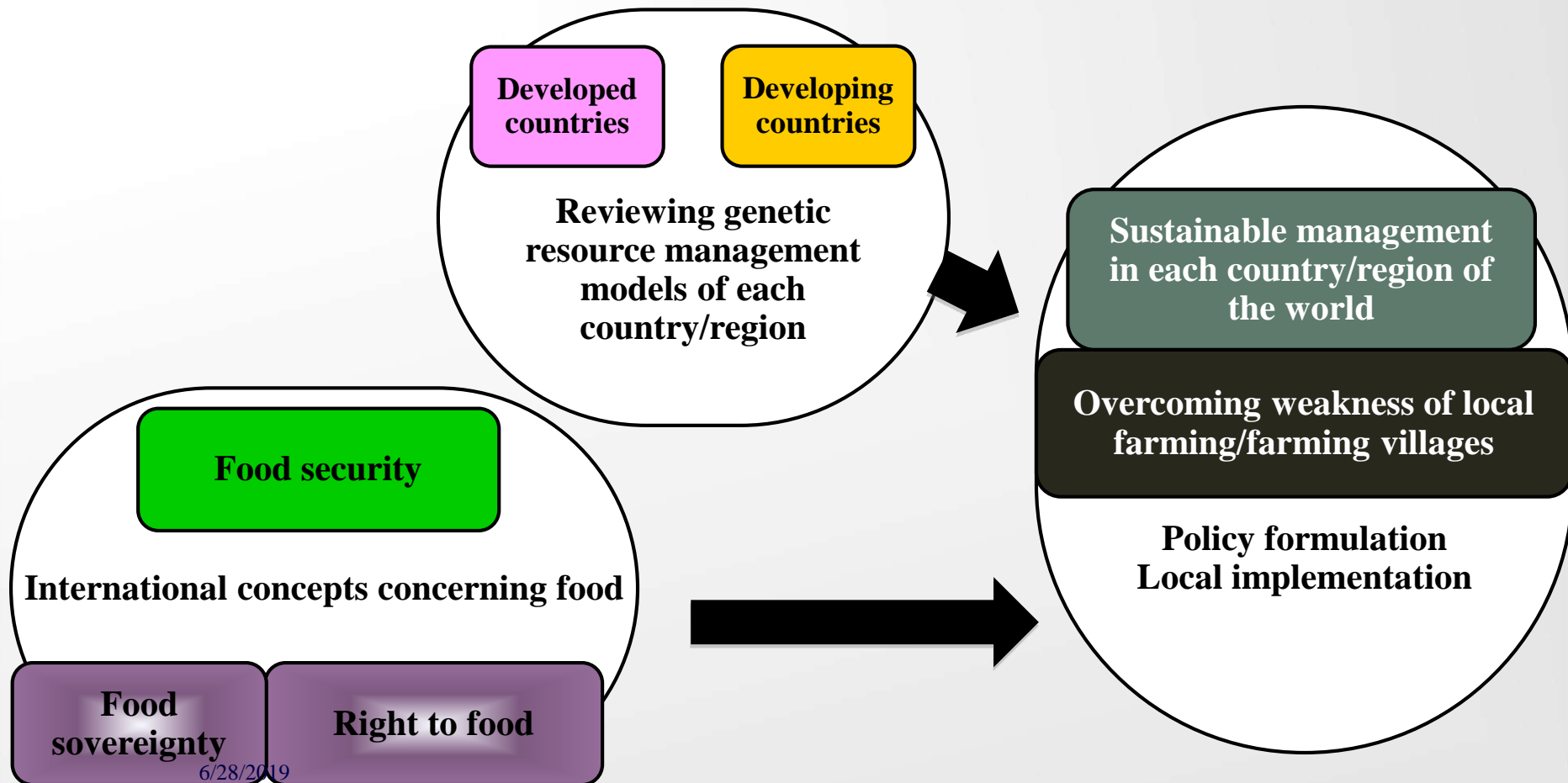
Not coordinated as nation-wide movement in line with international framework such as 'Farmers' rights'

BUT this can be also strength

Pure grass roots activities initiated by farmers, residents, and individual institutions themselves without intervention from outside are rather unique.

If connected with wider stakeholders, it will contribute up-scaling and sustainability.

# Using cases of local seed system utilization for development of new measures for regional development





Thank you.

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