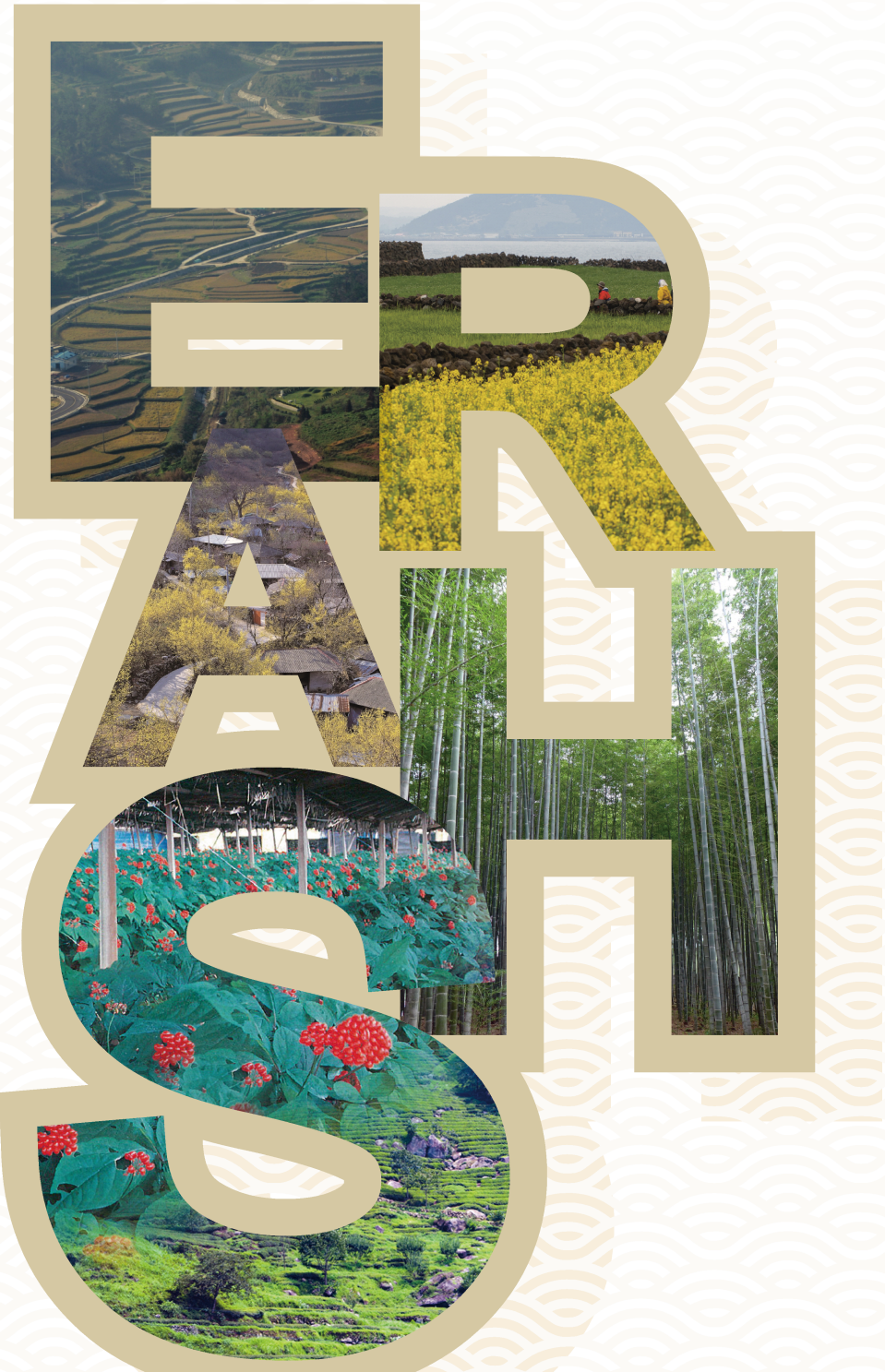
3rd

Conference of East Asia Research Association for Agricultural Heritage System

June 13, 2016 Mon.-
June 16, 2016 Thu.

Geumsan Ginseng Distribution Center



Host | Korea Rural Heritage Association | GEUMSAN | East Asia Research Association for Agricultural Heritage System

Sponsor | Food and Agriculture Organization of the United Nations | Ministry of Agriculture, Food and Rural Affairs | MINISTRY OF OCEANS AND FISHERIES | Korea Rural Community Corporation | Chungcheongnam-do | ChungNam Institute

Conference programme and agenda

Monday, 13 June 2016: Arrival of participants	
10:00 – 22:00	**Registration (Lotte City Hotel in Daejeon city)**
Tuesday, 14 June 2016 : Conference at Guemsan Ginseng Distribution Center	
9:00–09:40 hrs	**Opening Ceremony** • Welcome Address Mr. Park, Dong-chul (Mayor, Gueumsan County) • Greetings from guest Mr. Ahn, Ho-Keun (Director General, Rural Policy Bureau, Ministry of Agriculture, Food and Rural Affairs (MAFRA), KOREA) • Greetings from guest Mr. Huh, Seung-Uk (Vice Governor, Chungcheongnam-do Province) • Greetings from guest Mr. Lee, Sang-Moo (CEO, Korea Rural Community Corporation) • Greetings from guest Mr. Kang, Hyun-Soo (President, ChungNam Institute)
09:40–10:00 hrs	Photo Coffee/tea break
10:00–11:00 hrs	**Keynote address 1** • **GIAHS' Role in Achieving Sustainable Development Goals(SDGs)** Prof. Kazuhiko Takeuchi / Senior Vice-Rector, UNU **Keynote address 2** • **Three Key Mechanisms to Conserve the Important Agricultural Heritage Systems** Prof. Min Qingwen / Institute of Geographic Sciences and Natural Resources Research (IGSNRR), Chinese Academy of Sciences (CAS) **Keynote address 3** • **GIAHS/NIAHS and Rural Regional Development Policy in Korea** Prof. Yoon, Won-Keun & Prof. Choi, Sik-In / KRHA
11:00–12:00 hrs	**Keynote Presentation** 【FAO】 • **Recent Developments and Future Prospects of Globally Important Agricultural Heritage Systems (GIAHS)** Mr. Yoshihide Endo / FAO GIAHS Coordinator

	【Korea】 • **Policy Direction of Korea's Important Agricultural Heritage Systems (KIAHS)** Mr. Kim, Jae-Hak (Deputy Director, Rural Development Division, Ministry of Agriculture, Food and Rural Affairs(MAFRA), KOREA) 【Japan】 • **The Globally Important Agricultural Heritage Systems (GIAHS) In Japan** Mr. Kentaro Morita (Rural Environment Division, Rural Development Bureau, Ministry of Agriculture, Forestry and Fisheries(MAFF), JAPAN)
12:00–13:30 hrs	**Lunch**
13:30–15:15 hrs	**Session I : Research Presentation and Case Presentation** 【Korea】 • **Policy Direction for Korea Important Fisheries Heritage Systems (KIFHS)** Mr. Ahn, Myung-Ho (Deputy Director, Fishing Community and Port Development Division, Ministry of Oceans and Fisheries(MOF), KOREA) • **Agricultural Heritage Value of Forest Resources in Korea** Mr. Im, Young-Suk (Director, Forest Utilization Bureau, Korea Forest Service(KFS), KOREA) 【China】 • **The Investigation of Environmental Changes of the World Heritage Hani Rice Terraces** Mr. Huang, Shaowen (Professor, Honghe University • **The Balance of Categories of Agricultural Heritage Systems** Ms. Liu, Hongying (Professor, China University of Political Science and Law) • **The Evaluation on Ecosystem and Its Ecological Compensation in Honghe Hani Rice Terraces System, Yunnan Province** Mr. Liu, Moucheng (Associate Professor, IGSNRR, CAS) 【Japan】 • **Creating A Collaborative Platform for Agrarian Community Development on Sado Island** Ms. Mitsuyo Toyoda (Professor, Niigata University) • **GIAHS Twinning for Human Capacity Building between Noto's Satoyama Satoumi in Japan and Ifugao Rice Terraces in the Philippines** Mr. Koji Nakamura (Visiting Professor, Kanazawa University)
15:15–15:40 hrs	Coffee/tea break
15:40–18:10 hrs	**Session II: Research Presentation and Case Presentation** 【Korea】 • **A Basic Study on The Establishment of Area of Korea's Agricultural Heritage System** Mr. Baek, Seung-seok (Manager, Korea Rural Community Corporation)

	• **An Analysis of the Characteristics of Agricultural Heritage Components in GIAHS Sites** Mr. Jeong, Myeong-Cheol · Ms. Mun, Hyo-Yun · Ms. Yoon, Soon-Duck (Researcher, National Institute of Agricultural Science, RDA) 【Japan】 • **Conservation of Ayu in the "Nagara River System"** Mr. Yoshinori Muto (Research Specialist, Research Institute for Fisheries and Aquatic Environments) • **Ishikawa's Dynamic Conservation of GIAHS "NOTO's SATOYAMA and SATOUMI"** Mr. Fumikazu Noto (Public officer, Ishikawa Prefecture Agriculture, Forestry and Fisheries Department, Satoyama Promotion Office) • **Strengthening brands of the tea produced by the Chagusaba Farming method to revitalize local communities** Mr. Hideshi Suzuki (Public officer, Office of Tea Industry Development Divis ion, Shizuoka Prefectural Government) 【China】 • **Research on Soil Quality Variation of Forest-Ginseng System in Northeast China** Mr. Liu, Weiwei (Researcher, IGSNRR, CAS) • **"Na" Culture of the Zhuang Nationality: A Case Study of Long-an** Ms. Gong, Tingting (Ph.D Candidate, College of Life and Environmental Science, Minzu University of China) 【Korea】 • **The vascular plants flora of *Cornus officinalis* farmland in Gurye which is designated as National Agricultural and Rural Heritage** Ms. Kim, Jin-won and Prof. Oh, Choong-Hyeon (Dongguk University) • **Application of Story-Doing for Sustainable of Agricultural Heritage** Mr. Kang, Dong-Wan · Mr. Jung, Nam-Su · Mr. You, Hag-yeol (Kongju National University/Chung Nam Institute)
18:20–20:20 hrs	**Welcome Reception**
Wednesday, 15 June 2016: Field Visit	
10:00–12:00 hrs	Ginseng Ritual Performance
12:00–14:00 hrs	**Lunch** Free time at Ginseng wholesale market and Ginseng herbs street
14:00–17:30 hrs	Ginseng processing plant, Ginseng cultivation area, Forest culture town, Farm music performance
18:00–20:00 hrs	**Dinner**

Thursday, 16 June 2016: Conference	
09:00–10:45 hrs	**Session III: Case Presentation** 【Korea】 • **Preserving Characteristic and Value of Gurye Sansuyu Farming** Mr. Yu, Yong Un(Director, Gurye-gun County) • **Traditional Tea AgroSystem and Tea Culture in Hadong Indigenous Tea Habitats** Mr. Yun, Seung Cheol(Director, Hadong-gun County) 【Japan】 • **Minabe-Tanabe Ume System** Mr. Ryota Nakahaya (Public officer, Minabe town) • **Mountainous Agriculture and Forestry System** Mr. Tomonori Tasaki (Public officer, Takachiho town) 【China】 • **Conservation and Development of Fuzhou Jasmine and Tea Culture System** Mr. Wang, Zhenfeng (Deputy Director, Agriculture Bureau of Fuzhou City, Fujian Province) • **Using GIAHS Brand to Promote the Development of Characteristic Industry** Mr. Jiang, Zhengcai (Deputy Chief, People's Government of Congjiang County, Guizhou Province) • **Dynamic Conservation of Agricultural Heritage System by Tourism : Take Qianxi Traditional Chinese Chestnut System as An Example** Ms. Li, Jianxia (Deputy Chief, People's Government of Qianxi County, Hebei Province)
10:45–11:00 hrs	**Coffee/tea break**
11:00–12:15 hrs	**Session IV: Case Presentation** 【China】 • **The Research on the Quebei (Anfeng) Reservoir's Agricultural Heritage Features and Development Status** Ms. Shen, Lin (Professor, Anhui Agricultural University) • **The Concept and Framework of Integration of Industries in Agricultural Heritage Systems Sites: A New Heritage Conservation Way** Mr. Zhang, Yongxun (Ph.D Candidate, IGSNRR, CAS)

	【Korea】 • **KIAHS Geumsan Ginseng Agricultural System** Mr. Kim, Dong -Ki and You, Hag-yeol (Geumsan-gun / ChungNam Institute) • **Jeju Haenyeo Fishery System** Ms. Choa Hye- Kyung and Mr. Kang seung-jin (Jeju Development Institute) • **KIAHS Damyang Bamboo-forest Agricultural System** Ms. Wonhee K. You(RG&E Research Institute)
12:15–12:20 hrs	**Closing remarks** Prof. Yoon Won-Keun, President of Korea Rural Heritage Association (KRHA)
12:20–13:20 hrs	**Lunch**
13:20–15:00 hrs	**The 6th Working Group Meeting of ERAHS**

Special Session : Research Presentation (only in English) & Discussion

09:00–12:00 hrs	**Theme : Monitoring of the AHS** 【Korea】 • **Monitoring and Evaluation of Korea's Important Agricultural Heritage Systems(KIAHS) in Korea** Mr. Park, Yoon ho(Deputy Director, Korea Rural Community Corporation) 【Japan】 • **The monitoring by the expert was important to make Kunisaki Peninsula a Usa GIAHS action plan a more effective plan** Mr. Hiroaki Hayashi (Chairman, Council for the Promotion of GIAHS in K unisaki Peninsula Usa) • **Comparative Study on Conservation of Agricultural Heritage Systems among China, Japan and Korea** Mr. Akira Nagata (Senior Programme Coordinator, United Nations University I nstitute for the Advanced Study of Sustainability (UNU-IAS)) • **Monitoring and Evaluation Method for Biodiversity Conservation and Sustainable Use through Multi-stakeholders Governance** Ms. Evonne Yiu (Research Associate, United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS))

	【China】 • **Monitoring and Evaluation of Globally Important Agricultural Heritage Systems (GIAHS) in China** Ms. Jiao, Wenjun (Assistant Professor, IGSNRR, CAS) • **Ecological Benefit Evaluation of Agricultural Heritage System Conservation: A Case Study of Qingtian Rice-fish Culture System** Mr. Wang, Bin (Associate Professor, Research Institute of Subtropical Forestry, Chinese Academy of Forestry) • **Discussion on GIAHS Tourism and Its Monitor** Ms. Sun, Yehong (Associate Professor, Tourism College of Beijing Union University) 【Discussion】 Chairman : Prof. Kim, Sun-Joo (Kunkuk University)

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1. Keynote address

1.1 GIAHS' Role in Achieving Sustainable Development Goals(SDGs)
· Prof. Kazuhiko Takeuchi / Senior Vice-Rector, UNU

1.2 Three Key Mechanisms to Conserve the Important Agricultural Heritage Systems
· Prof. Min Qingwen / Institute of Geographic Sciences and Natural Resources Research (IGSNRR), Chinese Academy of Sciences (CAS)

1.3 GIAHS/NIAHS and Rural Regional Development Policy in Korea
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Special Session : Monitoring of the AHS

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· Ms. Sun, Yehong (Associate Professor, Tourism College of Beijing Union University)

Keynote address 1.1

『GIAHS' Role in Achieving Sustainable Development Goals(SDGs)』

· Prof. Kazuhiko Takeuchi / Senior Vice-Rector, UNU

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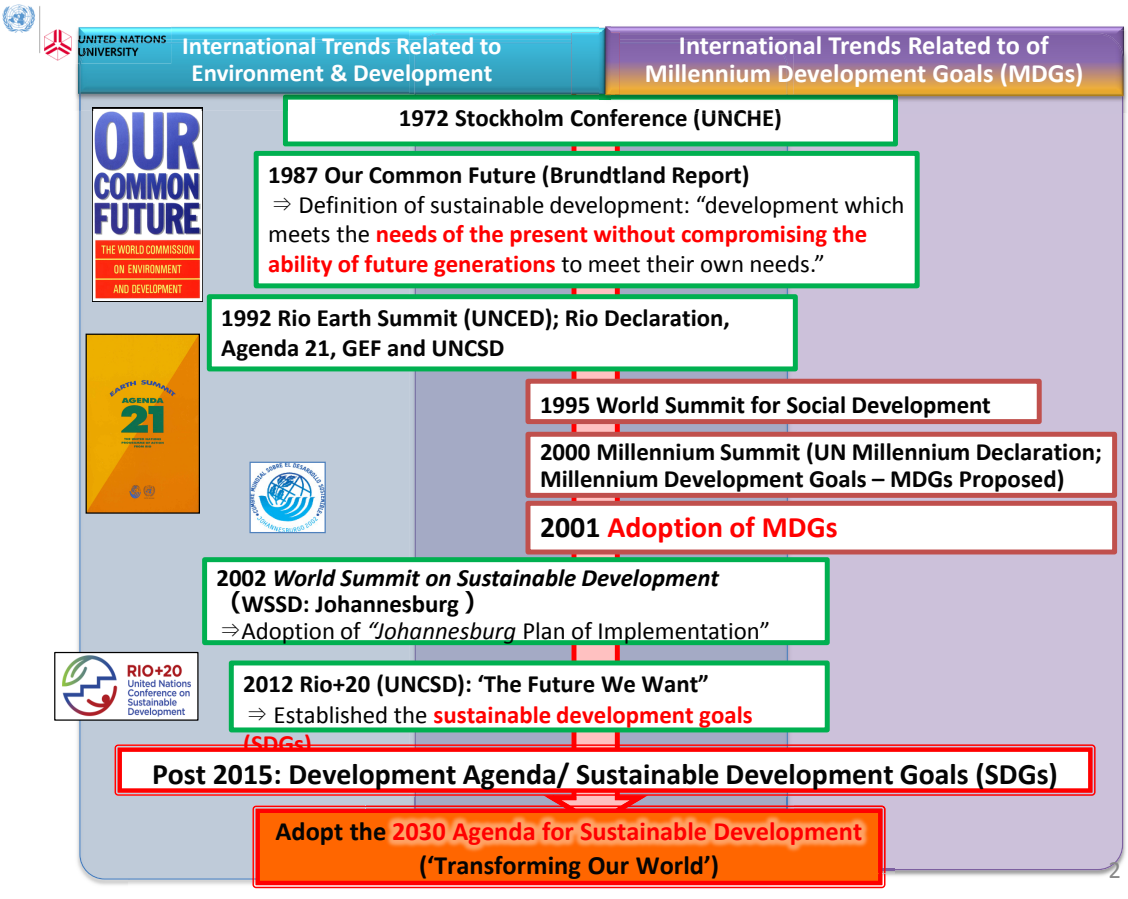
The Third Conference of East Asia Research Association for Agricultural Heritage Systems (ERAHS),
13 -16 June 2016, Guemsan County, Chungcheongnam-do Province, Korea

GIAHS' Role in Achieving Sustainable Development Goals(SDGs)

GIAHS Globally Important Agricultural Heritage Systems X SUSTAINABLE DEVELOPMENT GOALS

Prof. Takeuchi Kazuhiko

Senior Vice-Rector, United Nations University



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Evaluation of MDGs

Positive	Negative
Contents: ☐ Improvement in poverty eradication, facilitate development assistance, multi-stakeholder participation (UNGA 2011a; UNDP 2011) **Goal setting:** ☐ Create linkage between sectors (Vandermoortele 2011) ☐ Clear and Comprehensive goal setting **Institutions:** ☐ Result-base management **Finance:** ☐ Increase ODA, prioritize poverty eradication in development policies (Moss 2010; Pollard et al. 2010; Manning 2010; Verdermoortele 2011)	☐ Some MDGs are not expected to reach the goal (lack of concreteness and comprehensiveness) → enhance effectiveness ☐ "One size fits all" nature of the goals → Gaps between countries and regions (Verdenmoortele 2011) ☐ Lack of linkage between goals and lack of roadmaps after achieving the target 

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What are Sustainable Development Goals (SDGs)?

- For post MDGs (8 goals), a shift from developing countries oriented goals to the Sustainable Development Goals (SDGs, 17 goals and 169 targets) that encompass common global issues shared by the international community, emphasizing on universality
- SDGs, adopted in Sep 2015 by UN member states, cover a wide range of sustainability issues including ending of poverty and hunger, improvement of health and education, enhancing sustainability of cities, dealing with climate change, conservation of ocean and forest etc.
- Key 5 elements (or "**5Ps**")to achieve SDGs are people, planet, prosperity, peace and partnership
- More people-centred, planet-sensitive and adopts a holistic approach stressing on the measurability of progress and impacts
- Sustainable development is supported by environmental, social and economical aspects, and is established through striking a balance in achieving environmental protection, economic growth and social equity



The 5 Ps elements to achieve SDGs



Sustainable Development

4

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5

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SDGs: 17 Goals and 169 Targets for 2030

Pros

- Inclusiveness: "No one will be left behind"
- Universality: apply both for developed and developing countries
- Diversity: targets could be set at national level (guided by global ambition), indicators could be complemented at regional/national levels
- Integration: Economic, Social and Environmental dimensions
- Address concrete behaviors



Cons

- Too many goals and targets (i.e. Economist Mar 28)
- Not "easy to understand"
- May take resources out from not-listed areas
- Low level of concern in developed countries
- Non legally binding





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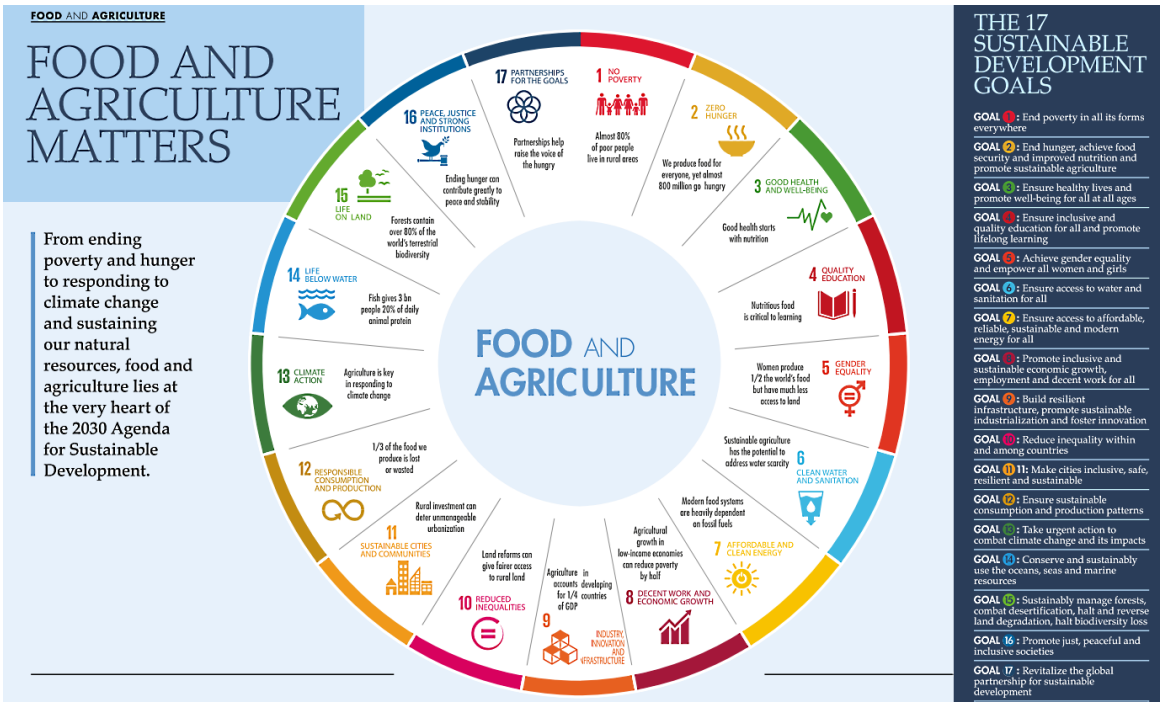
Food & Agriculture in SDGs



Source: FAO(2016) "Food and Agriculture: Key to Achieving the 2030 Agenda for Sustainable Development"

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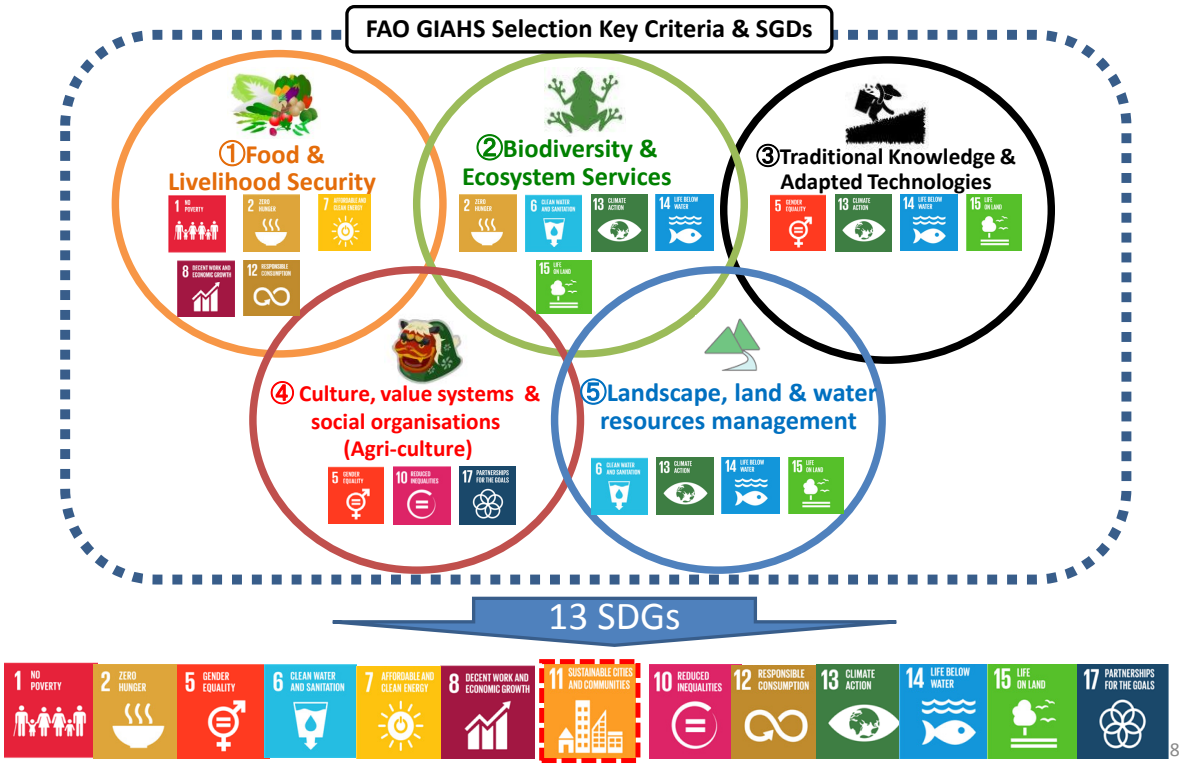
Globally Important Agricultural Heritage Systems (GIAHS) and SDGs



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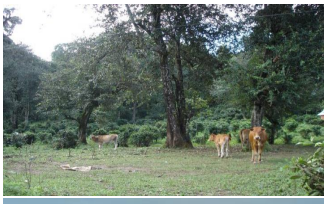
GIAHS contributing to SDGs

Food Security, Sustainable Agriculture



Pu'er Traditional Tea Agrosystem, (China) :

Ancient tea forests preserves the complete process of vertical evolution of ancient magnolias and tea trees under traditional forest tea garden management and diverse agricultural species grown enriches agricultural biodiversity and associated biodiversity.

Climate Change Impacts & Actions



Kuttanad Below Sea Level Farming (India) :

Integrated system of rice paddies in wetlands below sea level, coconut gardens and inland fishing; provide hints on adaptive measures to deal with rising sea level impacts caused by climate change pressures.

Sustainable use of oceans, seas & marine resources



The Ayu of Nagara River System (Japan) :

The pristine Nagara River that runs through the site's densely populated urban areas boasts an abundance of clear, high quality water conserved by the efforts of fishermen and local people so as to nurture a healthy marine ecosystem that sustains its thriving inland fisheries.

Forests, Desertification & Biodiversity



Traditional Gudeuljang Irrigated rice terraces in Cheongsando (Korea) :

The gaps between the stones of the Gudeuljang rice terraces houses a variety of amphibians and reptiles including the endangered longtail tadpole shrimp, which also supports the food chain and biodiversity of its terrestrial ecosystem.

Fostering GIAHS' role in achieving of SDGs

Local

- **Promote awareness of SDGs and GIAHS' role in achieving SDGs**
- **Regular monitoring and evaluation of status of GIAHS conservation**

National

- **Mainstream GIAHS into national policies**
- **Emphasis of GIAHS' potential in contributing to national strategies and targets in achieving SDGs**

Regional

- **Enhance regional cooperation in capacity building such as through twinning of GIAHS sites**
- **Conduct joint research to explore GIAHS' role in achieving SDGs**
- **ERAHS member countries could consider proposing a joint framework on how GIAHS can contribute to SDGs**

Global

- **Report and promote GIAHS' contributions at international fora such as GIAHS International Forum, CBD Conferences and other SDGs related platforms**

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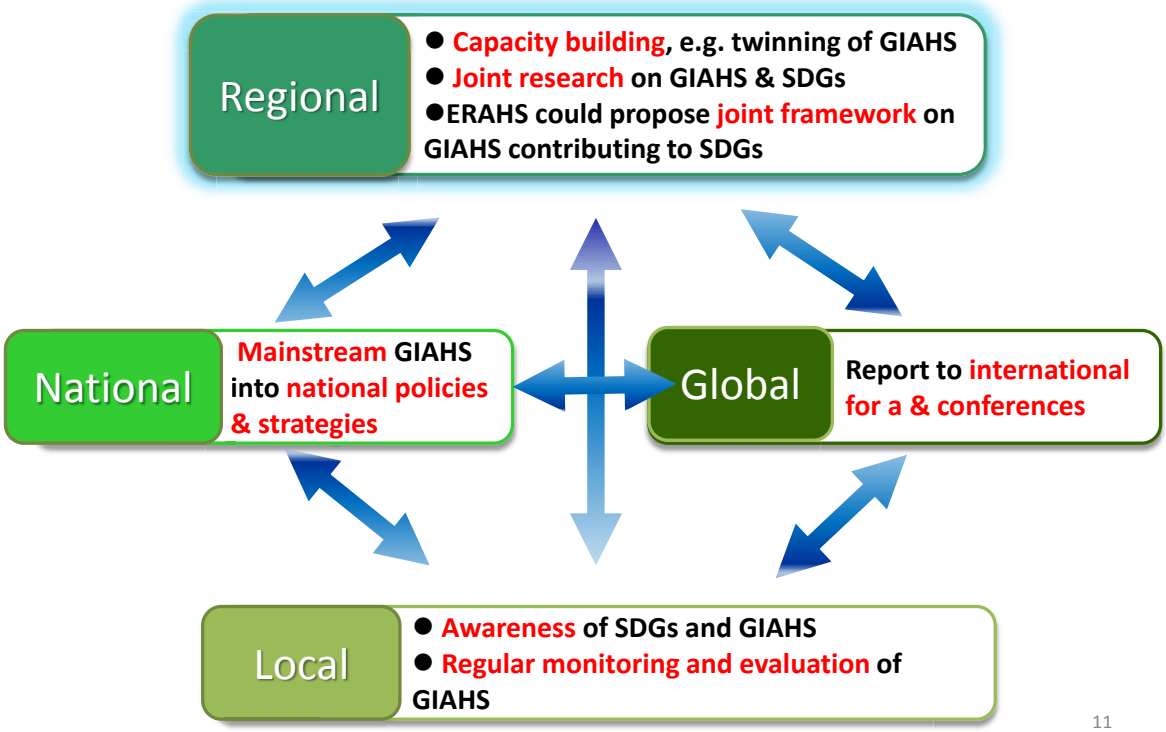
Fostering GIAHS' role in achieving of SDGs



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Keynote address 1.2

『Three Key Mechanisms to Conserve the Important Agricultural Heritage Systems』

· Prof. Min Qingwen / Institute of Geographic Sciences and Natural Resources Research (IGSNRR), Chinese Academy of Sciences (CAS)

Three Key Mechanisms to Conserve the Important Agricultural Heritage Systems

Prof. Dr. Min Qingwen
CAS-IGSNRR-CNACH



GIAHS
Globally Important Agricultural Heritage Systems



- **Historical Review: Decade of Grinding Sword**
- **IAHS: A New Kind of "Heritage"**
- **Dynamic Conservation: Three Key Mechanisms**



GIAHS
Globally Important Agricultural Heritage Systems



- In 2005, Qingtian Rice-Fish Culture System was designated as the first GIAHS pilot site in China.





- In 2012, China-NIAHS program was launched officially.



农 业 部 文 件

农企发〔2012〕4 号

农业部关于开展中国重要农业文化遗产发掘工作的通知

各省、自治区、直辖市及计划单列市休闲农业行政管理部门，新疆生产建设兵团农业局：

我国悠久灿烂的农耕文化历史，加上不同地区自然与人文的巨大差异，创造了种类繁多、特色明显、经济与生态价值高度统一的重要农业文化遗产。这些都是我国劳动人民凭借着独特而多样的自然条件和他们的勤劳与智慧，创造出的农业文化典范，蕴含着天人合一的哲学思想，具有较高历史文化价值。但是，在经济快速发展、城镇化加快推进和现代技术应用的过程中，由于缺乏系统有效的保护，一些重要农业文化遗产正面临着被破坏、被遗忘、被抛弃的危险。为加强我国重要农业文化遗产的挖掘、保护、传承和利

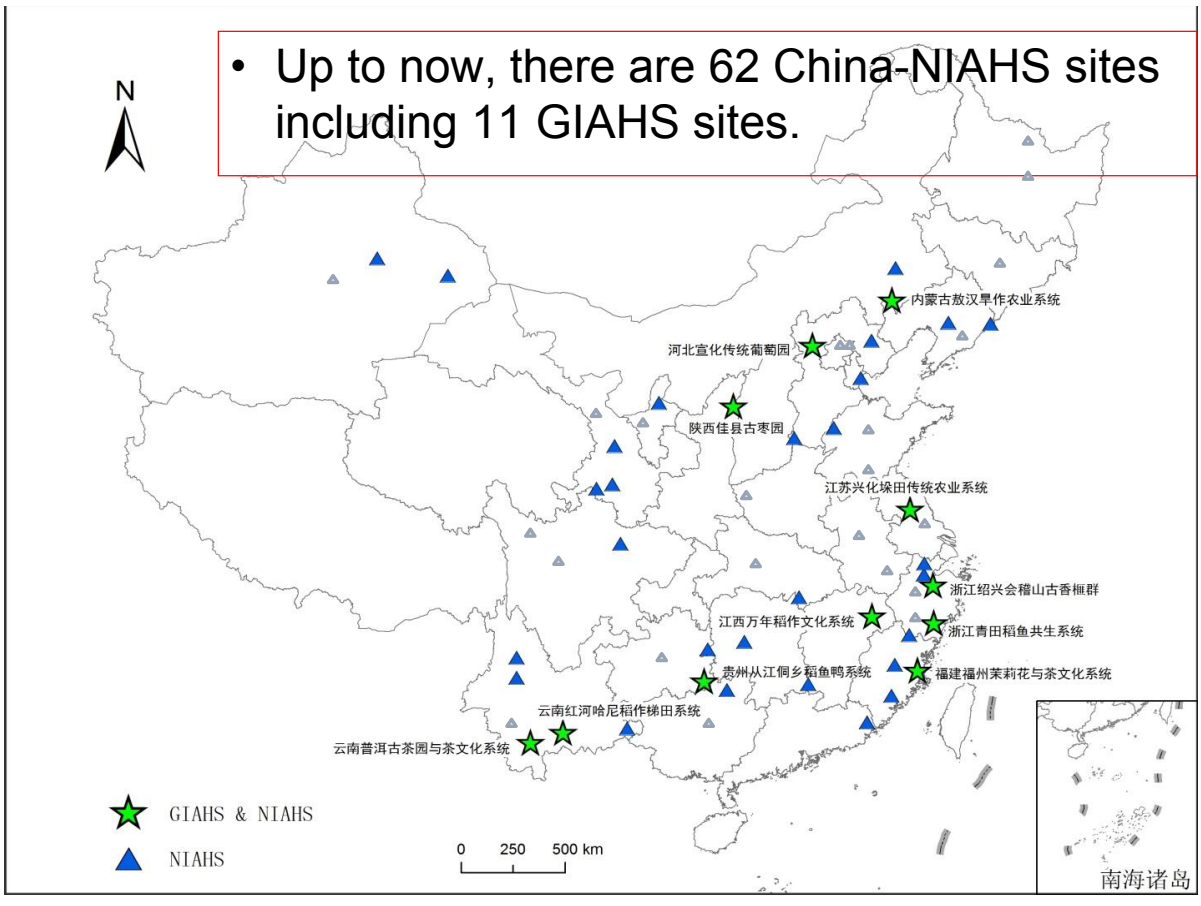
— 1 —

- In 2015, FAO/GEF-GIAHS Project China Pilot Summary Meeting and Ten-Year Anniversary of Qingtian RFC Designated as GIAHS Site was held in Qingtian.





- Up to now, there are 62 China-NIAHS sites including 11 GIAHS sites.



Conserving GIAHS/NIAHS is ——



- One of the important contents to inherit and promote traditional Chinese cultures;
- One of the effective measures to fill in gaps in natural and cultural heritage conservation;
- One of the basic requirements to promote sustainable agricultural development; and
- One of the effective approaches to promote farmers' employment and income.

G20 Agricultural Ministers Meeting Communiqué

We support efforts made by the international community to exchange experiences, share knowledge and adopt technology for sustainable agricultural development, and replicate best farming practices conducive to the protection and appropriate utilization of land, forests and water resources. We welcome efforts to extend models as appropriate for the conservation and sustainable use of biodiversity, including inheriting and developing good farming practices, such as the FAO's Globally Important Agricultural Heritage Systems(GIAHS) initiative.



FAO Director-General visits GIAHS site in Zhejiang

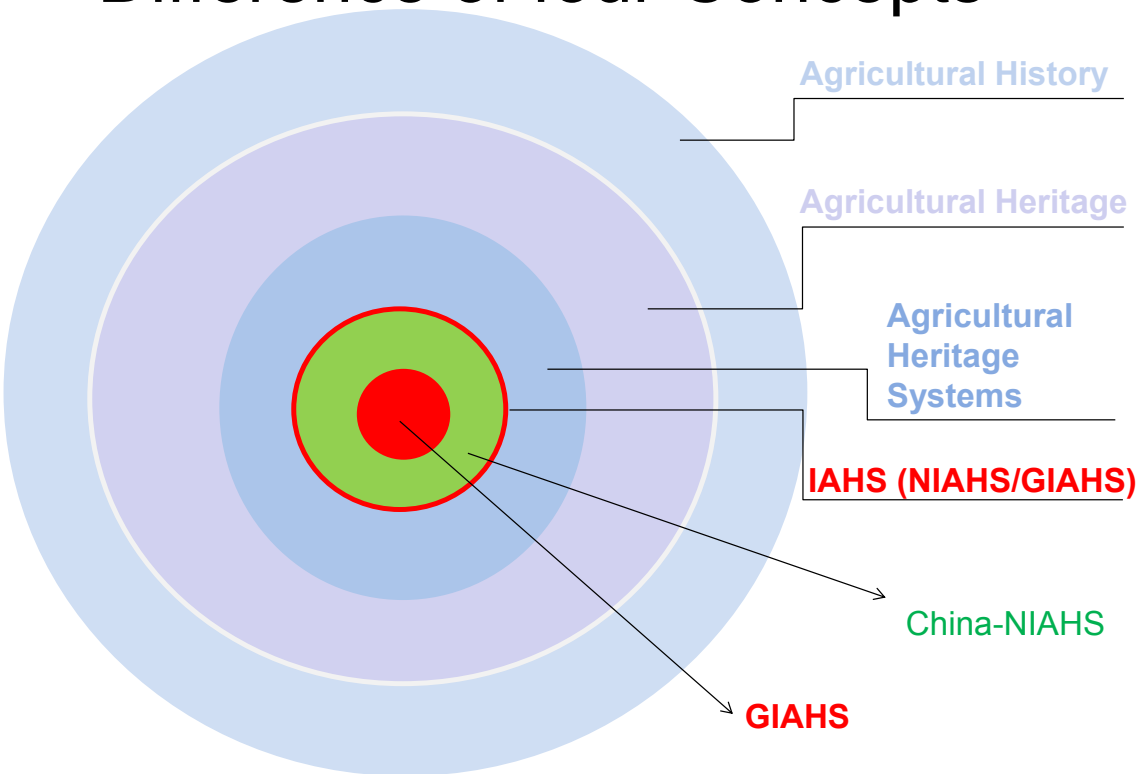
- José Graziano da Silva, DG of UNFAO, made a study tour to Qingtian Rice-Fish Culture System, the first GIAHS site in China, on June 5, 2016.
- Graziano spoke highly of the long history and scientific value of traditional Chinese farming culture, highlighting its significant role in promoting sustainable agricultural development, rejuvenating rural area and increasing farmer's income.



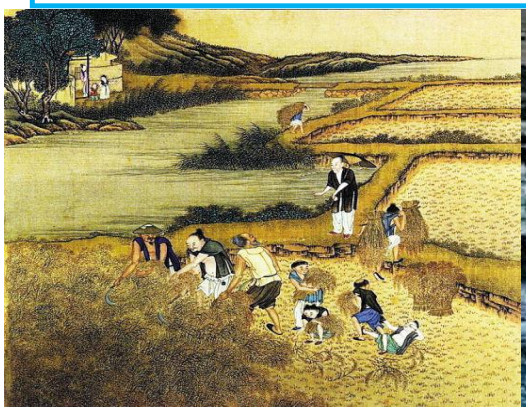
- **Historical Review: Decade of Grinding Sword**
- **IAHS: A New Kind of "Heritage"**
- **Dynamic Conservation: Three Key Mechanisms**

GIAHS
Globally Important Agricultural Heritage Systems

Difference of four Concepts



- **Agricultural History:** Agricultural production activities and creations in historic period.
- **Agricultural Heritage:** The creations rooted from historic agricultural production activities and have been reserved tangibly and/or intangibly up to now.





- **Agricultural Heritage Systems (Agricultural Heritage):** The traditional agricultural system which were created from historic agricultural production activities, have been reserved tangibly and/or intangibly up to now and have important economic, ecological and socio-cultural functions.

- **Important Agricultural Heritage Systems (IAHS):** The traditional agricultural systems designated as GIAHS by FAO and/or China-NIAHS sites by MOA.

GIAHS
Globally Important Agricultural Heritage Systems

- GIAHS: Remarkable land use systems and landscapes, which are rich in globally significant biological diversity evolving from the co-adaptation of a rural community with its environment and its needs and aspirations for sustainable development.



- GIAHS, evolving and changing over millennia, are a global heritage to preserve and nurture
- GIAHS reflect the co-evolution of humanity and culture with the ecological processes of their environment.
- GIAHS exemplify the convergence of biological diversity, socio-cultural diversity and centres of origin of domesticated plant and animal species.
- Their diversity is a major resource for food security, poverty alleviation and the global environment.



GIAHS
is not about the past
GIAHS is about the future

- **Historical Review: Decade of Grinding Sword**
- **IAHS: A New Kind of "Heritage"**
- **Dynamic Conservation: Three Key Mechanisms**

GIAHS
Globally Important Agricultural Heritage Systems

Six Main Features of IAHS

- Living（活态性）
- Adaptive（适应性）
- Complex（复合性）
- Strategic（战略性）
- Multi-functional（多功能性）
- Endangered（濒危性）



Aims to Conserve IAHS

- Promoting the sustainable development of heritage sites, especially those ecologically fragile, economically undeveloped but culturally rich areas,
- Improving the livelihood security and social welfare of local residents, and
- Providing references for the development of modern agriculture in China.

General principles——

- Conservation in priority and appropriate use
- Overall conservation and coordinated development
- Active conservation and function extension
- Dynamic conservation and adaptive management
- *In Situ* conservation and demonstration and extension
- Multi participation and benefit sharing

- **Holistic**
- **Vivid**
- **Dynamic**
- **Sharing**

Dynamic adaptation of living and evolving agricultural systems

- Conservation without fossilisation.
- Strengthening "what is there": the human management systems and cultures that underpin the sustainability and resilience of GIAHS.
- Creating better policy and regulatory environments and incentive structures at all levels.
- Improving peoples' livelihoods and viability.

Three Mechanisms——

- Policy Incentive Mechanism（政策激励机制）;
- Multi-Stakeholders Participation Mechanism（多方参与机制）;
- Industrial Promoting Mechanism（产业促进机制）.

(1) Policy Incentive Mechanism

Reexamine IAHS:

- **Practical dilemma:** Poor traffic conditions, fragile ecological environment, backward production infrastructure, high labor intensity, low comparative benefits, and heavy anti-poverty task
- **Three key tasks:** ecological conservation, cultural inheritance and economic development .

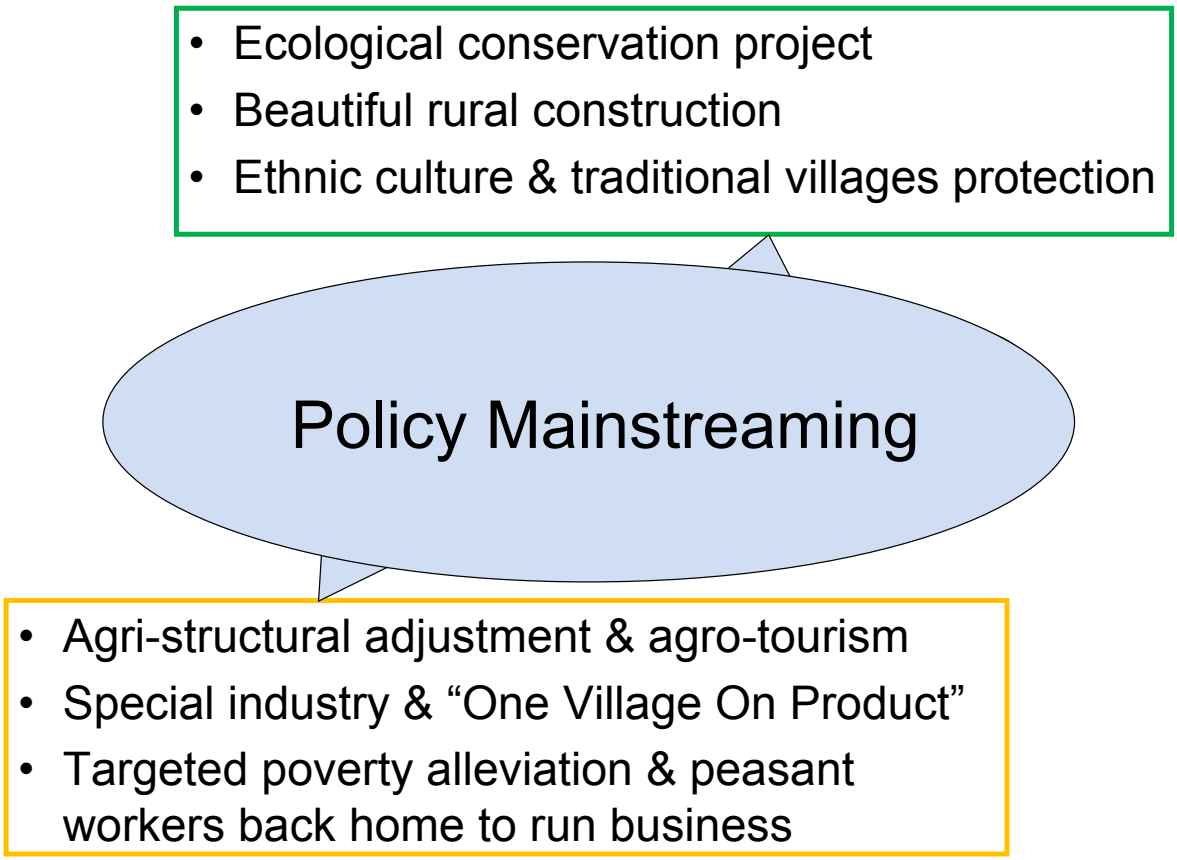
- Less developed areas（落后地区）
- Poverty groups（贫困群体）
- Disadvantaged industry（弱势产业）

- **Three key tasks:** ecological conservation, cultural inheritance and economic development.

- Abundant (agri-)biodiversity
- Important Ecological Function Areas
- Wonderful agroecological landscape

Eco-Cultural Compensation

- Remarkable rural cultural landscape
- Ingenious traditional cultural knowledge
- Unique traditional farming technology



(2) Multi-Stakeholders Participation Mechanism

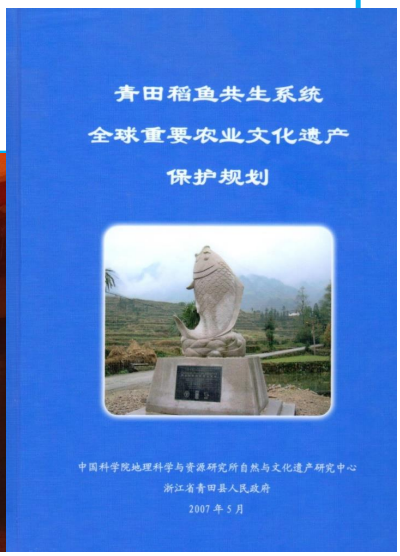
The Five-in-One Model:

- Governments (Central & local, different sectors);
- Multi-disciplinary Scientists (ecologists, agronomists, economists, historians, planners, managers, …);
- Local communities &Farmers;
- Enterprises; and
- Social aspects (Media, educators, citizens, NGOs)

Government leading——

- Central, provincial and local
- Agricultural department as the main body
- Related sectors to cooperate
- Special policies





Scientist supporting——

- Multi-disciplinary Scientists (ecologists, agronomists, economists, historians, planners, managers,…)
- Synthetic research (Evaluation of ecosystem services, resilience and sustainability; Local farmers' attitude; Dynamic conservation theory and best practices; …);
- Expert-guided conservation and development;
- Academic exchange and experiences sharing.



Enterprise promotion——

- Agriculture products processing
- Food processing
- Tourism
- Consulting



Community participation——

- Villagers' cooperation
- Specialized cooperation
- Family farm
- Agritainment







Society joining——

- Media
- Citizens
- NGOs
- Young volunteers…





(3)Industrial Promoting Mechanism

Resources viewing from industrial development

- Favourable eco-environment and landscape
- Strong national culture
- Good quality of agri-products
- Plenty of biological resources
- Relative surplus labor forces
- Exquisite traditional skills







- To create the GIAHS-brand of different products (functional agri-products, distinctive agri-products, special tourism routes, tourist souvenirs)
- To develop the high-end market
- To absorb more labors
- To increase farmers' income






Thank you for your Attention

Keynote address 1.3

『GIAHS/NIAHS and Rural Regional Development Policy in Korea』

· Prof. Yoon, Won-Keun & Prof. Choi, Sik-In / KRHA

GIAHS/NIAHS and Rural Development Policy in Korea

Yoon , Won Keun & Choi, Sik In
(Hyupsung University)

Contents

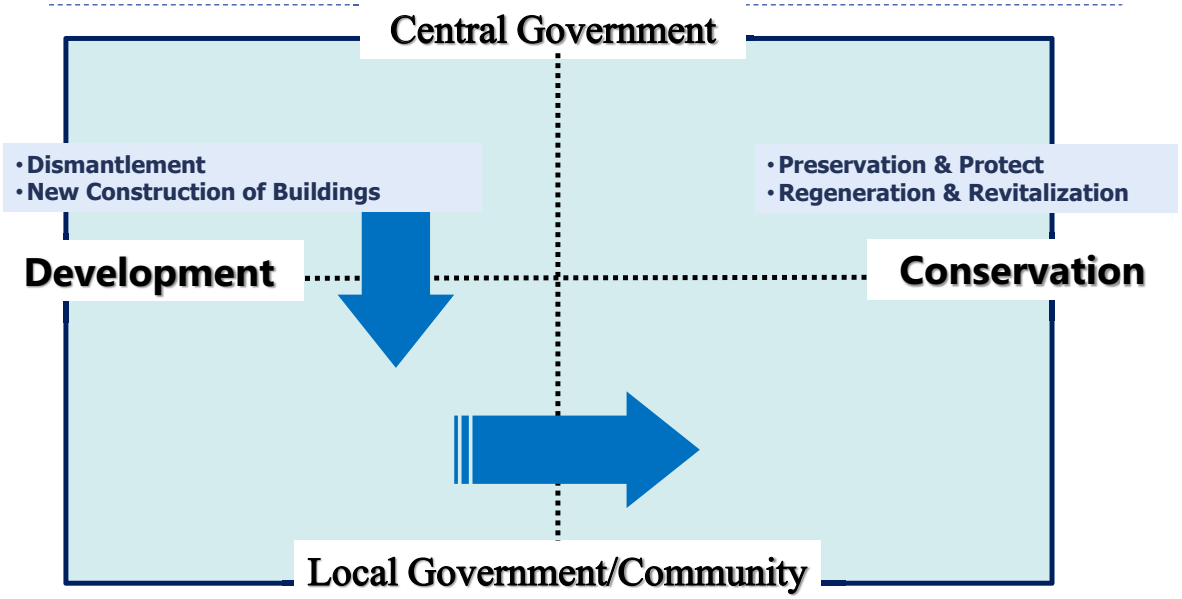
1 Backgrounds
2 Review of Rural Development Policy
3 Issues of Rural Development
4 Challenges of Rural Development Policy
5 Expected Effects & Conclusion

Backgrounds

- **The trend of Rural development Policy was mainly oriented to economic growth over the past 50 years.**
  - There are positive effects and negative effects.
  - The negative effect became constraint factors for leading new style of development.

- **It is necessary to shift paradigm of rural development policy in order to reduce negative effects and start new rural development strategies.**
  - It is crucial to draw new rural policy accepting value of agricultural heritage systems which was introduced in Korea.

Conservation -Oriented Rural Development



Rural Policy should be oriented to community participation and Conservation

Review of Rural Development Policy

1960's of Rural Development

- Increasing Food Production

1970's~ Middle of 1980's

- *'Saemaeul'* Movement (New Community Movement)

Late 1980's ~ Early 2000's

- Improving rural living conditions

After that(from middle of 2000's)

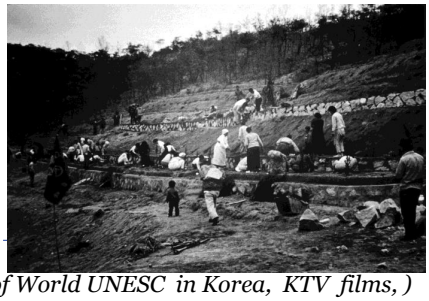
- Improving quality of community's life
- Finding & Utilizing of rural resources

Example : 'SAEMAUL' Movement

❖The New Community Movement

- Government strongly led the movement
- All rural community engaged in the movement
- Integrated Rural Development
  - ➢ Food Productivity
  - ➢ Village Infrastructure
  - ➢ Work Ethics

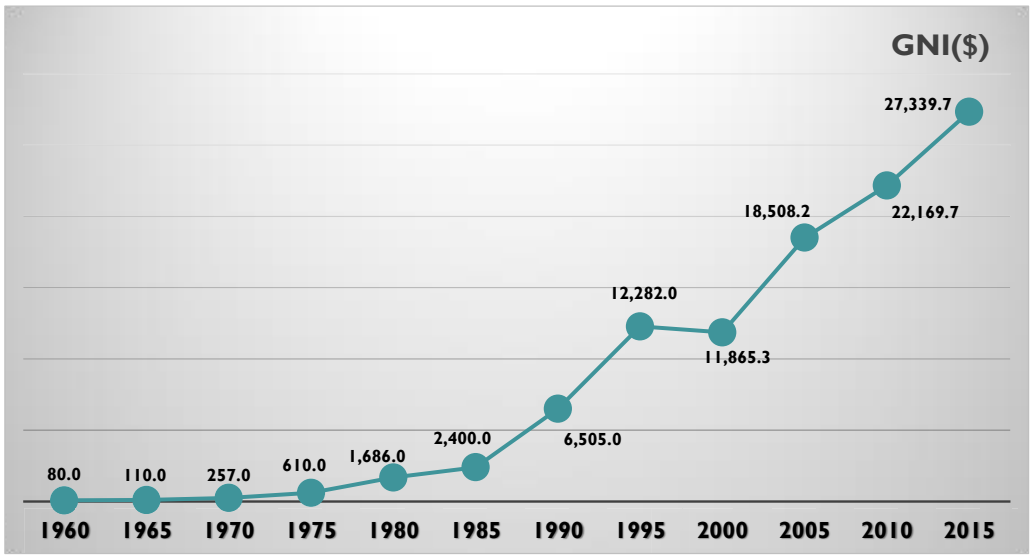




(*source: The Memory of World UNESC in Korea, KTV films,*)

Achievement 1. Income Increase

❖ Increase of National Income



Achievement 2. Improving Living Environment

❖ 1960's Housing Facilities



Rate of Household Utilizing Village Well and Common Tap: 81.2%



Rate of House equipped with flush toilets: 0.1%

Achievement 2. Improving Living Environment

❖ 2010's Rural Housing Facilities



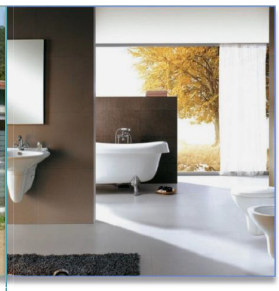
Rate of house equipped with modern style of kitchen : 96.9%



Use Rate of Water Supply Systems : 84.4%



Use Rate of flush Toilet: : 85.6%



Rate of House equipped with bathing facilities : 96.2%

(*source:KREI, 2015)*

Achievement 2. Improving Living Environment

❖ Recent Living Environment



Strengthen the linkage between Center and rural areas: improving the accessib ility of cultural, welfare, and medical fa cilities.



Most villagers can be accessible to various kind of facilities (Approx. 60min)

Achievement 3. Rural Resources Utilization

❖Agricultural sector put in a difficult situation due to FTA

❖Rural resources utilization was based on rural development

- Rural Tourism (Green Tourism) : Experiencing Rural Area & Life
- Use of Rural Amenities Resource
- 6th Agricultural Industrialization

But, it is still focused on raising rural income and establishing the infrastructure of settlement environment.

Issues of Rural Development

❖Reckless Development

Reckless Development



Accommodation



Plant(Factory)



Livestock Facilities



Source : Green Korea's report (2014.04.16.), Green Korea's report(2006.07.24.), UDI(2010.10.29.),Joongwon News(2014.04.15.)

Issues of Rural Development

❖ Development Approach Regardless of Agricultural Heritages

River Improvement



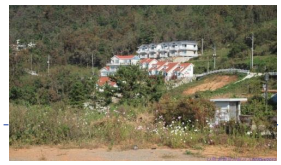
Facilities related Rural Tourism



Increase of Fallow Ground









Issues of Rural Development

❖ Destruction of Traditional Houses

- Ruined 99% of traditional houses for about 30~40 years
- French geologist, *Valerie Gelezeau* called Korea as "Giant city of apartment' in her book, 「Séoul, ville géante, cités radieuses」





Issues of Rural Development

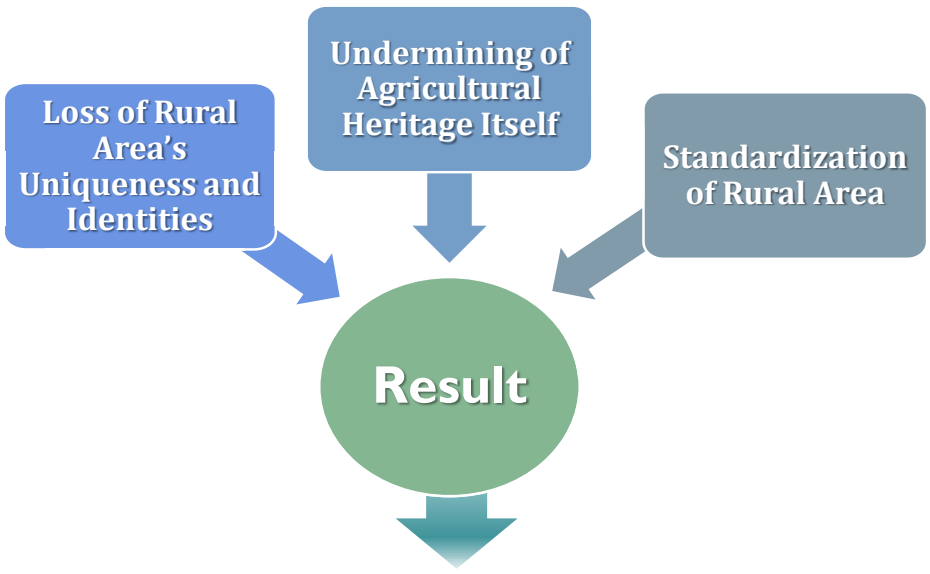
❖Change of Spatial Structure in a Rural Area

- **Destruction of traditional elements like brick(stone) wall, rural village forest.**
- **Demolition of traditional shamanistic space like village shrine *(Seonghwangdang)***


source: http://madre.kr/46


source: http://manistoxbistory.com/page

Issues of Rural Development



Direction of New Rural Policy

❖Strengthen Linkage Between Agricultural Heritages and Rural Policy

❖Pursuit Conservation Oriented Approach of Rural Development Policy



Set up New Goals, Approach, and Strategies

Directions of New Rural Policy

Goals

- Agricultural Heritages' Value-Oriented Development

New Approaches

- Improvement of Competitiveness of Rural Area(in terms of landscape & ecology)
- Enhancement of Empowerment of Rural Residents(in terms of residents' capabilities, transmission of traditional culture and information system)

Practical Strategies

- Expansion of Rural Development Area
- Local Governance(Local People, Governor, Enterprise etc.)
- Expansion of Agricultural Heritage Systems Designated by Local Government
- Development of Preserve & Use Model(e.g. Eco-museum)
- Establishing Land Use Planning System of Rural Area

Example of Policy ❶ Restoration of Storks, *YESAN* : Recognizing of Importance of Biodiversity



The Extinction of Oriental Stork(1971)



Released into Nature(2015)



Laid eggs in Nature(2016.04)

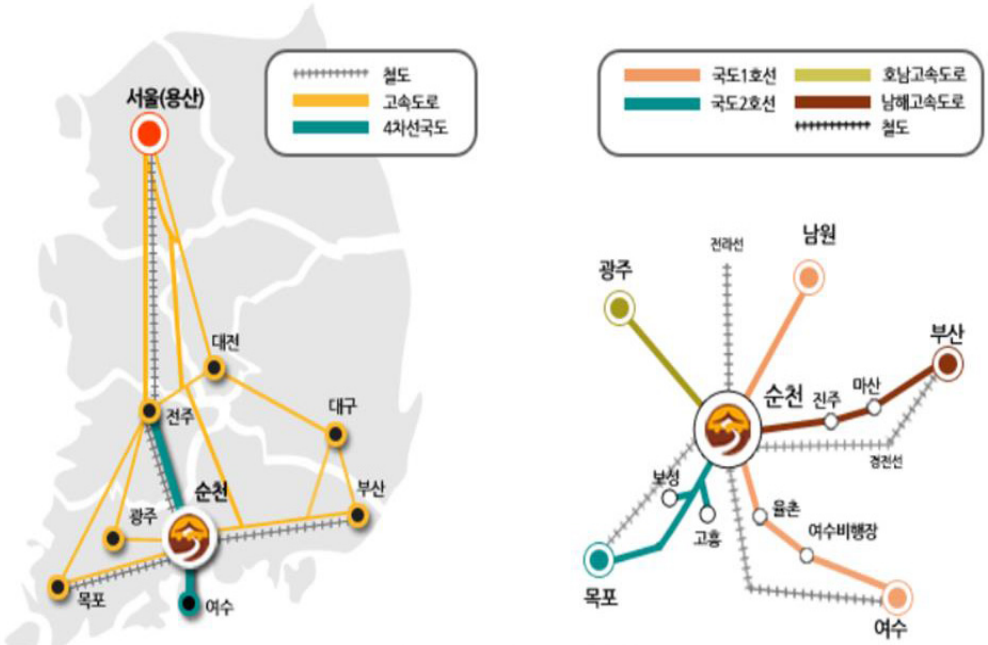


Succeed in hatching in Nature(2016.05.23)

Example of Policy ❷ : Restoration of Habitat for a white-Naped Crane, *KIMPO (2016)*



A Growth Example : '*SUNCHEON*'



- From Seoul to Sunchon : 320㎞
- About 3hr20mins by KTX

Source: Suncheon Bay National Garden

A Growth Example : '*SUNCHEON*'

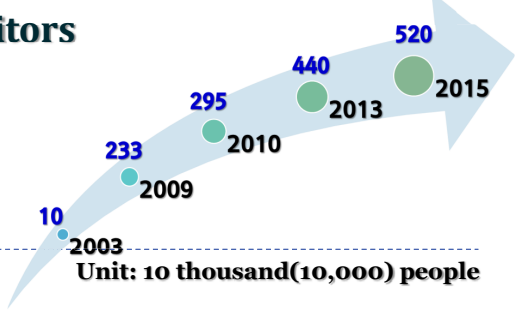
❖Reverse the Trend of Development

- *'Suncheon'* became a good growth example through conservation instead of development.

❖ Direct and Indirect Effects on the Region

- An indirect effect on regional economy: Annually 120 billion won/year
- Population Growth: 10,000 people(for the last 6 years)
- Increase of the number of visitors
  - 100 thousand people(2003)
  - 5.2million people(2015)

Resource: The Korea Economic Daily(2015.05.03)



A Growth Example : '*SUNCHEON*'

Korea's Ecological Capital, *SUNCHEON*

The Harmony of Sea, Tideflat(mudflat), Reeds , and Garden





A Growth Example : '*SUNCHEON*'





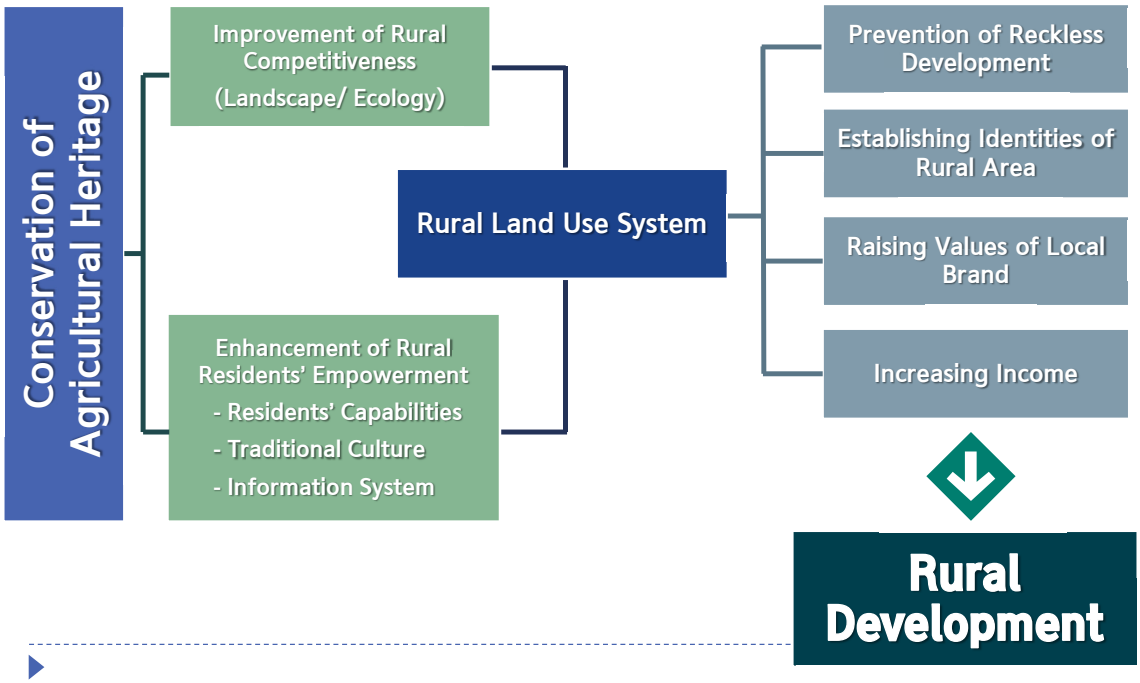




Expected Effects

- ❖ Establishing identity of Korea's rural area based on the concept of Agricultural Heritage
- ❖ Growth through conservation
- ❖ Eliminating the dysfunction resulted from development oriented policy
- ❖ Join '*Sustainable Development*' movement : Prevention of global warming

Conservation of Agricultural Heritage



Conclusion

- ‘*Conservation*’ can lead new growth of the rural area.

- I think it is time to attempt new growth based on ‘Conservation’, rather than ‘Destruction’.

Thank You !

Keynote Presentation 2.1

『Recent Developments and Future Prospects of Globally Important Agricultural Heritage Systems (GIAHS)』

· Mr. Yoshihide Endo / FAO GIAHS Coordinator



Recent Developments and Future Prospects of Globally Important Agricultural Heritage Systems (GIAHS)

Yoshihide Endo
GIAHS Coordinator, FAO

14 June 2016



GIAHS Definition

Remarkable land use systems and landscapes which are **rich in globally significant biological diversity** evolving from the **co-adaptation** of a community **with its environment and** its needs and aspirations for **sustainable development**

For a long period of time, communities of farmers and herders have developed locally adapted ingenious agricultural systems that have led to food and livelihood security as well as the maintenance of natural and cultural diversity.






2

Food and Agriculture Organization of the United Nations
GIAHS Globally Important Agricultural Heritage Systems

Backgrounds of Remarkable/Unique Agricultural Systems

- **Famers had to establish complex and innovative land use/management practices due to:**
  - **(a) geographic isolation:**
  - **(b) fragile ecosystems:**
  - **(c) limited natural resources:**
  - **(d) extreme climate conditions**
- **Famers developed a strategy to minimize risks by planting several species/varieties of crops**

3

These systems are threatened by;

- Population pressure and social, cultural and economic changes
- Accelerated process of Urbanization
- Neglect of diversified systems and local knowledge under the process of modernization
- Low community involvement in decision-making
- Inappropriate policy, legal and incentive frameworks

Designation as GIAHS

Conservation activities of the site can be carried out with involvement of all stakeholders.
→ Dynamic Conservation

4

Food and Agriculture Organization of the United Nations
GIAHS Globally Important Agricultural Heritage Systems

Dynamic Conservation beyond Simple Conservation

The values of service and agricultural products provided by farmers in the GIAHS site should be appropriately evaluated and fully utilized.

→ Opportunities for Economic Development

- Agritourist/Ecotourism
- Branding of local agricultural products
- Payment for environmentally friendly agriculture
- Promotion of local gastronomy and traditional culture

5

Criteria for designation of GIAHS

1. Food and livelihood security

The proposed agriculture system should contribute to food and livelihood security of local communities.

2. Biodiversity and ecosystem function

Agricultural biodiversity and genetic resources (species, varieties & breeds), as well as other biodiversity such as wild relatives, pollinators and wildlife associated with the agricultural system and landscape.

3. Knowledge systems and adapted technologies

Maintain invaluable knowledge, ingenious technology and management systems of natural resources, etc.

4. Cultures, value systems and social organizations (Agri-Culture)

Cosmo-vision, value systems and agri-cultural practices associated with environment and agricultural calendar; festivities and rituals as knowledge transfer.

5. Remarkable landscapes, land and water resources management features

Landscape features resulting from human management

6

Food and Agriculture Organization of the United Nations
GIAHS Globally Important Agricultural Heritage Systems

Monitoring and Evaluation

In order to know how the action plans for dynamic conservation are implemented, monitoring and evaluation are very important;

Monitoring of the Implementation of the Action Plans

Evaluation of the current state of the GIAHS

Feed back to Dynamic Conservation

- Revision of the action plans
- Acceleration of implementation of action plans

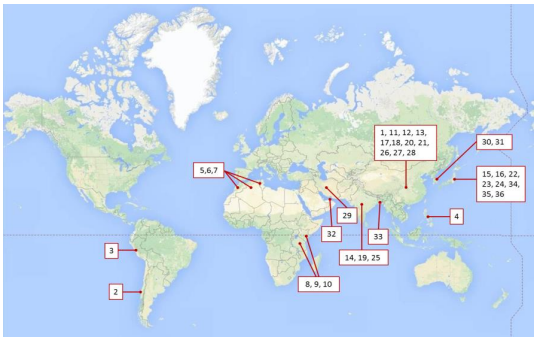
7

History of GIAHS Development



8

Designated sites as of February 2016



1	Rice-fish Culture (CHN)
2	Chiloé Agriculture (CHL)
3	Andean Agriculture (PER)
4	Ifugao Rice Terraces (PHI)
5,6,7	Oases of the Maghreb Region (TUN, ALG, MAR)
8.9	Maasai Pastoral Heritage (KEN, TAN)
10	Shimbue Juu Kihamba Agroforestry（TAN）
11	Dong's Rice Fish Duck System (CHN）
12	Hani Rice Terraces(CHN）
13	Wannian Traditional Rice Culture (CHN）
14	Saffron Heritage of Kashmir (IND）

15	Sado's Satoyama in harmony with Crested Ibis（JPN）	26	Jiaxian Traditional Chinese Date Gardens (CHN)
16	Noto's Satoyama and Satoumi (JPN)	27	Xinghua Duotian Agrosystem (CHN)
17	Pu'er Traditional Tea Agrosystem (CHN)	28	Fuzhou Jasmine and Tea Culture System (CHN)
18	Aohan Dryland Farming System (CHN）	29	Qanat Irrigated Agricultural Heritage Systems, Kashan (IRI)
19	Traditional Agricultural Systems, Koraput (IND）	30	Traditional Gudeuljang Irrigated Rice Terraces in Cheongsando (KOR)
20	Kuaijishan Ancient Chinese Torreya (CHN）	31	Jeju Batdam Agricultural System (KOR)
21	Urban agricultural heritage – Xuanhua grape garden (CHN）	32	Al Ain and Liwa Historical Date Palm Oasis (UAE)
22	Managing Aso Grasslands for Sustainable Agriculture (JPN）	33	Floating Garden Agricultural System (BAN)
23	Traditional teg-grass integrated system in Shizuoka (JPN）	34	Ayu of the Nagara River System (JPN)
24	Kunisaki Integrated Forestry, Agriculture and Fisheries System (JPN）	35	Minabe-Tanabe Ume System (JPN)
25	Kuttanad Below Sea Level Farming System (IND）	36	Takachihogo-Shiibayama Mountaious Agriculture and Forestry System (JPN)

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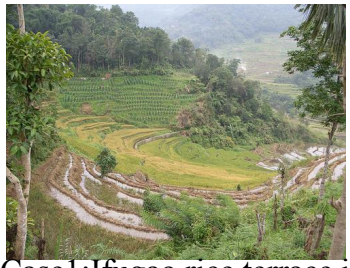
Remarkable landscapes, ecosystem function





Case1:Ifugao rice terrace in the Philippines

- Ingenious technology to form rice terrace in steep mountainous area with effective management of other resources (forest, upland field, water)
- vertical ecological landscape out of the mountains were created





Case2:Chinese Honghe Hani rice terraces System

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Case3:The Upland Agro-forestry system in the Northern Tanzania





Case 4: Noto Satoyama/Satoumi system

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Ingenious technology and multiple products



Case5:Floating Garden Agricultural System in Bangladesh



Case6:Xinghua Duotian Agrosystem in China

- Unique way to use available land and water resources







Case7:Rice-fish culture in China

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Significant biodiversity and genetic resources







Case 8: Chiloe Island Agriculture





Case 9: Andean Agriculture

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Agri-culture and cuisine





Fig25:Ureshino

Case10:Kunisaki Peninsula Usa Integrated Forestry, Agriculture and Fisheries System in Japan





Case11:Algeria Ghout System (Oases of the Maghreb)

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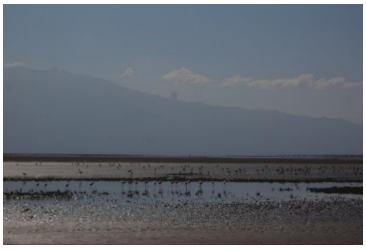
Resources of tourism, sense of belonging to nature habitat





Case12:Maasai pastoral system-Kenya and Tanzania





Case13:The Ayu of Nagara River System in Japan

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Recent Developments

Development in 2013

- **The GIAHS International Forum held May 2013 in Noto Peninsula, Japan adopted "Noto Communique"**

GIAHS Noto Communique
The recommendations:

1. **the progressive designation of further GIAHS sites to promote the conservation of agricultural heritage and its contributions towards global food security and economic development**
2. **promotion of on-the-ground projects and activities, particularly in developing countries**
3. **the existing GIAHS to support the recognition of candidatures of GIAHS areas in less developed countries**
4. **promote the twinning of GIAHS sites between developed and developing countries.**

- **Regional Workshop for Asia and the Pacific was held by FAORAP in November 2013**

Development in 2014

- **Joint Meeting of Steering/Scientific Committee in April**
  - Two Korean, three Chinese and one Iranian site were designated.
- **The First Conference for East Asia Research Association for Agricultural Heritage Systems (ERAHS)** was held in Xinghua City, Jiangsu Province, China, 7–11 April, 2014.
- **The First High Level Training on GIAHS in Beijing in September.**
- **The Third APEC Ministerial Meeting on Food Security (September)**

The Beijing Declaration on APEC Food Security, paragraph 19

"We agree that APEC should promote rural development policies that enhance the economic, social and cultural wellbeing of communities and support FAO's work on Globally Important Agricultural Heritage Systems.

We recognize that we should promote the public understanding and awareness of agricultural heritage systems and share successful stories of management on agricultural heritage and typical models of rural development."

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Development in 2014 (Cont.)

- **The 24th Session of the Committee on Agriculture (October)**

Discussion was carried out on how FAO should operate, manage and promote GIAHS. ⇒ Various fundamental comments and questions were raised.

- **The International Workshop on GIAHs for the Islamic countries in collaboration with ISESCO (November)**

- **Collaboration with CBD and UNESCO**
  - GIAHS contribution to the regional capacity building workshop for Africa held by CBD (Nairobi, Kenya in March)
  - GIAHS contribution to the 1st European Conference for the Implementation of the UNESCO-SCBD Joint Programme on Biological and Cultural Diversity (Florence, Italy in April)
  - Side event at CBD COP 12 (Pyeongchang, Republic of Korea, October)

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Development in 2015

- **The Second Regional Workshop for Asia and the Pacific** was held by FAORAP (May)
- **The Second Conference for East Asia Research Association for Agricultural Heritage Systems (ERAHS)** was held in Sado City, Niigata, Japan (June)
- **FAO Conference approved its Program for Work and Budget (PWB) 2016-2017** (June)
  - The FAO Conference endorsed GIAHS as FAO corporate programme by allocating staff costs for the GIAHS Secretariat under regular budget.
- **The Second High Level Training on GIAHS in China** (September)
- **Joint Meeting of the Steering and Scientific Committee** (December)
  - One site in Bangladesh/Three sites in Japan were designated.
- **Steering and Scientific Committee ceased to function** (December).

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Development in 2016

- **Scientific Advisory Group was established and started its activity since January.**

- **The First Session of the SAG was held** (22-23 February).

- **The Regional Workshop on Globally Important Agricultural Heritage Systems (GIAHS) for Latin America and the Caribbean (**27-29 April)

- **FAO-ISESCO Sub-Regional Workshop on Globally Important Agricultural Heritage Systems (GIAHS) for West Africa (28-30 June 2016, Marrakesh Morocco)**

- **The Third High Level Training on GIAHS in China (October)**

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Future Prospects
(Trend, Tasks, Issues, Challenges)

Future Development of GIAHS (1)

1. Governance System



- 25 COAG Session is expected to endorse its new role of GIAHS, namely providing policy and strategic direction;
- Rules & Regulations, procedures, and templates should be reviewed on a regular basis, if and when necessary.

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Future Development of GIAHS (2)

2. **More Global Expansion of the GIAHS sites**

→ Current Geographic Distribution of the GIAHS Sites

- Asia and Pacific: 25
- Africa: 3
- Near East: 5
- Latin America and Caribbean: 2
- North America: 0
- Europe: 0

3. **Monitoring and Evaluation of the designated GIAHS sites**

4. **Scientific Analysis of the GIAHS sites to boost dissemination, demonstration effects (achieving impacts on macro level)**

→ The ultimate goal of GAHS; Conservation of Heritage only? or more ambitious goal to pursue demonstration and dissemination effects of GIAHS sites?

→ Agronomic/Ecological/Economic/Social Analysis

22

Future Development of GIAHS (3)

5. **Promotion of collaboration with USESCO and other relevant activities in other organizations (**<u>while making distinction with Cultural Landscapes in the World Heritage</u>**)**

6. **More sustainable financial resources to support GIAHS**

→ FAO regular budget supports only Secretariat cost and China and Japan support main activities of GIAHS.

7. **Response to increasing number of interested countries**

- Global project, national project, South-South corporation, twining of sites to assist member countries to identify their GIAHS sites and make qualified proposal document

8. **Active collaboration among sites**

- Promoting the twinning of GIAHS sites between developed and developing countries declared in 'Noto Communique'

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Future Development of GIAHS (4)

9. Establishment of the GIAHS Registry

10. More Comprehensive Support to Developing countries

- Current assistance → identification of GIAHS sites and making good proposal

- What should be additionally necessary in the future
  → Technical assistance for making action plans for dynamic conservation and facilitating its implementation, monitoring and evaluation

11. Establishment of Global, Regional Network of GIAHS sites

12. Promotion of the NIAHS

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Thank You!

Keynote Presentation 2.2

『Policy Direction of Korea's Important Agricultural Heritage Systems (KIAHS)』

Mr. Kim, Jae-Hak (Deputy Director, Rural Development Division, Ministry of Agriculture, Food and Rural Affairs(MAFRA), KOREA)

Policy Direction of Korea Important Agricultural Heritage System(KIAHS)

2016. 6. 14.

Ministry of Agriculture, Food and Rural Affairs

Table of Content

Ⅰ Background

Ⅱ Achievement

Ⅲ Prosecution of KIAHS

Ⅳ Conservation/Management of KIAHS

Ⅴ Henceforth Plan

Ⅰ. Background

- **(Plural value) Agriculture oriented tradition and heritage remains in rural towns**
  - Agriculture holds plural value of biodiversity enhancement, land conservation, etc
- **(Resource damage) Rural resources are less-valued and damaged based on development theory**
  - Focused on gap solution from urban area, rural development gave undue value on H/W development and mere acknowledgment for Heritage
- **(Policy change) '00, rural development policy has been improved with higher interest in rural resource**
  - Policy change from city oriented policy for gap settling from urban area to rural-area-friendly policy

The originality and ecological culture are essential components of conservation/management system, assuring community and life quality improvement.

1

Ⅱ. Achievement

- **(System built) Established Agricultural Heritage System(AHS) in 2012 for conservation/management**
- **(Budget allocation) KIAHS has earned budget support from 2013**
  - $1.25 million budget through 3 years for Utilizations of Rural Plural Resources(1:1200)
- **(Legal rules) Established legal structure for AHS designation and management**
  - Guideline provided for AHS designation and management(2012)
  - Applicable Act established for AHS designation(Special Law for Life Quality)(2015)
- **(Academia) Collaborated with academic experts for AHS discovery & research**
  - MAFRA has supported Korea Rural Heritage Association



2

Ⅱ. Achievement

▶ **(Heritage designation) Korea Important Agricultural Heritage(KIAHS) & FAO Globally Important Agricultural Heritage System(GIAHS)**

- KIAHS: 6 sites with budget support
- Active support KIAHS for GIAHS designation(2 GIAHS designated in 2014)



- KIAHS presentation(Cheongsando Gudeuljangnon) -



- FAO Secretary with MAFRA Minister(2013)-



- GIAHS presentation (Cheongsando Gudeuljangnon) -

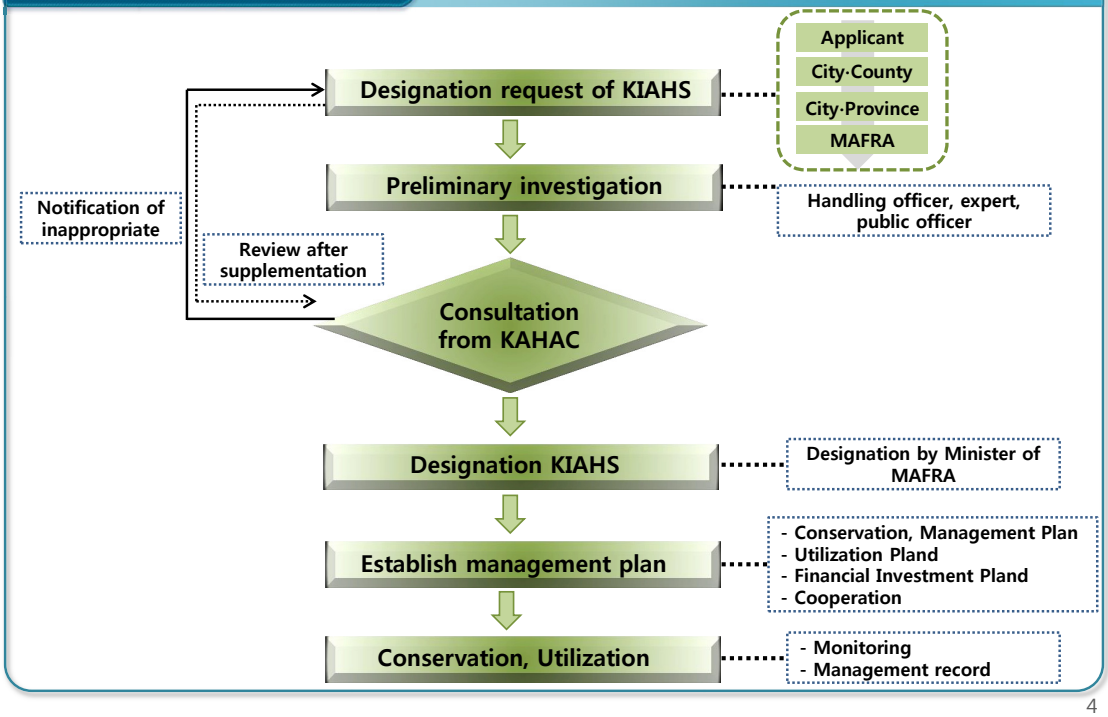


- GIAHS presentation (Jeju Batdam) -

3

Ⅲ. Prosecution of KIAHS

1. Designation process



4

2. Designated KIAHS

◈ Cheongsando Gudeuljangnon (Flat Stone Floor Paddy Field) System

- **RANGE:** Cheongsando in Wandogun County**(FAO GIAHS, 2014)**
- **SIGNIFICANCE: RICE PADDY WITH WATER PASSAGE SYSTEM FLOORING**



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2. Designated KIAHS

◈ Jeju Batdam(Stone Fence) Agricultural System

- **RANGE : ISLAND OF JEJU**
- **SIGNIFICANCE: BASALT ROCK FENCE AROUND DRY FIELD(22,108KM)**



6

Ⅲ. Prosecution of KIAHS

2. Designated KIAHS

◈ Gurye Sansuyu(Cornus Officinalis) Agricultural System

- RANGE : SANDONG-MYEON GURYE COUNTY(228ha)
- SIGNIFICANCE: UNIQUE CULTURE/ LANDSCAPE OF Sansuyu(Cornus Officinalis) and stone fence



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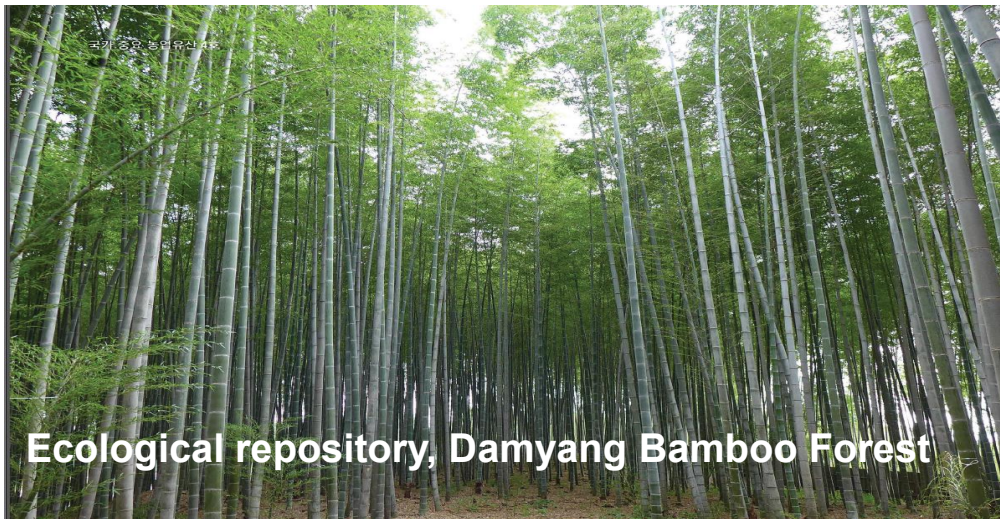
Ⅲ. Prosecution of KIAHS

2. Designated KIAHS

◈ Damyang Bamboo Forest System

- RANGE : SAMDA-RI/HYANGGYO-RI IN DAMYANG COUNTY
- SIGNIFICANCE : HOME OF BAMBOO, HOLDING UNIQUE BIODIVERSITY AND LANDSCAPE



8

2. Designated KIAHS

◈ Geumsan Insam(Ginseng) Agricultural System

- RANGE : GEUMSAN COUNTY(297ha)
- SIGNIFICANCE : HOME OF KOREAN GINSENG, COVERING CULTIVATION/PROCESS/DISTRIBUTION



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Ⅲ. Prosecution of KIAHS

2. Designated KIAHS

◈ Hadong Traditional Tea Plantation System

- RANGE : HWAGAE-MYOUN HADONG COUNTY(597ha)
- SIGNIFICANCE: WILD TEA PLANTATION IN SKIRT AREA OF MT. JIRISAN, HOLDING TRADITIONAL CULTIVATION AND PROCESS METHOD IN ITS BEAUTIFUL LANDSCAPE



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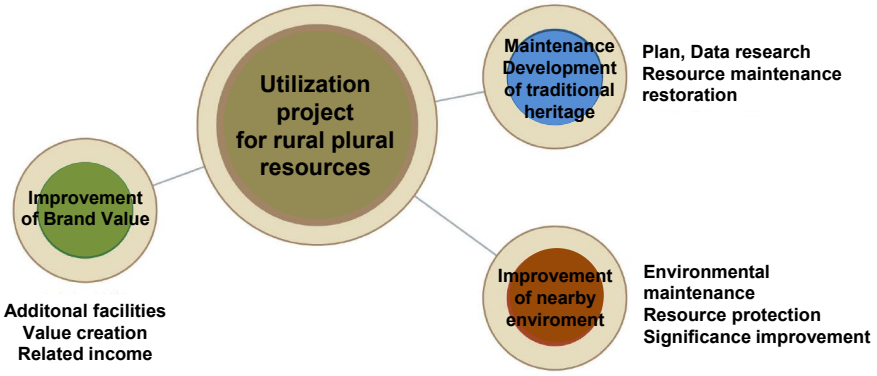
Ⅳ . Conservation/Management of KIAHS

1. Utilizations of rural plural resources

▶ Discover/manage/utilize rural resource to energize local economy and improve life quality

- Target: Area with rural plural resource or agricultural heritage
- Duration/Budget: 3 yr/$1.25 million(1:1200won applied)



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Ⅳ . Conservation/Management of KIAHS

2. AHS Conservation/Management Case

◈ **Cheongsando Gudeuljangnon**

▶ Established Conservation/Management Plan

▶ Launched Conservation Association

▶ Owner System for continuous farming and brand have been developed

▶ Gudeuljangnon Bojeondure Program

(Gudeuljangnon School, guide, seminar, etc)











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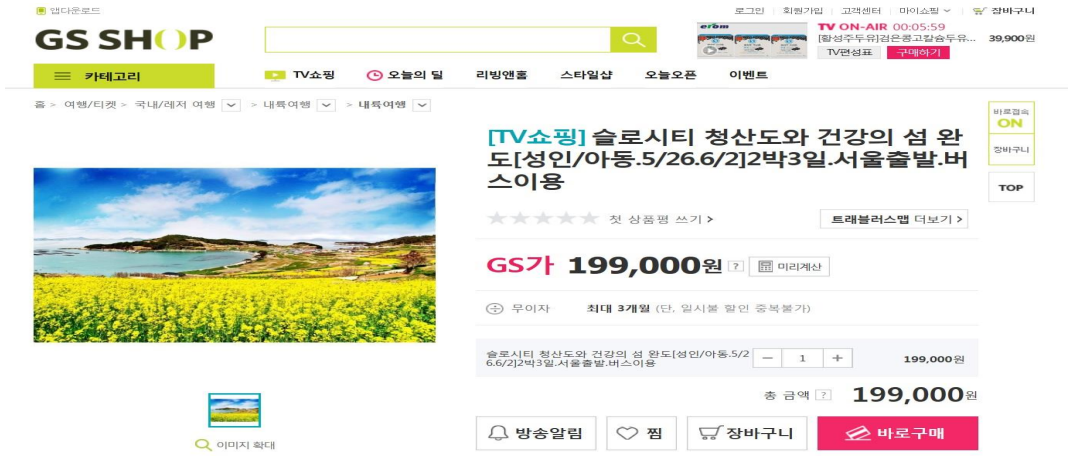
2. AHS Conservation/Management Case

◈ Cheongsando Gudeuljangnon

▶ **Development/sale of tourism product of** Cheongsando Gudeuljangnon

• Tourism product based on impression of Slow-city and Heritage



2. AHS Conservation/Management Case

◈Jeju Batdam(Stone Fence)

▶Actual research on Batdam and conservation /management plan established

▶Launched Jeju Agricultural Heritage Committee

▶Reconstruction/maintenance around Batdam

(Trail, Batdam Hands-on Program

▶ Batdam significance improvement program

(Stone Culture Academy, Develop Stone masters, Festival)









Ⅳ. Conservation/Management of KIAHS

2. AHS Conservation/Management Case

◈ **Jeju Batdam(Stone Fence)**

▶ **Development/sale of Jeju Batdam** oriented **eco-tour programs**

- Batdam Trail tour program and Batdam building program in operation

▶ **Selected for The 6th industrialization of rural village with Jeju Batdam**

- GIAHS Jeju Batdam proved energization of local economy and job creations





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Ⅳ. Conservation/Management of KIAHS

2. AHS Conservation/Management Case

◈**KIAHS BI**

국가중요농업유산
Korea Important Agricultural Heritage System

- Represents cultivation(Jaenggigil) and Nongak culture

◈ **Trademark registered(2014.11)**


상표출원공고 42-2014-0059210

(190) 대한민국특허청(KR) 상표공보
(260) 공고번호 42-2014-0059210
(442) 공고일자 2014년07월01일

(511) 분류 00(10판)
(210) 출원번호 42-2013-0000315
(220) 출원일자 2013년07월04일
(731) 출원인
대한민국(농림축산식품부장관)
세종특별자치시 다송2로 94 정부세종청사 농림축산식품부
(740) 대리인
오종근
담당심사관 : 이익희

(511) 지정상품/서비스업/업무

제 00 류

1. 전통적 경관, 토지 및, 수자원의 관리업무 2. 생태시스템의 복원 및 보전기술에 관한 업무 3. 농어업유산에 대한 지정, 관리 및, 보전 업무 4. 경관 및 전통문화의 보전, 환경생태계의 유지, 국립경서의 순화, 보전유양과 학술체험기회 제공업무 5. 동식물, 미생물과 그들이 담고있는 유전자 및 그들의 환경을 구성하는 생태계 등 생물 중, 생물유전자, 생태계의 보전, 유지교육 및, 연구업무,

상표에 대한 설명

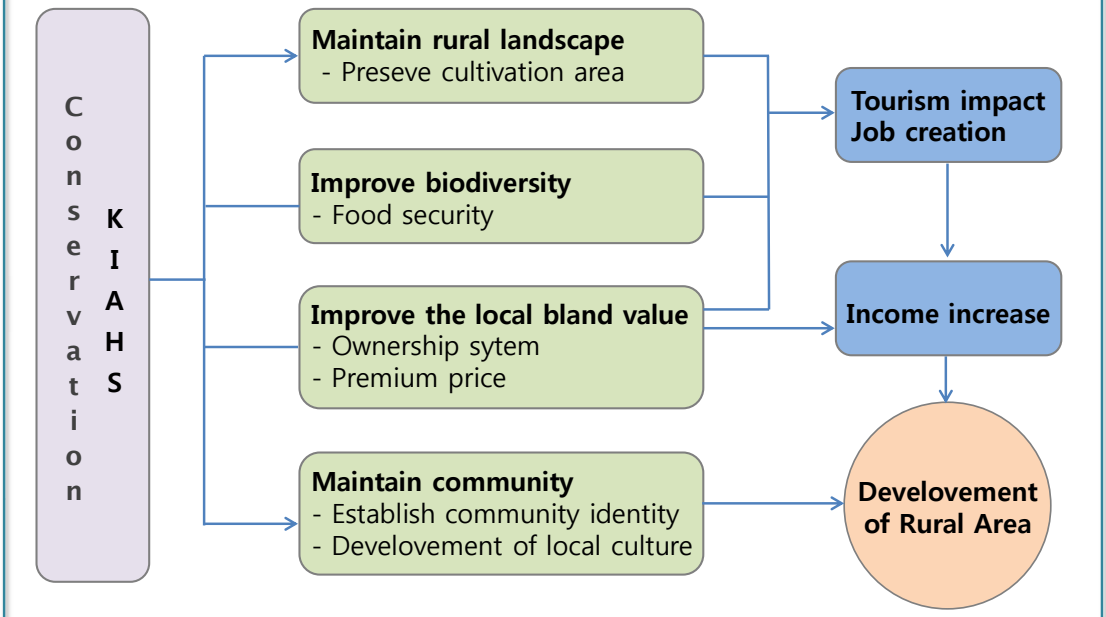
국가중요농업유산에 관한 도교와 문자로 구성되어, 농업유산을 이미지화 하면서 약간의 색채를 결합시킨 업무표장 상표

상표견본

16

Ⅳ. Conservation/Management of KIAHS

3. Effect of AHS conservation/utilization



KIAHS Conservation and Developement of Rural Area

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Ⅴ. Henceforth plan

1. Provision of Utilizations thru expansion/mutual contact among KIAHS

▶ **Continuous discovery/designation of KIAHS**

• 2 site designation per year minimum: 14 sites by 2019

▶ **Network built among KIAHS**

• Exchange and share of regional information for conservation/management of Heritage

▶ **Branding to improve sales volume of KIAHS**

• Strengthen KIAHS product competitiveness thru local branding and community branding strategy

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Ⅴ. Henceforth plan

2. Expansion of KIAHS Value thru GIAHS Designations

▶ **Launch of steering committee for future GIAHS designation**

• 4 KIAHS application review and supplement→ submit for FAO GIAHS designation

▶ **International site visit to enhance handling division/personal' s KIAHS significance and to build international network system**

• Learn international GIAHS and candidate areas via site study and build international enchange

▶ **Continuous academic progress with ERAHS**

• Support Korea Agicultural Heritage Association for ERAHS conference participation

▶ **Improve cooperation with other GIAHS members**

• Establish mutual cooperation for sound conservation/management of heritage thru MOU among other heritage sites.

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Keynote Presentation 2.3

『The Globally Important Agricultural Heritage Systems (GIAHS) In Japan』

Mr. Kentaro Morita (Rural Environment Division, Rural Development Bureau, Ministry of Agriculture, Forestry and Fisheries(MAFF), JAPAN)

GIAHS
Globally Important Agricultural Heritage Systems

Globally Important Agricultural Heritage Systems (GIAHS) In Japan

Kentaro MORITA

July. 2016

MAFF
Ministry of Agriculture, Forestry and Fisheries

Topics

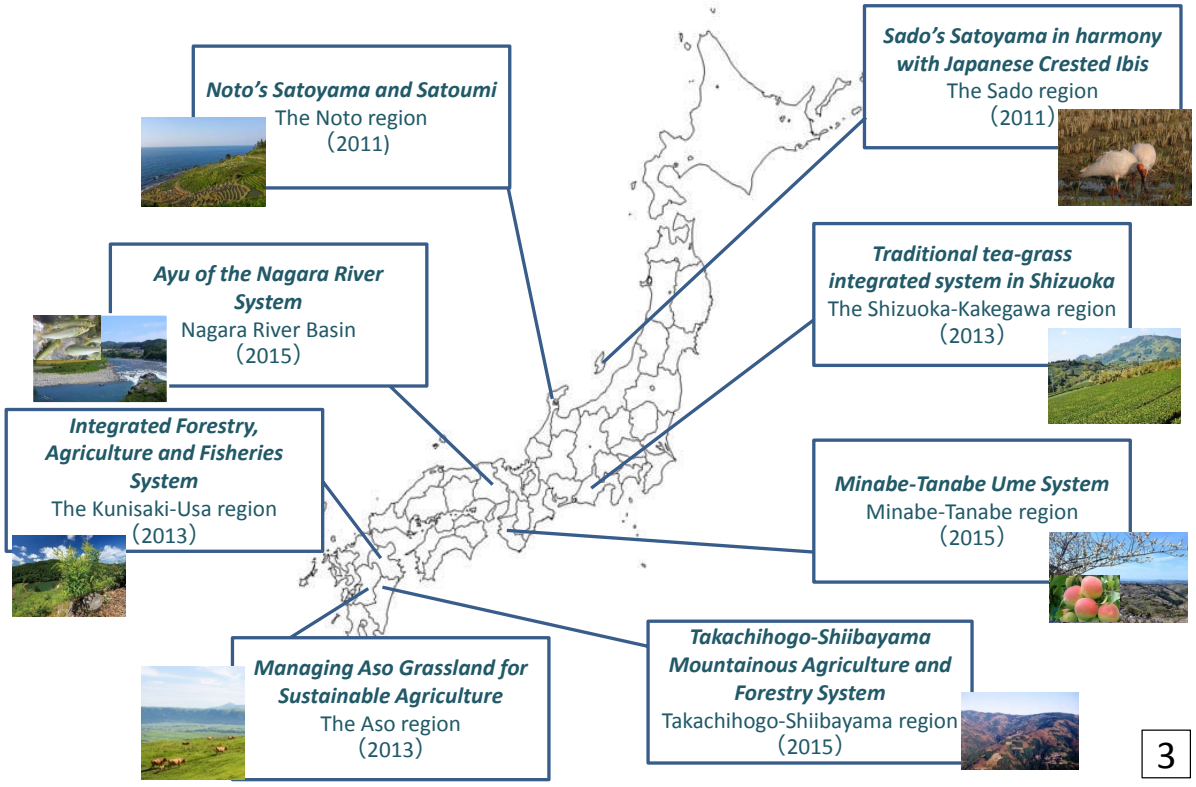
1. The policy on GIAHS in Japan

2. Creation of NIAHS in Japan

3. GIAHS monitoring in Japan

2

GIAHS in Japan



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Objectives of Policy on GIAHS in Japan

The Basic Plan on Food, Agriculture and Rural Areas (Mar 2015)

- Promoting designations of GIAHS site in Japan to conserve and promote sustainable use of biodiversity through agricultural production.

The Action program for Tourism vision (May 2016)

- Enforcing public relations about GIAHS designated sites to enhance value and recognition of traditional agricultural system in the rural area.

The Low on re-creation of town, people and business (Nov 2014)

<Objective of the low>

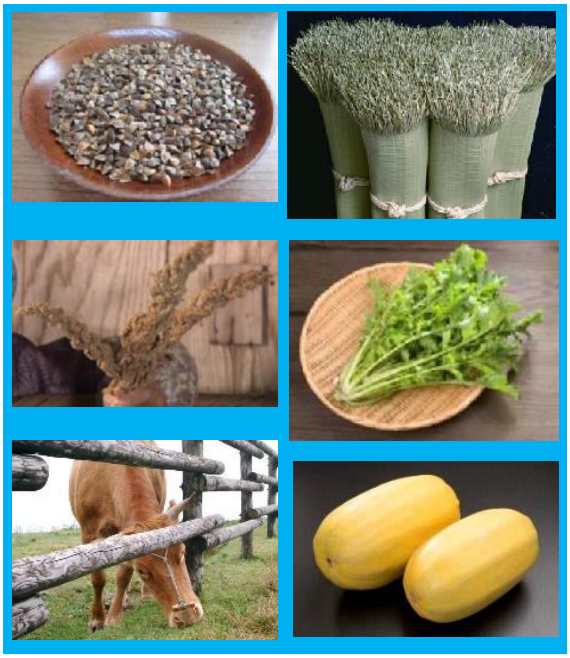
Systematic implementation of various measures for breaking the depopulation in Japan and correction of overpopulation in Tokyo area.

<Basic idea>

- Development of highly individual and attractive regional society
- Creation of opportunity of attractive employment which utilizes the characteristic of the region

4

Bio-diversity in Japanese GIAHS sites



Endemic species of agricultural product



Rare species in the secondary nature

5

Policy for attracting foreign tourists in Japan

Tourism vision (Mar 2016)

<Goal of the vision>

- The number of the tourist from foreign country
  20million people(2015) → 40million people(2020)
- The number of the guest in the countryside hotel.
  25million people(2015) → 70million people(2020)

<Action program 2016>

- Utilization of GIAHS for attracting tourists



Scenery
(Minabe-Tanabe)



Culture
(Noto)



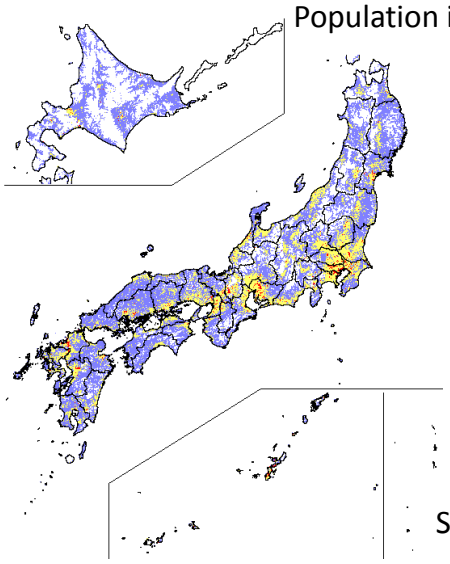
Food
(Nagara River)

6

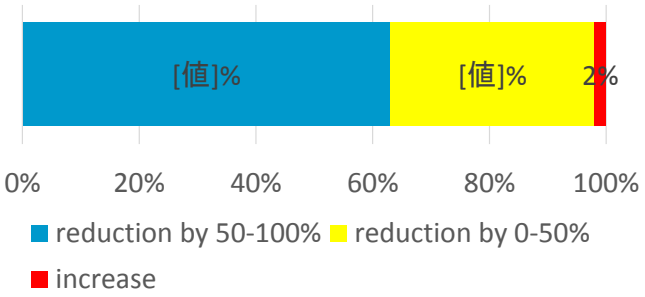
Reduction and uneven distribution of population in Japan

- The population will decrease over 50% by 2050 in 63% of the residential area in Japan compered with 2010.
- 20% of the area will become no residential area.
- Population of urban area, only 2% of residential area, will increase.

Population in 2050 compared with 2010



Proportion of points by population change rate



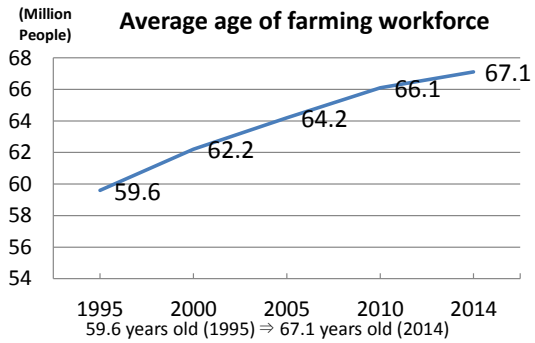
Source: “Land Grand Design 2050” by MLIT

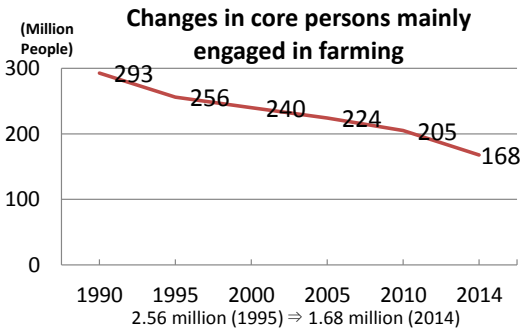
7

Situation of farming workforce in Japan

Serious situation of agriculture in Japan

- Declining workforce due to depopulation and aging in rural regions
- Increasing abandoned fields and paddies





Source: “Agricultural Census” and “Agricultural Structure and Dynamism Survey” by MAFF

Political target

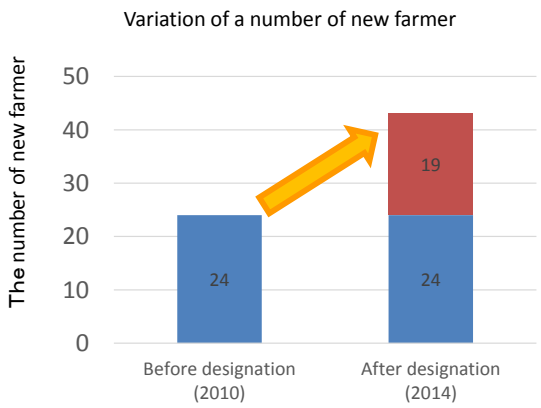
- Increasing of new young farmers from inside and outside of rural area.

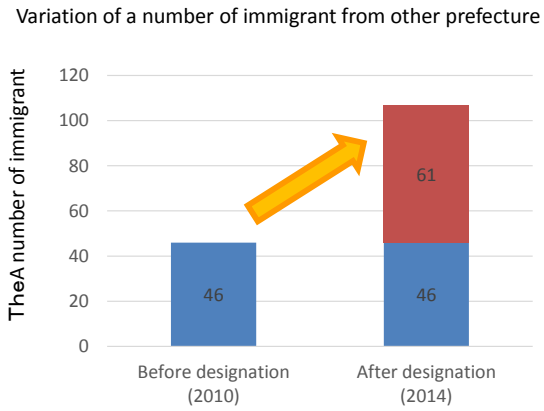
8

Effect of the designation for GIAHS

Case: Noto region (Ishikawa-Pref.)

- The number of new farmer increased by 71% after designation.
- The number of immigrant from other prefecture increased 133% after designation.





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Other effect of the designation for GIAHS

Branding of Agricultural Products











Fund and CSR

- Many local banks make funds for conservation and revitalization of GIAHS site.
- Some companies donate some part of benefit to GIAHS conservation.

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GIAHS
Globally Important Agricultural Heritage Systems

Creation of NIAHS in Japan

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Creation of NIAHS in Japan

Situation of GIAHS in Japan

Designated sites

In Japan, 8 GIAHS sites use designation for regional development, such as product branding, tourism and cooperation with companies.


Product Branding


Tourism



Cooperation with Companies

Other sites

Increasing the number of the sites which intend to apply for GIAHS.

Problem of GIAHS

Uneven distribution of GIAHS

GIAHS sites are concentrated in JAPAN and China.

Designation body in FAO

The GIAHS steering committee was abolished last year. But next designation body has not been established.

Creation of NIAHS in Japan

<Objectives of NIAHS>
- Enhance value and recognition of traditional agricultural systems.
- Liven up the activities of GIAHS candidate sites.

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Outline of NIAHS in Japan

	NIAHS in Japan
Criteria	1. Global Importance (1) Food and livelihood security, (2) Biodiversity, (3) Knowledge system and adapted technologies, (4) Culture, (5) Landscapes 2. Historic relevance 3. Contemporary relevance 4. Original criteria (1) Resilience against disaster and ecosystem change (2) Participation of various entities (3) Industrialization
Designator	Minister of Agriculture, Forestry and Fisheries
Evaluator	National Steering committee

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National steering committee

Member of the committee	
<chair> Kazuhiko Takeuchi	Prof. of Tokyo Univ. (Ecology, Landscape etc) Vice-President of United Nations Univ.
Shinji Aoki	Prof. of Toyo Univ. (Rural Sociology, Culture)
Junko Owada	Lohas Business Alliance (Consultant for Rural Sociology)
Koichi Kuriyama	Prof. of Kyoto Univ. (Forest Economy)
Akiko Sakai	Prof. of Yokohama National Univ. (Environmental Ecology)
Junichi Hirota	Prof. of Iwate Univ. (Agriculture, Rural Planning)
Nobuyuki Yagi	Prof. of Tokyo Univ. (Fishery Economy)

Activities of the committee
- Assessment of GIAHS proposal sites for endorsement of the Ministry of Agriculture. - Monitoring of designated GIAHS sites

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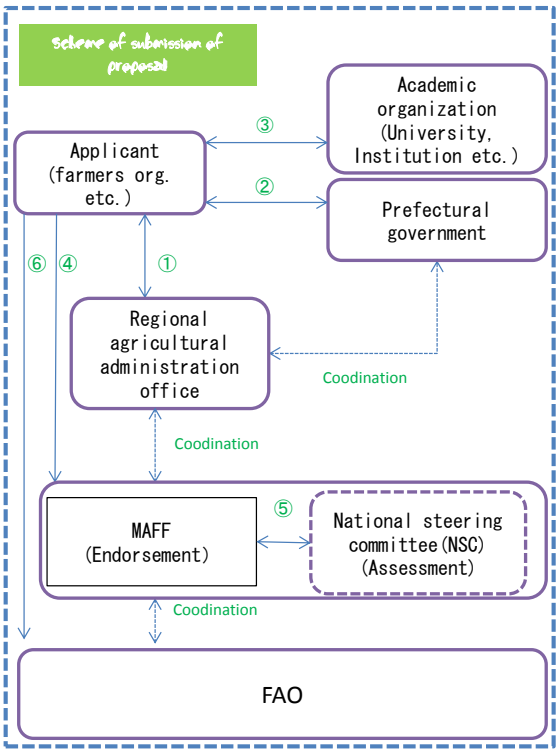
GIAHS domestic endorsement procedure



①Applicant exchanges information with Regional office of MAFF
②Applicant requests recommendation about the proposal to prefectural government.
③Applicant requests scientific comments about the proposal to Academic organization
④Applicant submits the proposal to MAFF
⑤NSC assesses proposal
- Presentation by applicant
- Checking compatibility with the criteria for GIAHS selection
- Site visit
⑥Endorsed applicant submits proposal to FAO

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GIAHS
Globally Important Agricultural Heritage Systems

Monitoring of designated GIAHS sites in Japan

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Outline of Monitoring

1st monitoring (trial)

Site: Kunisaki-Usa region (designated in 2013)
Date: 18-19 August 2015 (after 2 years from the designation)
Assessor: National Steering Committee (NSC) and Secretariat (MAFF)
Method:
(1) Self-assessment of GIAHS conservation based on the action plan by the site
(2) Review of the self-assessment by NSC
(3) Site visit by NSC and MAFF
(4) Meeting including representative of the site, NSC, MAFF etc.

2nd monitoring

Site: Sado region, Noto region (designated in 2011)
Date: 2 Feb 2016 (after 4 years from the designation)
Assessor: NSC and MAFF
Method:
(1) Self-assessment of GIAHS conservation based on the action plan by the site
(2) Review of the self-assessment by NSC
(3) Site visit by only MAFF
(4) Meeting including representative of the site, NSC, MAFF etc.

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Template of the self-assessment by the site

Document of the self-assessment

1. Name of the site
2. Summary of the activities of the site based on the action plan
3. Principal indicators of conservation and utilization of the GIAHS
4. Conclusive evaluation
5. Annex1: Action plan Annex2: Detailed report

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Principal indicators for self-assessment

Criteria of GIAHS	Indicator(outcome)
Food and livelihood security	Amount of agricultural production, Number of tourists
Biodiversity	Condition of rare species
Knowledge system and adapted technologies	Number of farmers and new farmers, Average age of farmers, Rate of young farmers, Cultivated area
Cultures	The number of people or groups which succeed to traditional rituals or artistic skill
Landscapes	Abandoned farming area, photo

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Annex2 Detailed Report by the site

Action plan	Output	Self-assessment
2. Promotion of training leaders and build system of stable production		
(1) Gain and training of new farmers and activities for improvement of agricultural technologies		
a) Seminar for new farmer and farming company	a) The number of the seminar 2013: 4 times 2014: 6 times	Oita prefecture held seminars for new farmer and offered vocational training. <Indicator(outcome)> The number of the new farmer 2013: 55 2014: 67

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Report of the monitoring by NSC

- NSC make the monitoring report based on self-assessment document, site visit report and the meeting with the site.
- The monitoring report is sent to the site and up-loaded on the MAFF's website.

Chapters of the monitoring report

1. Results of the assessment based on the Criteria for GIAHS selection
 (1) Food and livelihood security
 (2) Biodiversity
 (3) Knowledge system and adapted technologies
 (4) Culture
 (5) Landscapes
2. Comprehensive advice

ex) - Investigate objective date to enhance value of the site
 - Promote twinning and international cooperation
 - Take a necessary measure for various threats of the region

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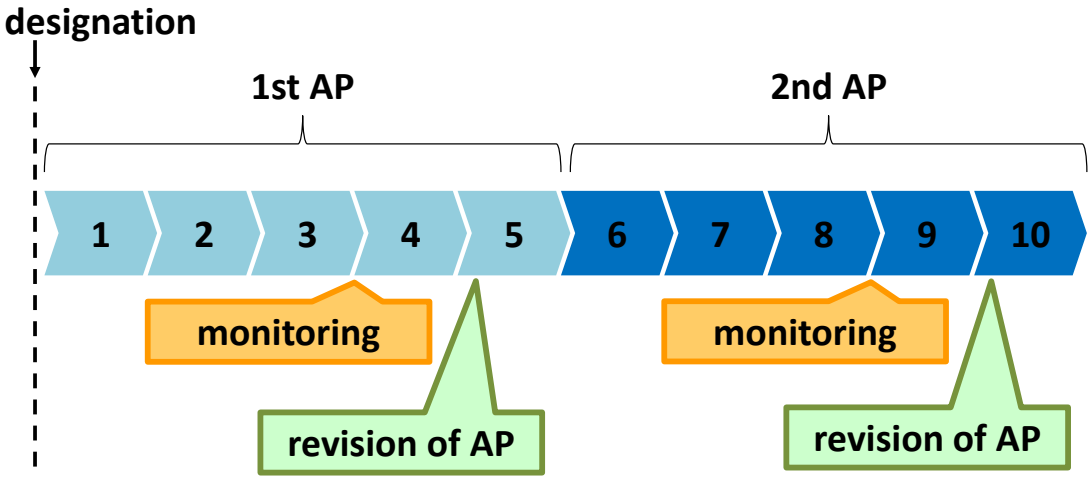
Monitoring cycle

- A term of action plan is 5 years in Japan.
- The monitoring is implemented 3rd or 4th years in the action plan's term.
- Each regions revise their action plans based on the result of the monitoring.



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GIAHS
Globally Important Agricultural Heritage Systems



Thank you very much
for your attention!

MAFF
Ministry of Agriculture, Forestry and Fisheries

Session I-1

『Policy Direction for Korea Important Fisheries Heritage Systems (KIFHS)』

Mr. Ahn, Myung-Ho (Deputy Director, Fishing Community and Port Development Division, Ministry of Oceans and Fisheries(MOF), KOREA)

KOREA IMPORTANT FISHERIES HERITAGE SYSTEM(KIFHS)

Policy Direction for

KOREA IMPORTANT FISHERIES HERITAGE SYSTEM(KIFHS)

June 14, 2016

해양수산부

CONTENTES



1 Promotion overview and the necessity

2 Summary of KIFHS

3 Future plan

1. Promotion overview and the necessity

Outline of Propel and necessity

Ⅰ. Promotion overview and the necessity

Background and necessity

Issues of urbanism, sprawling development, aging fishery community post industrialization

- Damage, negligence → value lost for tangible/intangible heritage





Global system for sound utilization of spatial fishery/agricultural system

- **2012 : 'Korea Important Agricultural Heritage System(MAFF)**
- **2013 : Separation of structure → MAFF/MAF**
- **2015 : Launch of 'Korea Important Fishery Heritage System'**

해양수산부 MINISTRY OF OCEANS AND FISHERIES

Ⅰ. Promotion overview and the necessity

Objectives

▷ Inherit traditional fishery heritage thru conservation/management

▷Branding/tourism thru plural value and utilization of fishery area.

"Contribute to economic stimulation of fishery area"






해양수산부 MINISTRY OF OCEANS AND FISHERIES

2. Summary of KIFHS

Ⅱ. Promotion overview and the necessity

KIFHS concept

- **Traditional fishery system with over 60 year evolutionary progress and the outcome resource of tangible/intangible, including fishery landscape and culture.**

Applicable Act

- Special Act Article 30-3(Conservation/utilization of KIFHS) Improvement of fishery/farmers' life quality and rural area development – proclamation(Feb 3 2015)

Designation objectives

- Complex heritage of intangible SYSTEM and tangible LANDSCAPE

SYSTEM(Software)	LANDSCAPE/FACILITY(Hardware)
Biodiversity/ & function of ecosystem	**Fishery facility**(mud, salt pond etc)
Fishing knowledge & tech system	Fishery production · process equipment
Fishing custom · cultural system	Landscape of community · ocean · river etc

Ⅱ. Summary of KIFHS

Criteria

- Refined from **FAO GIAHS** designation criteria

Type	Term	Detailed guideline
Features of KIFHS	Food security	○ Degree of food production and local food security ○ Utilization level of fishing product as food resource
	Biodiversity	○ Conservation/enhancement of biodivertisy and ecological function
	Knowledge system	○ Knowledge system and technology of heritage ○ Management tech to protect and preserve heritage
	Traditional culture	○ Heritage related culture and acknowledgement degree ○ Succession of utilization tech for heritage
	Landscape	○ Outstanding sceanary ○ Harmony with nearby villages and environment
Historicity		○ Minimum of 60 year historicity ○ Acceptable significance in its future status
Regionality	Policy of local government	○ Local level conservation management plan establishment and financial support ○ Local ordinance for heritage maintenance
	Acknowledgement	○ Local people's awareness and pride for heritage
	Sustainability	○ Utilization possibility for future ○ Utilization possibility to revitalize the region addition to fishing
	Value enhancement	○ Action plan for conservation management and its validity

Ⅱ. Promotion overview and the necessity

Designation procedure

- Per『KIFHS Designation and Management Criteria 』notification



- Heritage description
- Cadastral information
- Consent of community association

- Phase 1: Document Review
- Phase 2: Site visit
- Phase 3: Decision delivery

1. Document to be produced by local government or community association
2. Site visit is condition to the result of Phase 1
3. Commission of Inquiry(3 to 5 persons) will verify the content of document and its suitability
   → Site review and analysis (Professional institute can be included if needed)
4. Post comprehensive review(document/site visit) → Final decision and designation

Ⅱ. Promotion overview and the necessity

Advisory Committee and its task

Base:『KIFHS Designation and Management』notice

- Within 20 member appointment including experts and 4 officio member
- Officio member: experts from government and related organization
- Appointment: consist of 6 fields(food, culture, landscape, ecology, marine/fishery, fishery area development
- Term of appointment member: 2 years

- **Task: advice for KIFHS designation procedure**

Type	Task
Chairperson	○ Represent overall structure of Advisory Board
Vice Chairman	○ Assist Chairperson and replace Chairperson's duty in his vacancy
Advisory Board	○ Designation/amendment of KIFHS
	○ KIFHS application procedure
	○ Establishment and amendment of KIFHS designation criteria, procedure and title
	○ Upon advise request by Minister of MMA for further conservation management and utilization of KIFHS

해양수산부 MINISTRY OF OCEANS AND FISHERIES

Ⅱ. Promotion overview and the necessity

Designated site in 2015

Jeju Haenyeo Fishery System

- **Feature: Traditional ecofriendly fishery system of bare hand diving catch for abalone, conch etc.**
- **Culture: Unique culture of bulteok(fire place) and Haeshindang(shrine)**
- **Biodiversity: Annual** TAC(control amt of catch) and prohibited period of catch
- **Local government:**
- ○ Haenyeo culture conservation:- Haenyeo Museum, Haenyeo Festival, established Ordinance
- ○ Haenyeo protection · welfare – various medical support and production facility set up






Ⅱ. Promotion overview and the necessity

Designated site in 2015

Boseong Bbeolbae Fishery System

- **Feature: Traditional fishery system, gathering cockles on a Bbeolbae(wooden boat for the finest mud area)**
- **Culture: From lunar New Year till first full moon(about 15 days), people fix Bbeolbae boat, place in home for prayer of rich catches**
- **Biodiversity: Beolgyo Mud is recognized as one of 5 global mud area**
- ○ Sustainable production – systemized cockle cultivation and information exchange to secure seedlings
- **Residents:**
- ○ Fishing Village Cooperatives level administrative system and by laws have been established and inherit the bbeolbae boat building skill






해양수산부
MINISTRY OF OCEANS AND FISHERIES

Ⅱ. Promotion overview and the necessity

Designated site in 2015

Namhae Jukbangnyeom Fishery System

✓ **Feature:** the only trap fishing system in Korea includes v-shape bamboo net placed in the fork of the sea and catch fish around tidal gap

Culture: Anchovy Festival, Hwagyebaeseondae, Babmudeom

✓ **Biodiversity:**

✓ ○ Various marine organism live in various shape and environment of beach, rock and bedrock area 모래해변,

○ Fish species protected following the laws of nature(juvenile fish is released back into ocean)

Local government

○ Establishment of Ordinance for Jukbangnyeom management

✓






Ⅱ. Promotion overview and the necessity

KIFHS B.I

- Visual logo system represents significance and meaning of KIFHS
- Symbol represents ocean, man and prayer of rich catch and safety

국가중요어업유산
KOREA IMPORTANT FISHERIES HERITAGE SYSTEMS

[Logo]

KOREA IMPORTANT FISHERIES HERITAGE SYSTEMS
국가중요어업유산

[Emblem]



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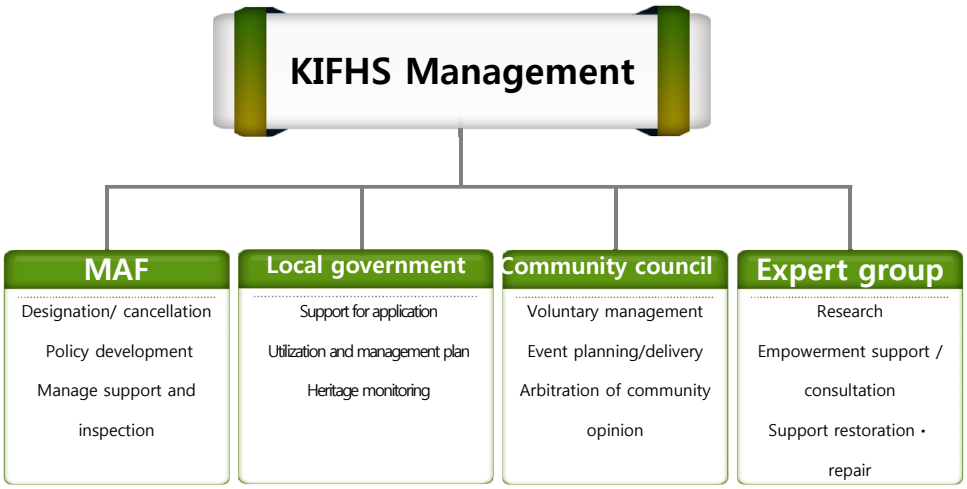
해양수산부
MINISTRY OF OCEANS AND FISHERIES

Ⅱ. Promotion overview and the necessity

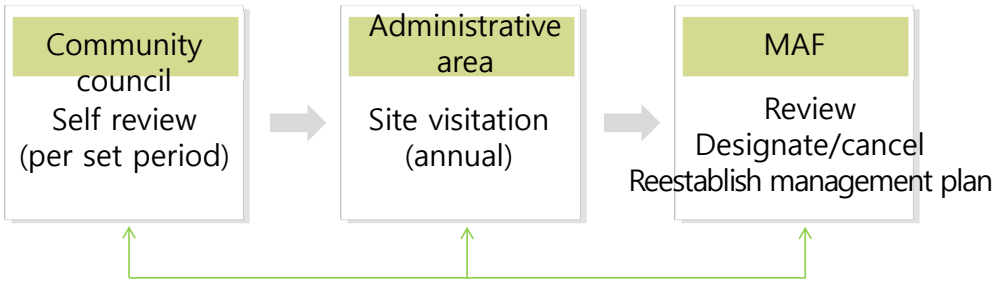
Division responsibility in Heritage management



Ⅱ. Promotion overview and the necessity

KIFHS Monitoring system

- Annual condition check up for Heritage is managed by mayor, governor of district head



- **Essentials for condition monitoring**
  - Structural safety and occurrence damage on KIFHS
  - Environmental changes effecting on KIFHS
  - Condition of signage, warning signs and safety facility
  - Overall terms in management of heritage

Ⅱ. Promotion overview and the necessity

Progress in 2015

- 02/03/2015: Submit new clause of 'Regarding KIFHS' in 『Special Act to improve life quality of farmer/fishery 』
- 04/2015: KIFHS expert consultative meeting
- 08/04/2015: Amended enforcement regulation of 『 Special Act to improve life quality of farmer/fishery 』
- 09/2015: Image of KIFHS B.I. impression developed
- 09 – 10/2015: KIFHS promotion thru local government visits and presentations
- 10/07/2015: Establishment of notice for 『KIFHS designation and management criteria』
- 10/05 – 10/30/2015: KIFHS application submission
- 11/26/2015: Document review
- 12/09 – 12/11/2015: Site inspection
- 12/16/2015: Final decision and review

해양수산부 MINISTRY OF OCEANS AND FISHERIES

3. Future plan

Future Plan

Ⅲ. Future plan

Planed projects for 2016

- Local level presentation for KIFHS: June 2016
- KIFHS Application process: ~ June 30, 2016
- KIFHS application review & site visit: ~ July 30, 2016
- KIFHS final review and decision: August 30, 2016
- KIFHS workshop among local agency and residents: October, 2016
- KIFHS conservation and utilization plan(local agency) : December, 2016

해양수산부 MINISTRY OF OCEANS AND FISHERIES

Reference

Reference

Present status of fishery resource

Type	Area	Heritage
	Taean Chungcheongnamdo	**Doksal**
Feature	➢ Traditional fishing method, utilizing tidal gap ➢ 200 year tradition of Doksal method is still practiced with various hands-on program	
Image	 	

해양수산부

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Reference

Present status of fishery resource

Type	Area	Heritage
	Sinan Jeollanamdo	**Mud • Salt pond**
Feature	➢ The island size mud flat(450ha) takes 15% of national level mud - Holds 900 marine organism, traditional fishing method(Pungeorim, Doksal) ➢ 1st Korean solar salt pond over 41.6ha - Produces 70% of solar salt in national level -Traditional flame treated salt making has advanced to solar salt production	
Image	 	

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OCEANS AND FISHERIES

Reference

Present status of fishery resource

Type	Area	Heritage
	Geoje Gyoungsangnamdo	**Gray mullet duri**
Feature	➢ Observe school of gray mullet from high spot(Mangnu), signal to fishing boat in the ocean then catch begins! ➢ Over 100 year traditional gray mullet catching method	
Image	 	

해양수산부 MINISTRY OF OCEANS AND FISHERIES

Reference

Present status of fishery resource

Type	Area	Heritage
	Jangheung Jeollanamdo	**Gaemaegi Fishing Ground**
Feature	➢Traditional Gaemaegi fishing ground, fishing between tidal gap in holding 150 year history - 35 household, length of net 4km, in 1,000ha size is the biggest in Korea ➢The only habitat of zostera capricorni in Korea	
Image	 	

해양수산부 MINISTRY OF OCEANS AND FISHERIES

Reference

Present status of fishery resource

Type	Area	Heritage resource
	Jeollanamdo	**Laver cultivation**
Feature	➢Laver cultivation in ideal area of half farming and half fishery post 1945. Traditional fishery system and community folk custom coexist in Heritage ➢National laver production ration in 2013: 77.5%(314,137M/T)	
Image		

해양수산부

OF
IES

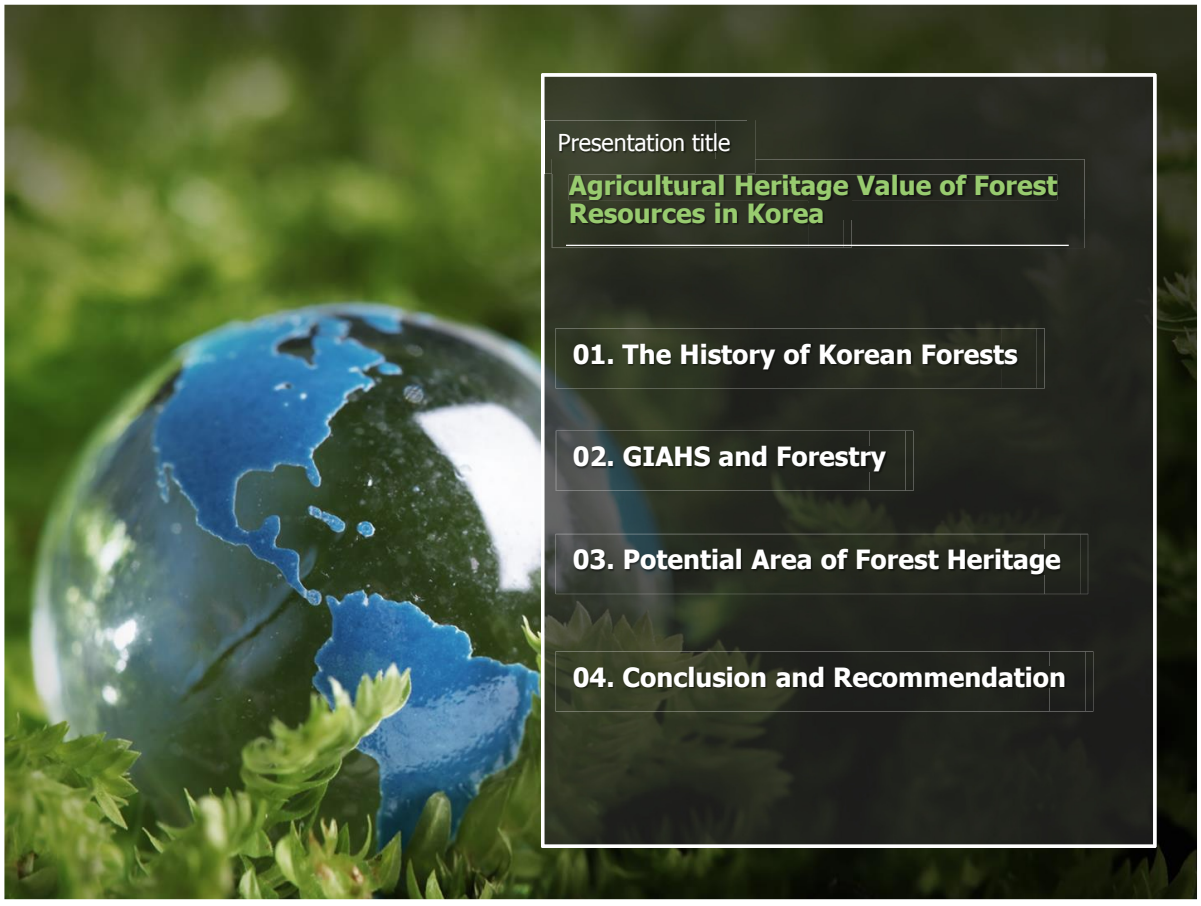
Thank you very much!

Session I-2

『Agricultural Heritage Value of Forest Resources in Korea』

Mr. Im, Young-Suk (Director, Forest Utilization Bureau, Korea Forest Service(KFS), KOREA)


Agricultural Heritage Value
of Forest Resources in Korea
Im Youngsuk
Director
Forest Recreation and Healing Division
Korea Forest Service


Presentation title
Agricultural Heritage Value of Forest Resources in Korea
01. The History of Korean Forests
02. GIAHS and Forestry
03. Potential Area of Forest Heritage
04. Conclusion and Recommendation



01. The History of Korean Forests

1-1. The History of Korean Forests





Three Kingdoms Period (BC57~AD935)
Goryeo Dynasty (918~1392)

Limsu(林藪) : Man-made forests
- Objective: To prevent wind and flood damages
- Use: Bonsai, timber, building and shipping materials

Joseon Dynasty (1392~1910)

Forest reservation system (1392~1608) :
Restrict and designate the use of forests for special purposes

Forest logging prohibition system (1608~1905) :
- -Ban logging within certain distances by installing signposts
- - Expand the scope of logging prohibition species from pine trees to oak and chestnut trees
- - Manage specially designated pine trees for making Kings' coffin



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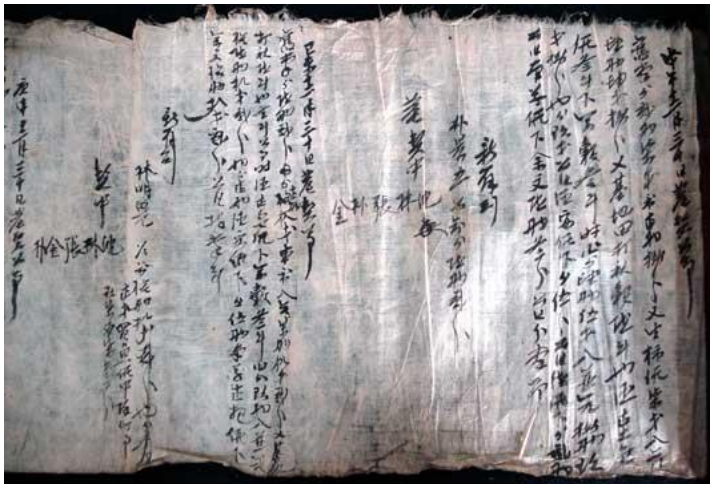
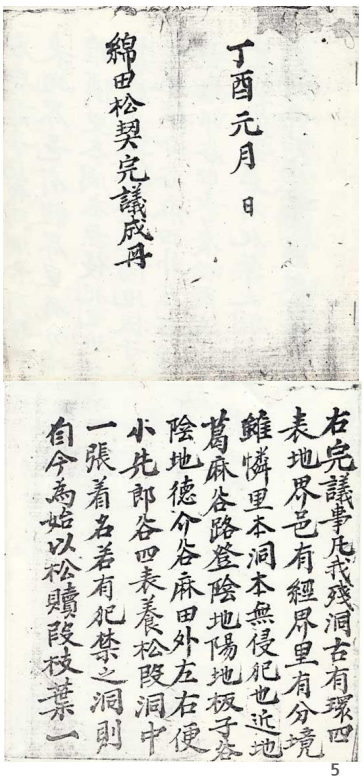
1-1. The History of Korean Forests



Songgae(松契) of Songgeumgae(松禁契) is an autonomous system of villagers to protect the forest resources.
Once the regulations set up by villagers voluntarily is breached, a violator will be punished by the villagers or reported to the local authority.



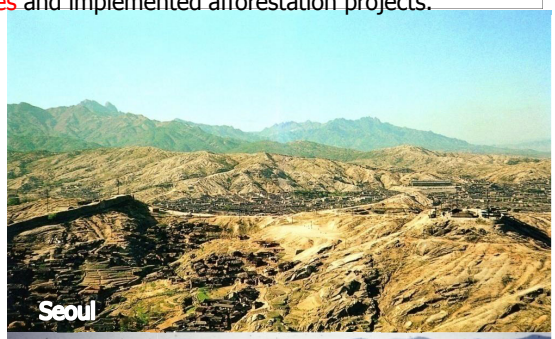


1-1. The History of Korean Forests



During the Japanese colonial era: Geumgangsong(Red pine tree) were massively exploited to support Japanese war materials during the World War II.
After the liberation: Korean war and reckless logging ruined the forests.
Establishment of the Korea Forestry Service (KFS):
KFS has made efforts to ban slash-and-burn practices and implemented afforestation projects.









1-1. The History of Korean Forests





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1-2. Views from International Community





➢ It seems hard to restore the Korean forest due to the long and continuous devastation **(UN, 1969)**

「Korea is a special and successful country in afforestation after the Second World War」 **(FAO, 1982)**





➢ 「The world is proud of the success of Korea's afforestration」
(Environmentalist Lester Brown, 2006)

「The success of Korea's afforestration is the pride of the world 」
(UNEP Executive Director Achim Steiner, 2008)





➢ 「Amazing Korea which has succeed in large scaled restoration of forest ecosystem」
(CBD Executive Secretary Braulio Ferreira de Souza Dias, 2014)

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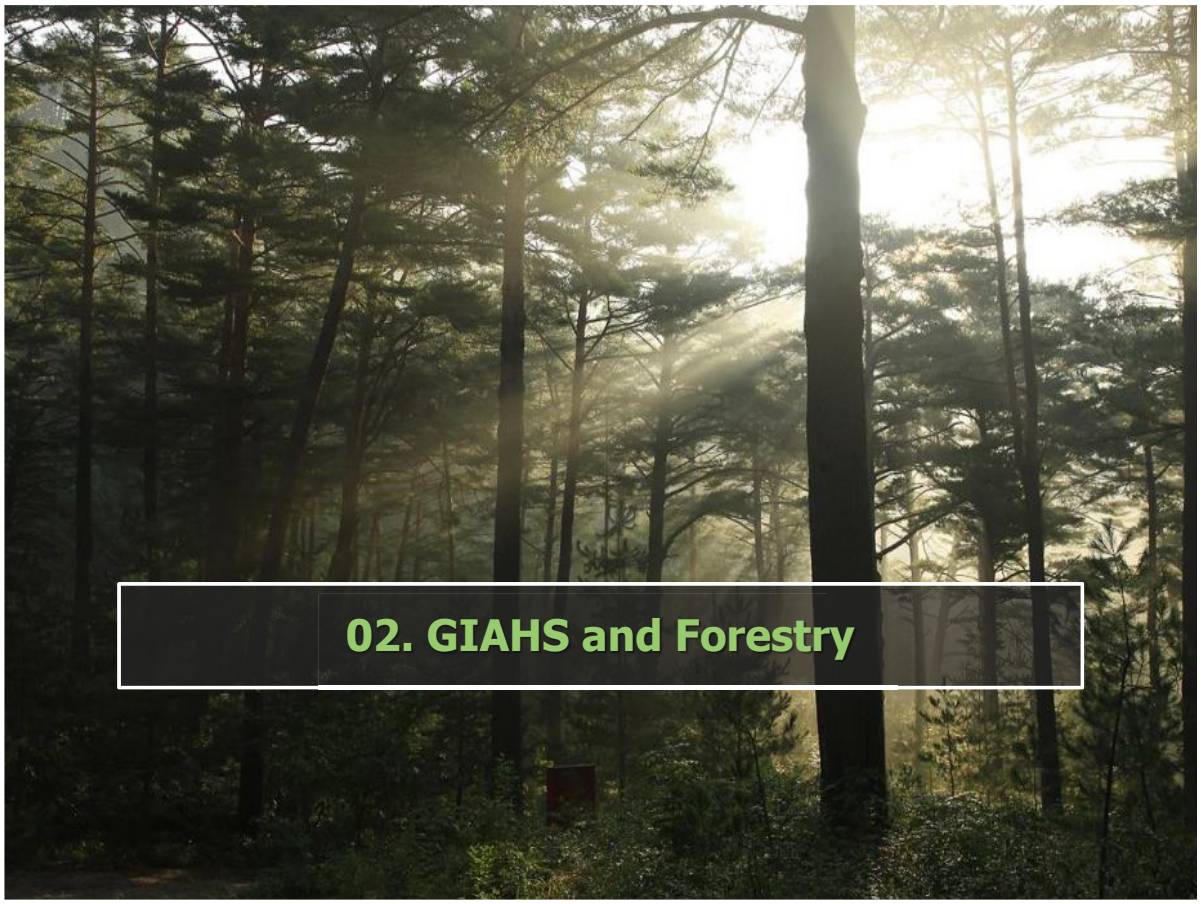

2-1. Introduction



GIAHS aims at..

- international recognition;
- dynamic conservation;
- adaptive management of the agricultural heritage systems; and
- Sustaining food and livelihood security

In addition..

- Forest components could be further identified; and
- Issues of restoration of degraded forest sites could also be included

2-1. Introduction



Forest heritage systems

Forestry components of heritage systems..

- Sustainable forest management;
- Non-timber forest products including wood energy; and
- Forest and landscape restoration including watershed management and agroforestry

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2-1. Introduction



Characteristics of Forests that Overlap with GIHAS

- High level of biodiversity, ecosystem services and regulators of ecosystem functions
- Agricultural ecosystem nurtured by traditional knowledge
- Preserving of rural heritage as agroforestry systems
- Resilience to changes caused by human and climatic environments
- Strong cultural values
- Build on ecosystem diversity as well as livelihood diversity
- Historical tradition and knowledge have evolved over the centuries
- Hold economic, environmental and cultural importance

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2-2. Key Initiatives in FAO Forestry Department



- Ongoing Agreement with IUFRO, signed in September 2012
  - Identify case studies and potential GIAHS sites
  - Planning and organizing seminars
  - Developing research activities
- Collaborating with initiatives that share similar interests
  - Global Partnership on Forest Landscape Restoration (GPFLR)
  - International Model Forests Network
  - Great Green Wall Initiative
  - Satoyama Initiative
- Forest and Landscape Restoration mechanism at FAO

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2-2. Key Initiatives in FAO Forestry Department



Global Partnership on Forest Landscape Restoration(GPFLR)





Biocultural Diversity

Traditional forest-related knowledge and history



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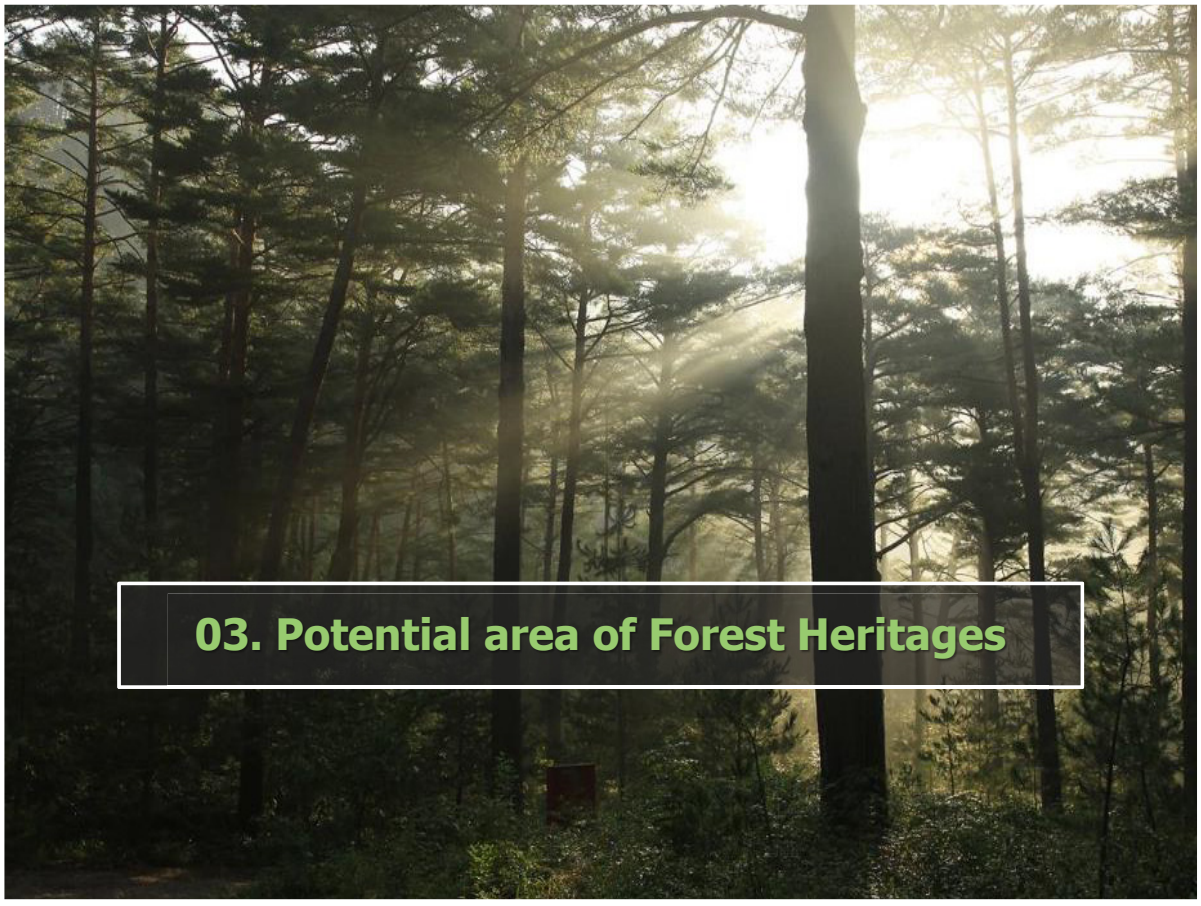
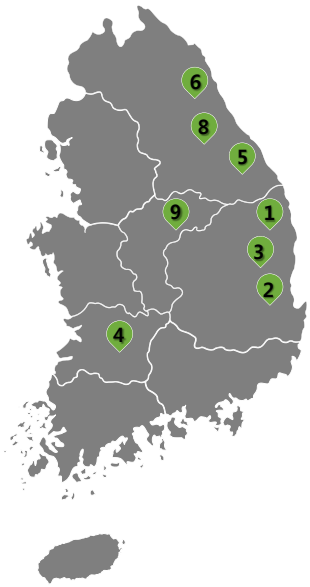


3.1 Potential Resources for Korean Agroforestry Heritage



List of agroforestry resources of great value



1. Geumgangsong in Uljin-gun



2. Town forests



3. Wild edible plants



4. Lacquer (漆) technique



5. Farming on the Baekdudaegan



6. Alpine agriculture



7. Timber carrier(log raft) in Jeongseon



8. Cultivating the paper mulberry and traditional Korean paper 'Hanji'



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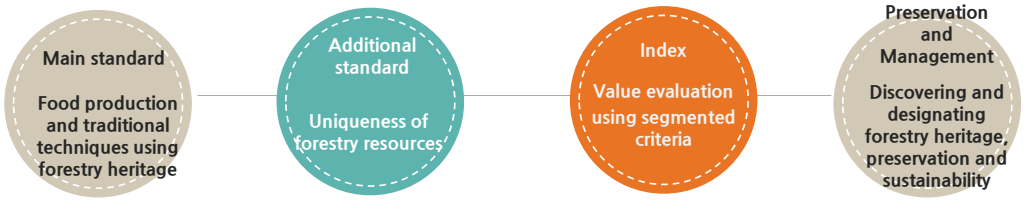
3.2 Standard of Value of Korean Agroforestry Heritage Resources



• Discovering agroforestry heritage by applying FAO GIHAS and MAFRA

Standard	Indicator	Element	History
Food and livelihood security	Conditions of forestry	Forestry environment, production, cultivation area and food culture	◎
Knowledge system And adopted technologies	Possession of trees and crops species	Unique forest resourses, traditional crops	◎
Biodiversity and Function of the ecosystem	Habitat conservation	conservation of ecological environment and habitat	
	Inhabitation of animals and plants	Diverse species of plants and animal	
-Culture and value system -Social organization	Passing down the forest culture	Rituals, festivals, forestry culture	◎
	Passing down the culture of mountain village	Food and living culture, community	
Enhanced management on landscape, land and water resources	Forest-scape	Livelihood of mountain village	
	Water landscape	Water landscape harmonized with forest resources	



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3.3 Forest Heritage in Korea



❒ Uljin Geumgangsong



Securing foods and means of living

Timber, pine mushrooms, wild edible plants





Management of landscape and water resources

Forest-scape, Forest Recreation
(e.g. Geumgangsong eco trail)



Biodiversity and Ecosystem

-Forest Landscape Conservation Area
-Protected Area for Forest Genetic Resources
- Habitat for endangered species (e.g. mountain goats, otter)

Knowledge systems and Applied technology



Mt. Hwangjangbong-san:
Management of red pine forest

Culture, value system Social organization



Roads used by merchant called 'Bobusang',
Pine forests management system



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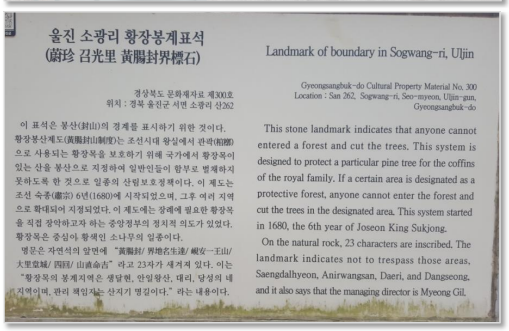
3.3 Forest Heritage in Korea



❒ Uljin Geumgangsong Pine Tree Forest

- Systemic management of the forest through the forest conservation and regulations









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3.3 Forest Heritage in Korea



❒ Town Forest







- To protect farmland from damages caused by wind and flood and to control microclimate
- To serve as eco-corridor connecting the ecosystem and boundary of the village
- To protect the village with Feng shui
- To offer a resting place

❒ Wild edible plants and food culture







- Main ingredients of Korean cuisine
- Used in temple cuisine and considered as healthy food
- Serve as hunger crops in difficult times
- A base of pyramid of the ecological system
- Joint management of cultivation and collection of wild edible plants

3.3 Forest Heritage in Korea



❒ Korean traditional lacquer technique









- Lacquer tree (*Rhus verniciflua*)
- Ivy tree (*Dendropanax trifidus*)
- Lacquer extracted from the lacquer trees is used for 'lacquer painting'

❒ Baekdudaegan/mountain agriculture







- Mountain ranges running through the Korean peninsula
- Areas where forestry and agriculture co-exist
- Maintain unique agriculture and living culture

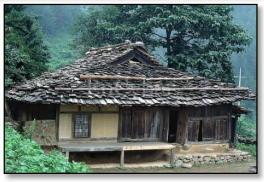
3.3 Forest Heritage in Korea



❒ Timber rafting in Jeongseon







- Timber rafting (traditional way of carrying timber)
- Related to a cultural meaning of a folk song 'Jeongseon Arirang'
- Unique housing style using timber

❒ Paper mulberry and Korean traditional paper







- Cultivating paper mulberry and making Korean traditional paper 'Hanji'
- Archival culture using 'Hanji'

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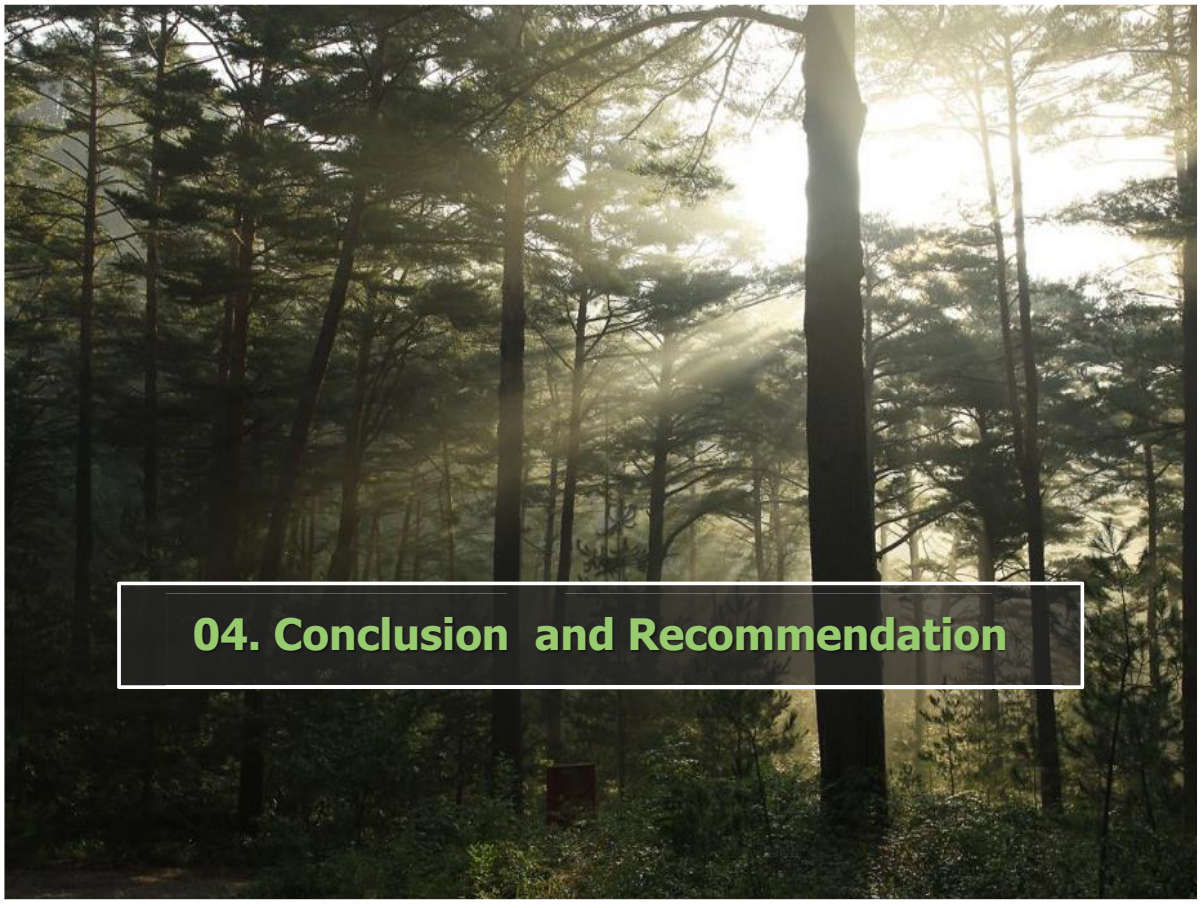

04. Conclusion and Recommendation

4.1 Conclusion and Recommendation



❒ Organized management through discovering the heritage of agroforestry resources



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Session I-3

『The Investigation of Environmental Changes of the World Heritage Hani Rice Terraces』

Mr. Huang, Shaowen (Professor, Honghe University

世界文化遗产哈尼梯田环境变迁调查研究

黄绍文　黄涵琪(英文翻译)
(红河学院民族文化遗产研究中心主任、教授)

The Investigation of Environmental Changes of the World Heritage Hani Rice Terraces

Huang Shaowen, Huang Hanqi

(Ethnic Cultural Heritage Research Center, Honghe University, Mengzi, Yunnan,)



引 言（Introduction）

哈尼梯田于2010年6月被联合国粮农组织正式列入世界农业文化遗产。2013年6月22日第37届世界遗产大会上，“哈尼梯田文化景观”列入世界遗产名录。哈尼梯田文化景观遗产是第一个以民族族称命名的世界遗产。

Hani Rice Terrace was officially included in the FAO World Agricultural Heritage in June 2010 and "Hani Rice terraced cultural landscape" inscribed on the World Heritage List in June 22, 2013, 37th World Heritage Conference. Hani Rice terraced cultural landscapes is the first world heritage site name after minorities .



人文学院

(一)哈尼族人口分布
Hani population distribution

- 全世界哈尼族有200多万人，其中，中国哈尼族163万余人，主要分布在云南省红河哈尼族彝族自治州、普洱市、玉溪市、西双版州。国外的哈尼族约50万人，分布在缅甸、泰国、老挝、越南4国的北部山区。
- There are more than 200 million Hani people in the world. China has more than 163 million Hani people which is mainly in Honghe state, Pu'er City, Yuxi City and Xishuangbanna state,Yunnan province. There are 50 million Hani people located in the mountains of northern Burma, Thailand, Laos, Vietnam.



人文学院

(二)哈尼族梯田分布区域
The Hani Rice Terrace distribution area

- 哈尼族的梯田分布在滇南哀牢山区，总面积达140多万亩。其中，红河州有100 多万亩，主要分布在元阳、红河、绿春、金平4县。普洱市有30万亩，主要集中在墨江县、宁洱县、江城县。玉溪市约有10万亩，主要分布在元江。
- Hani rice terrace has more than 140 million acres in total which is distributed in Ailao mountain,southern of Yunnan. Among them, the Honghe state has more than 100 acres, mainly in Yuanyang, Honghe, Luchun and Jinping County. There are 30 acres in Pu'er City, which is distributed mainly in Mojiang County, Ning'er County and Jiangcheng County. Yuxi City has more than 10 acres, mainly in Yuanjiang County.



人文学院

哈尼梯田区域分布示意图

Hani Rice Terrace area distribution diagram





人文学院

哈尼梯田立体分布

Hani Rice terrace three-dimensional distribution

- 哈尼梯田纵向空间分布，是在海拔300～2300米之间，集中分布区是1400～1800米之间，从低海拔至高海拔连片的梯田级数达3000多级。
- The vertical distribution of Hani rice terrace is between 300-2300 meters above sea level. The distribution area is concentrated between 1400 to 1800 meters above sea level and it is from low to high altitude terraces contiguous series of more than 3000 levels.



人文学院

梯田立体分布图

Hani Rice Terrace three-dimensional distribution diagram





人文学院

随山势展开的立体梯田

Hani Rice Terrace three-dimensional distribution diagram





人文学院

哈尼梯田文化遗产保护问题

The cultural heritage protection in Hani Rice Terraces

(一)生态系统功能下降，景区开发与景观破坏突出
(二)梯田面积萎缩，改变传统利用方式
(三)外来物种入侵造成梯田新的环境问题
(四)传统观念改变，梯田文化传承面临危机
(五)传统民居的变迁，导致梯田与村落和谐景观的消失



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- (一) The decline of ecosystem function and the serious destruction of landscape
- (二) Terrace area shrinking
- (三) Environmental problems of alien invasive species
- (四) The traditional concept changed, the cultural heritage of terraces facing the crisis
- (五) Changes in the traditional residential areas, leading to the disappearance of the harmonious landscape between terrace and the village



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（一）生态系统功能下降,景区开发与景观破坏突出

The decline of ecosystem function and the serious destruction of landscape

哈尼梯田在海拔1500米以下均为保水田，也是哈尼梯田的主体部分，但由于环境的变迁，每到枯水季，离沟水源较远的部分保水田也变成干田，导致栽秧时令也无法移栽秧苗。

The paddy field, is the main part of Hani terrace and it is below an altitude of 1500 meters of Hani terrace. Because of the changes in the environment, part of paddy field is far away the water resource, it will change to dry field in every dry season.



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1、水源减少的三个因素

Three Factors of water reduction

一是在市场经济的驱驶下，改变水源林的生态结构。许多村寨的旱地、荒山，砍伐灌木林后大量栽种了杉木林，从涵养水分功能来讲，杉木虽然是经济木材，但吸水力强，其林下较为干燥，从而导致水源林涵养水分功能的减退。

Under the driving of the market economy, the ecological structure of the forest is changed. Many villages began to plant Chinese fir. From the perspective of water conservation function, Chinese fir has a strong water absorption, and it will resulting in forest conserve moisture function decline.



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水田变旱地种植杉木

Planting Chinese fir in dry land





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- 二是生态系统功能下降。元阳县1985年森林覆率只有12.9%，但灌溉水资源还是比较充足。2003年以来实施退耕还林等生态工程之后，至2014年森林覆率上升到43%,哈尼梯田遗产区的森林覆盖率达67%。但由于遗产区50%的植被属于次生退耕还林，涵养水源的生态功能下降，导致枯水季不能保证梯田水源。
- Ecosystem function decline. In 1985, the forest coverage rate of Yuanyang county was only 12.9%, but the irrigation water resources were adequate. Since 2003, after the implementation of the ecological engineering of returning farmland to forest, the forest coverage rate rose to 43% in 2014, and the forest coverage rate of Hani's terrace area was 67%. But due to the heritage area 50% of vegetation is secondary returning farmland to forests, water conservation ecological function decline and can not guarantee the terraced field water in dry season.



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三是全球气候变化，2009年以来连续干旱的背景下，哈尼梯田的“绿色水库”水量缩减，导致工程性缺水较为严重。导致栽秧时节无水流，雨水季节泛滥洪灾，由此水资源平衡被打破，造成部分梯田得不到有效灌溉，面临干涸危机。

- Because of the global climate change and continuous drought since 2009, the water of Hani terrace reduced. This resulted in a serious water shortage and water resources balance is broken. Part of the terrace is not effective irrigation and facing a crisis of dried up as well.



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一年四季的保水梯田

Hani Rice Terrace





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2、箐口梯田景观前后对比图

Qingkou terraced landscape

箐口地处梯田风景核心区，村落磨菇房与梯田合二为一体，民风纯朴，具有典型的哈尼族传统村落生态文化。凡是来元阳游客都要在箐口村西南面的公路边停下来远眺东北方向的箐口村落画面。

Qingkou village is the core area of the terraced landscape. It is a typical traditional Hani village.



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不同季节的箐口梯田景观

Hani Rice Terrace in different seasons

箐口冬春景观(2006年初春摄)
Winter (2006)

箐口村初秋景观(2006年9月摄)
Autumn(2006)





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箐口村生态文化

Ecological culture in Qingkou village

箐口村祭山神的地点位于村西南4千米处的一座小山包丛林中，森林面积约50亩，其周边还有约500亩的荒地，是村民的放牧场，其下方有层层梯田分布。因此，这片神林实际上既是宗教活动地点，又是生态系统良好的水源林。

The sacrificial ceremony site in Qingkou village is a hill which is located in the southwest of the village. On this mountain, there are 50 acres of forest area, 500 acres of wasteland and it has layers of terraced fields distribution. Therefore, this mountain is actually the site of religious activities, but also a good ecological system of water forests.



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箐口村民山祭祀神林

sacrificial ceremony





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“美丽家园”建设中箐口景观被毁

"Beautiful home" policy destroyed Qingkou landscape

2013年实施 “哈尼梯田小镇”建设选址就在箐口神山林周边，由此破坏了梯田与森林层层相映的村落景观，神林外围已盖起了一栋栋“蘑菇房别墅”。由于这座神林及缓冲区的牧场植被破坏，其下方的梯田早已干涸。我们可以从以下“开发”前后的图片中可得到印证。

In 2003, the site selection of “Hani town” was in the surrounding mountains of Qingkou. Because of the construction of “Hani town”, the terrace and the forest layers landscape were destroyed.



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梯田景观破坏前后对比图

The comparison chart of Terrace landscape

景观破坏之前(13年6月5日摄)
Before the damage of landscape (2013)



景观被毁之后(2014年5月28日摄)
After the damage of landscape(2014)



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森林—村寨—梯田美丽的箐口景观不复存了，新建的“别墅”及延伸的公路破坏了原有的箐口梯田自然景观。The new "villa" and the extension of the highway destroyed the original natural landscape.(2015年3月9日摄)





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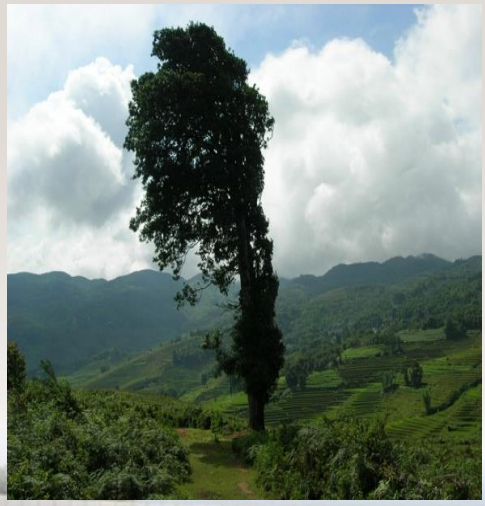
神山神林没有毁之前(2006年6月11日摄)

Before the destruction of the forest(2006)







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曾经“老外”也要考察的神山神林，如今成为“美丽家园的别墅区”

The villa area (after the destruction of the forest)





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(二) 梯田面积萎缩，改变传统利用方式

Terrace area shrinking

- 21世纪初期以来元阳梯田环境的另一大变迁是水田改旱地。由于海拔1200米以下的土地适宜发展热带水果，其中，香蕉是元阳县的水果支柱产业。
- Since the beginning of twenty-first Century, the other major changes in the field of Yuanyang terraces are the changes of paddy field to dry land. Due to an altitude of 1200 meters below the land suitable for the development of tropical fruit, in which the banana planting is the pillar industries in Yuanyang county.



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- 2009年香蕉市场价格4元/千克，由此热区部分梯田成为开发香蕉基地的对象，如俄扎乡3000多亩哈播梯田，当地农民经营了数百年的水稻种植如今变成一年四季都是一片葱绿的香蕉基地。
- Because of the banana market price of 4 yuan / kg, some terraced fields change to banana fields, such as Ezha village. There are 3000 acres terraced fields before, but now become banana fields.



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哈播梯田变成四季葱绿的香蕉地

Terraced fields change to banana planting





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2009年以来的西南大干旱背景下，遗产区的部分梯田也改为旱地种植玉米、黄豆等作物。最典型的是攀枝花乡保山寨梯田和老虎嘴梯田先后有2000多亩梯田改为旱地种植玉米、黄豆。

Since 2009, because of the drought in the southwest of China, the part of the field has changed to dry land to grow corn, soybeans and other crops. Baoshanzhai terraced field in Panzhihua and Laohuzui terraced field have more than 2000 acres of fields chang to dry land to grow corn and soybeans.



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老虎嘴梯田是哈尼梯田世界遗产区的主要景观之一，2每当秋收之后至第二年春季栽秧之前都是波光粼粼的梯田景观，期中有一块造型远望形如奔驰的骏马，在每当夕阳西下晚霞的映照下显得特别壮观。如今由于水改旱地而骏马的胫部、腹部等许多地方出现了斑痕，晚霞映照下神奇的骏马不复存了。

The Laohuzui is one of the main landscape of Hani rice terrace. One of terraced field in Laohuzui likes the galloping horse after the time of harvest to the spring of the coming year. But now, because of some terraced field change to dry land, a beautiful sight doesn’ t exist any more.



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据2015年3月调查，2009～2014年末元阳县梯田改旱地面积共34557亩，其中涉及梯田遗产区新街、攀枝花、黄茅岭乡的梯田改变土地利用方式的5118亩，占元阳县改变梯田利用面积14.85% 。如此下去，保护遗产区梯田不容乐观。

According to the survey in March ,Yuanyang terraced field change to dry land area is 34557 acres between the year of 2009 to 2014.It includes the terraced heritage area Xinjie, Panzhihua, Huangmaoling. Faced with such situation, to protect the heritage area of the field is not optimistic.



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2008年以前攀枝花乡老虎嘴俊马梯田春季景观
Laohuzui Hani Rice Terrace (2008)





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如今老虎嘴俊马梯田夏初景观（2015年5月29日摄）
Laohuzui Hani Rice Terrace (2015)





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遗产区攀枝花乡螺丝田（2005年1月摄）
Heritage area in Luositian, Panzhihua(2005)





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遗产区攀枝花乡螺丝田（2001年2月6日摄）
Heritage area in Luositian, Panzhihua(2001)





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遗产地攀枝花乡螺丝田现状（2016年5月3日摄）
Heritage area in Luositian, Panzhihua(2016)





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螺丝田周边梯田的变迁（2016年5月3日摄）
Changes of Terrace in Luositian (2016)





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(三)外来物种入侵梯田的环境问题

Environmental problems of alien invasive species

21世纪以来，外来生物物种入侵不得引起高度关注，其中克氏螯虾的入侵造成梯田新的环境问题。克氏螯虾在当地俗称“小龙虾”，原产北美洲，虾产卵繁殖力惊人，一尾母虾孵化幼仔100～300只。小龙虾对梯田的最大危害表现在以下几个方面：

Since the 21st century, the crayfish invasion caused new environmental problems in terraced fields. Procambarus clarkii in local commonly known as "crayfish", native to North America.The dangers of the crayfish in the terraced fields as following:



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第一，由于小龙虾善于掘洞，洞深可达1.5至2米，因而常常威胁到田埂、堤坝的安全。导致梯田里的水关不住，甚至使得田埂垮塌。

第二，除了掘洞，小龙虾还吞食梯田生物，严重地威胁到梯田生物多样性。据调查，在小龙虾较多的田块，梯田鱼自身已无法进行繁衍，泥鳅、黄鳝等也越来越少了。

First of all, the crayfish are good at digging. The depth of hole up to 1.5 to 2 meters, which often pose a threat to the safety of the ridge.

Secondly, crayfish eat the living beings in the terrace. It is a serious threat to the biodiversity of terraced fields.



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- 小龙虾入侵元阳梯田的时间在2007年前后。入侵途径大致是当地人到建水等地打工时见龙虾在街上被一盆盆地摆着卖，认为市场前景好就将其作为美食引入元阳梯田。由于龙虾具有惊人繁殖力和超强生存能力，种群规模扩展很快
- Crayfish invaded Yuanyang terrace in 2007. The local people believed that crayfish would valuable in the market. So The crayfish were being introduced in the terraced field of breeding. But the crayfish has a remarkable fecundity and the number of crayfish has expanded rapidly.



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外地市场大盆出售龙虾

crayfish





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2015年2月当地居民从梯田中捉龙虾出售

crayfish





人文学院 (四) 传统观念改变，梯田文化传承面临危机

The traditional concept changed, the cultural heritage of terraces facing the crisis

梯田农耕技术是哈尼族千百年来传承下来的治家本领，在20世纪80年代，年轻人仍然一丝不苟地学习前辈的耕作技术。按哈尼族传统衡量年轻人的人才标准，小伙子帅不帅，不是看他的相貌身材，而是看他的耕田技术如何，如果小伙子是犁田、耙田、筑田埂的能手，就会得到大众的称赞，也就会赢得姑娘们的青睐。

Terrace farming technology has been handed down through the ages for Hani people. In the 1980s, young people still learning farming techniques from seniors. From Hani’ s traditional view, if a man has a good farming technique, he will get the love from girls.



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- 到了20世纪90代后，农民的温饱问题已解决。市场经济为主导下的社会文化背景促使青壮年外出打工，由此引发传统梯田农耕管理观念的改变，今天活跃在梯田里耕作的都是中老年人，年轻人都在外面打工，甚至个别地区的梯田被放荒，梯田文化的传承面临危机。
- During 1990s, for farmers, the problem of food and clothing has been solved. Under the background of market economy, young people have learned that they have to migrate if they want to survive. Only old people stay to farming in Hani village. Because of the change of traditional terraced farming concept, terraced fields culture faced a crisis.



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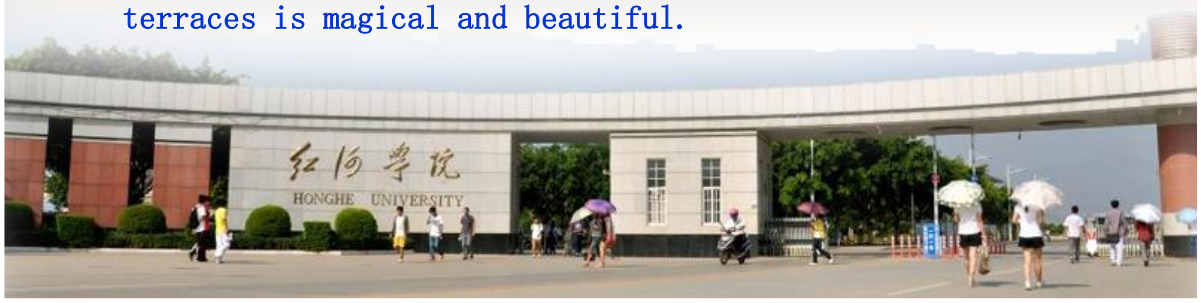
（五）传统民居的变迁，导致梯田与村落和谐景观的消失

Changes in the traditional residential areas, leading to the disappearance of the harmonious landscape between terrace and the village

哈尼族传统民居村落星罗棋布地散落在半山腰间，远望其形犹如朵朵蘑菇，故称“蘑菇房”。哈尼山寨的蘑菇房，在层层梯田环抱下显得神奇美丽、生机盎然。在夕阳下余辉闪闪的梯田和早晨哈尼山寨吹烟袅袅的蘑菇房成为人与自然和谐的美景！

Hani's traditional villages scattered in the mid waist afar shaped like a mushroom, it referred to as the "mushroom house". Hani mushroom house, surrounded by layers of terraces is magical and beautiful.



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20世纪90年代中期后，随着自然环境的变迁，建筑用材山茅草逐年减少，梯田推广杂交稻后，稻秆短小，不宜做屋顶覆盖的材料。到了21世纪初期，在西部大开发力度的加强，蘑菇房成为落后的代名词，在当地政府彻底消除蘑菇房的号令声中，哈尼山寨都变成白华华一片石棉瓦房，失去了往日哈尼村寨的特色。

After the mid 1990s, with the changes of natural environment, the construction material of thatch is reduced year by year. When the promotion of hybrid rice terraces, rice straw becomes short and it is not suitable to do the roof covering material. At the beginning of the 21st century, the mushroom house becomes synonymous with backwardness. The local government ordered thoroughly demolition of traditional mushroom room. As a result, there are many tile-roofed house in Hani village now and they lost the characteristics of Hani villages in the past.



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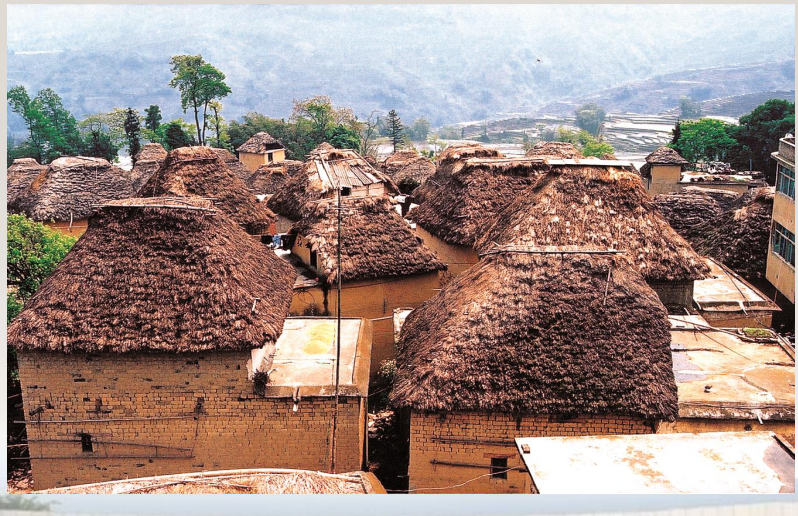
和谐的哈族尼传统村落景观(1990年12月摄)

Hani traditional village landscape(1990)





2004年箐口村落景观：错落有致的传统蘑菇房
Traditional Hani mushroom house



“专家”对哈尼族“蘑菇房”民居设计图
Hani mushroom house (designed by architecture experts)



哈尼族民居（图一）

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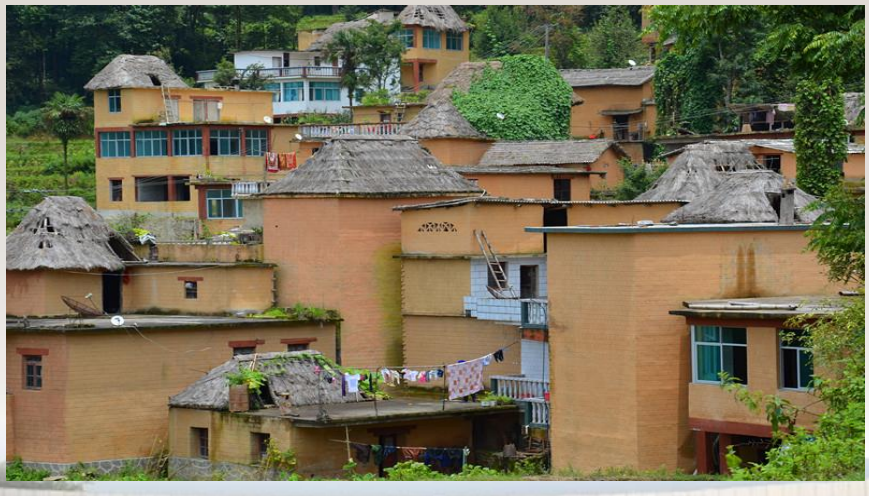
当地政府主导下“专家”设计改造的蘑菇房
被当地居民称为“穿衣戴帽”工程

Hani mushroom house (designed by architecture experts)





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“专家”设计的“蘑菇房”实践

Hani mushroom house (designed by architecture experts)





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结论：水稻种植是梯田保护的核心

Conclusion: Rice cultivation is the core of protection of Hani Terraces

水稻种植是梯田可持续发展的标志，也是梯田活态遗产的标识。多样性品传统种植，不仅体现生物多样性，而且体现活态稻种基因库。

Rice cultivation marks sustainable development and the living heritage of Hani terraces. Traditional planting represents the biodiversity and reflects the living rice gene pool.



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优质的传统品种，既是绿色食品，又能体现经济价值。人们在水稻种植中获得较高的经济利益后，就能传承梯田农耕文化，自然就保护了梯田，也就实现了可持续发展。

Quality traditional rice variety is not only green food, but also valuable. If people get high economic benefits in rice cultivation, they will pay more attention to inherit farming culture. It will achieve sustainable development because of protection of Hani rice terraces.



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结 语（Conclusion）

最后用两句哈尼族语言结束我的发言

Finally ,I will say a few words of blessing in Hani language：

Col jol bi sal,gaoq laoq bi meeq（Hani language）

意为：身体健康，吉祥如意！Good health, good luck!

谢谢！Thank you!



Session I-4

『The Balance of Categories of Agricultural Heritage Systems』

Ms. Liu, Hongying (Professor, China University of Political Science and Law)

THE BALANCE OF CATEGORIES OF AGRICULTURAL HERITAGE SYSTEMS

Prof. Liu Hongying

June 14, 2016
Korea

FOREWORD

Agricultural heritage systems will not be able to play a catalytic role for sustainable development in their region if it's imbalance between the types.



1 THE UNIVERSAL VALUE AND CATEGORIES OF AGRICULTURAL HERITAGE

- Traditional agriculture systems are still providing food for some two billion people today. They also sustain biodiversity, livelihoods, practical knowledge and culture.
- According to FAO, this global agricultural heritage needs to be recognized and supported in ways that allow it to continue evolving and provisioning goods and services for the present and future generations.

HOW DOES THE DIVERSITY OF "SYSTEMS" REALIZE ?



2 THE BALANCE OF CATEGORIES AND THE TARGET PATTERNS OF AGRICULTURAL HERITAGE

The concept of agriculture heritage is a broad sense.

- Farming
- Forestry
- Animal husbandry
- Fishing
- Hunting



FAO'S TYPES

- Mountain rice terrace agro-ecosystems.
- Multiple cropping/polyculture farming systems.
- Understory farming systems.
- Nomadic and semi-nomadic pastoral systems.
- Ancient irrigation, soil and water management systems.

FAO'S TYPES

- Complex multi-layered home gardens.
- Below sea level systems.
- Tribal agricultural heritage systems.
- High-value crop and spice systems.
- Hunting-gathering systems.

3 THE COMPLEXITY FROM THE BALANCE OF CATEGORIES AND POSSIBLE PROBLEMS

Challenging Task



FOR EXAMPLE

- The repetition rate is higher.
- The homogeneity is obvious.





FOR EXAMPLE

- High-value crop projects.
- Focusing on the commercial results.







POLICY

- Equilibrium
- Typicality

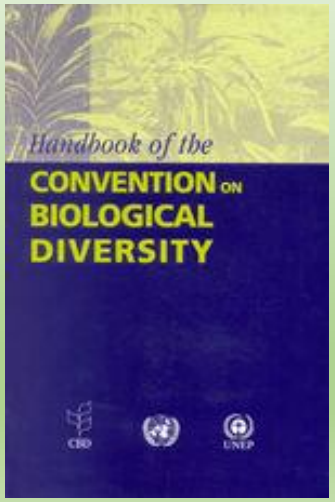
4 ACHIEVING THE BALANCE OF CATEGORIES IN AGRICULTURAL HERITAGE VALUES

GIAHS is distinct from, and more complex than, a conventional heritage site.





BY LEGAL SYSTEM



- Emphasis on cultural ecology and natural ecology indivisible oneness.
- Find the right path to the future of mankind.

감사합니다.

Session I-5

『The Evaluation on Ecosystem and Its Ecological Compensation in Honghe Hani Rice Terraces System, Yunnan Province』

Mr. Liu, Moucheng (Associate Professor, IGSNRR, CAS)

The evaluation on ecosystem and it's eco-compensation in "Honghe Hani Rice Terraces System", Yunnan Province

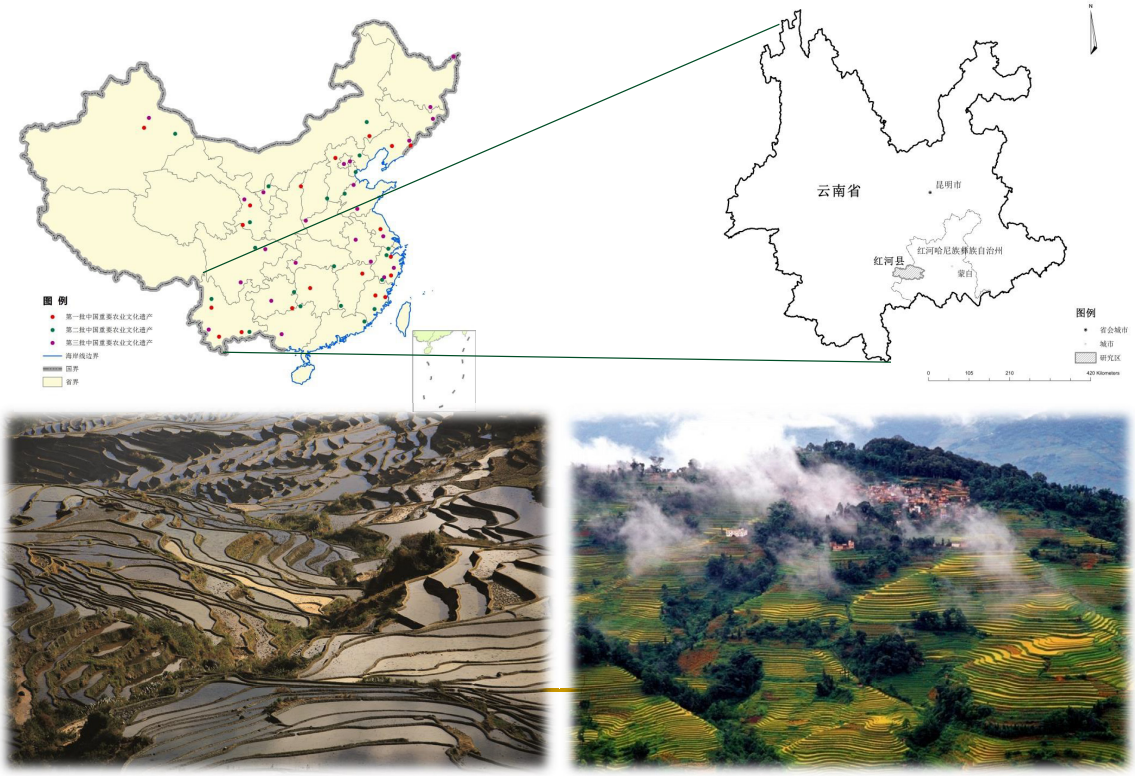
Liu Moucheng
Associate Professor
Institute of Geographic Sciences and Natural Resources Research, CAS

Content

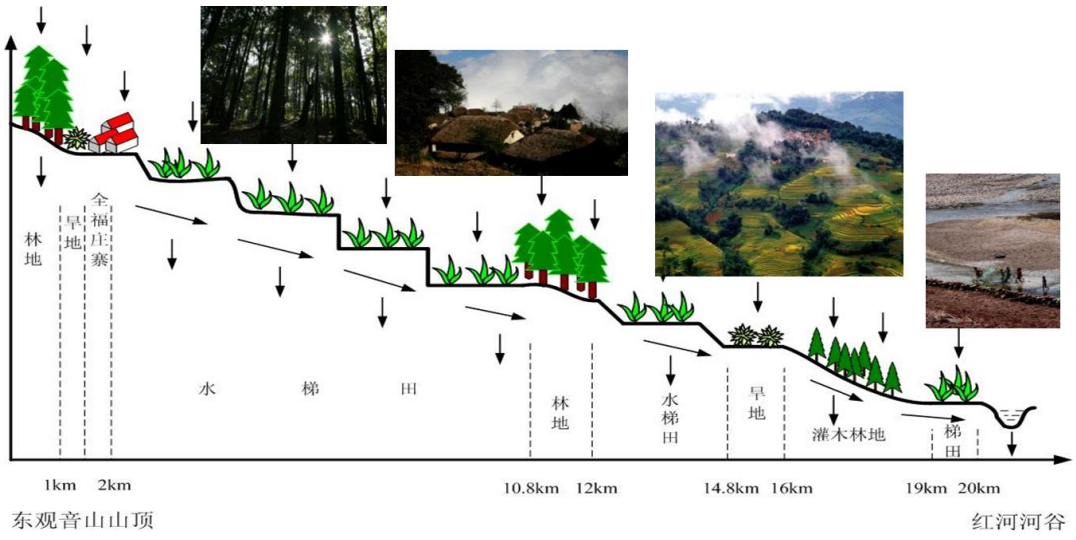
- **Honghe Hani Rice Terraces System**
- **Eco-service evaluation**
- **Eco-compensation mechanism**



Hani Rice Terraces（2010. 6）



Landscape Structure



Rice-fish system





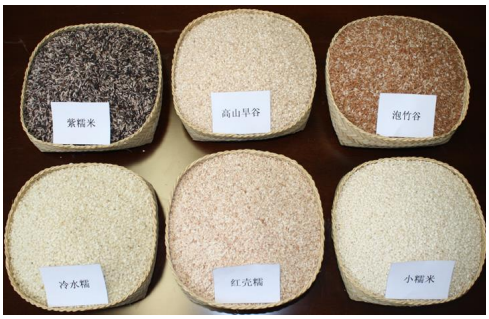

Table 1 The density of weeds in R-F (rice-fish eco-agriculture) and HR (hybrid rice monoculture)

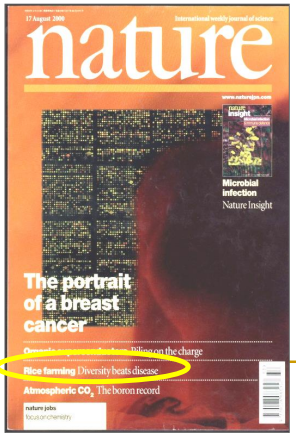
Weed species	Density	
	HR	R-F
Ceratophyllum demirsum	32[a]	7.6[b]
Potamogeton distinctus	12[a]	0[b]
Sagittaria pygmaea	12.6[a]	0.2[b]
Hydrila vercillata	6.2[a]	0[b]
Monochoria vaginalis	7.9[a]	0[b]
Rotala indica	6.4[a]	0.6[b]
Salvinia natans	3.8[a]	0[b]
Ottelia alismoides	3[a]	0[b]
Utricularia aurea	2.4[a]	1[b]
Eleocharis yokoscensis	4[a]	0[b]
Sagittaria sagittifolia.	2.2[a]	0[b]
Marsilea quadrifolia	1.6[a]	0.8[b]
Echinochloa crusgalli	0.2[b]	0.2[b]
Eleoohayis plantagineif	0.2[a]	0[b]

Note: the same row followed by common letters (a, b) is not considered significantly different on a 0.05 level.

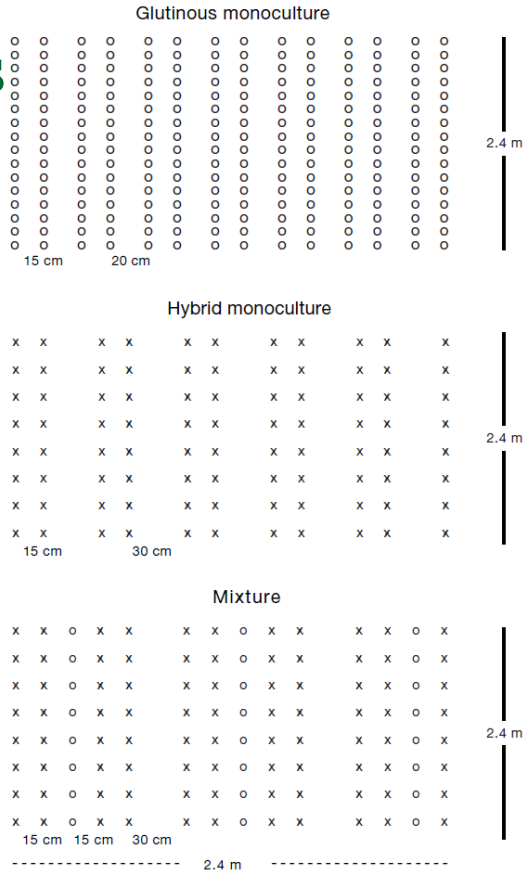


Diversified rice crops

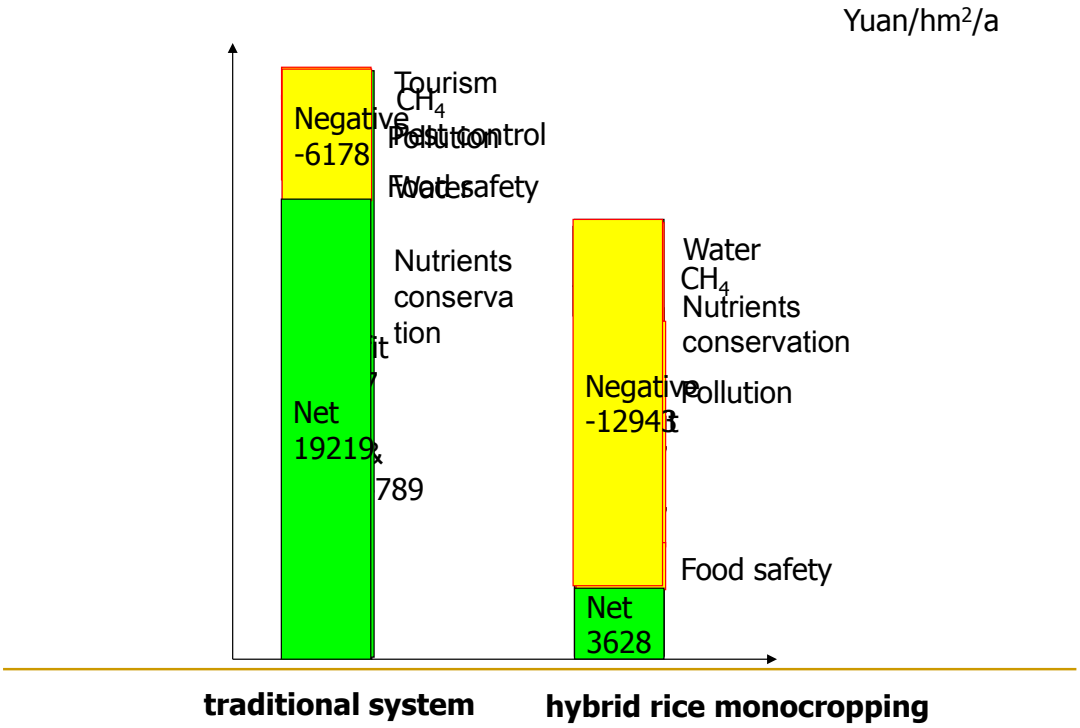




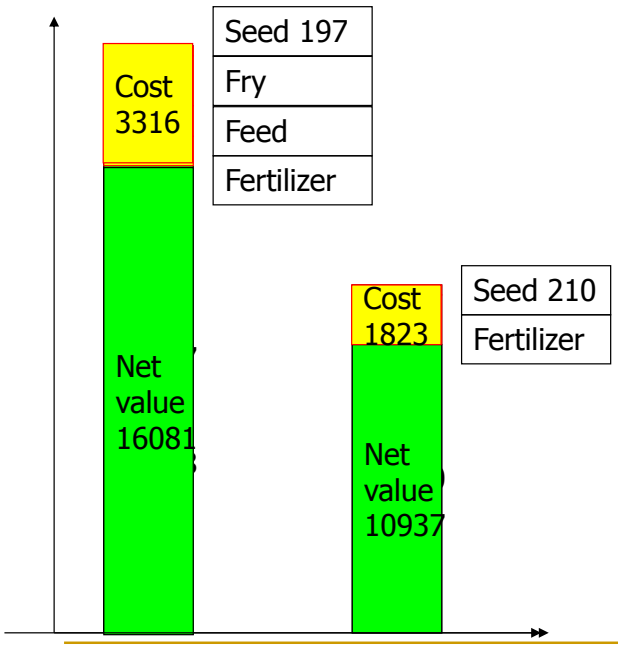




Eco-services Comparison



Economic value



1. ROI

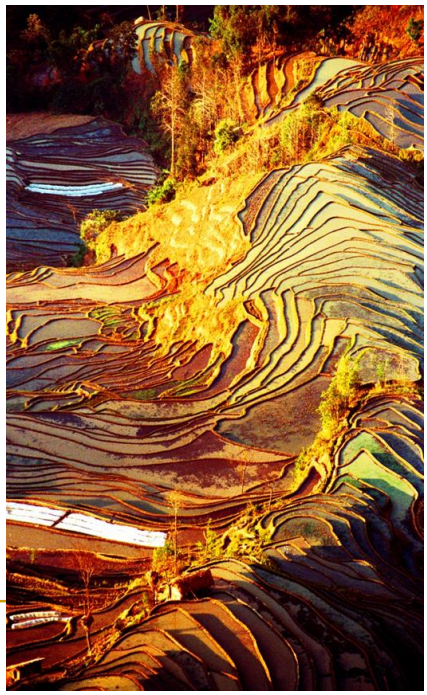
	ROI	ROI rate
Tradition	1 : 5.8	485%
Hybrid	1 : 7.0	599.9%

2.Opportunity of labor Yuan/a

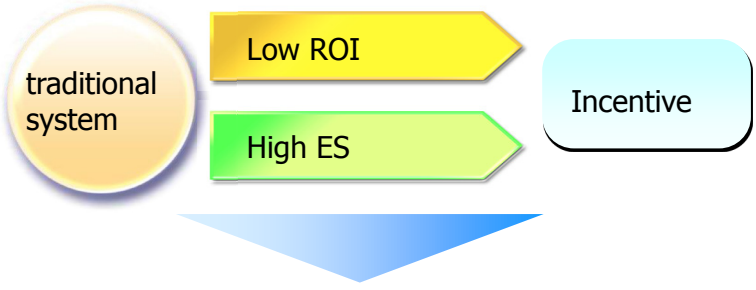
	Industry	Tradition	Hybrid
Net Income	6300	3216	2188

Threats

- the low yield of traditional rice varieties
- the loss of young labor forces in rural area
- the mono-cropping of high-yield hybrid rice
- the usage of the chemical fertilizers and pesticides
- the local water and soil environment pollution



Eco-compensation——crash subsidy



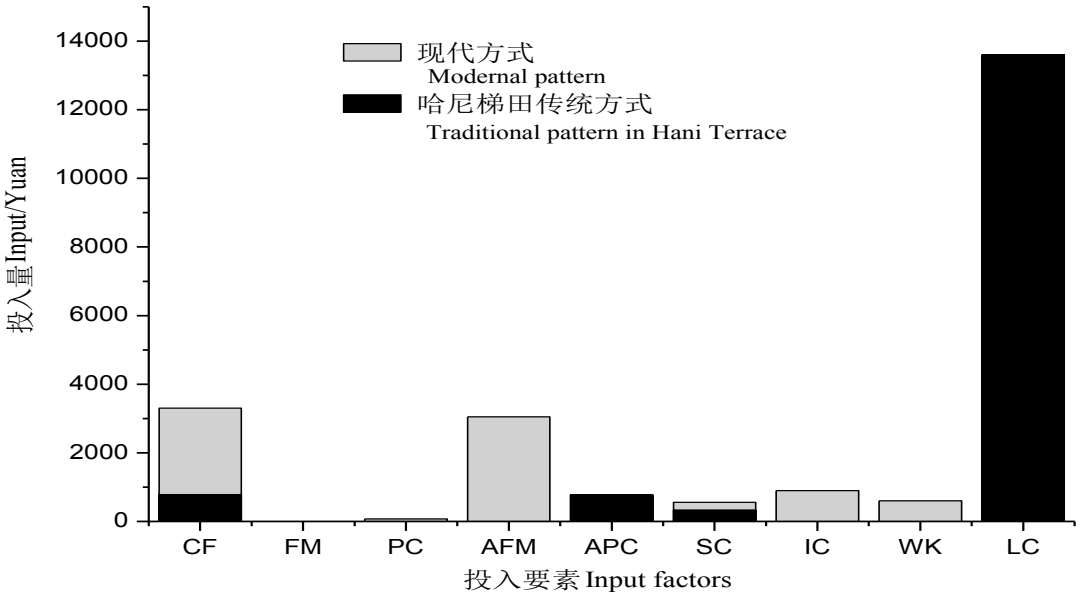
	Farmers		Government	
Standard (Yuan/hm^2)	ROI	Net Income (Yuan/hm^2)	Cost (Yuan/hm^2)	Benefit (Yuan/hm^2)
974	1: 7.0	17055	974	7447
1136	599.9%	17217	1136	7447

Eco-label certification

- It must go through a stage of organic conversion from non-organic producing to organic producing.
- The local government should pay farmers during organic conversion period, to incentive farmers inherit traditional environment-friendly technology.

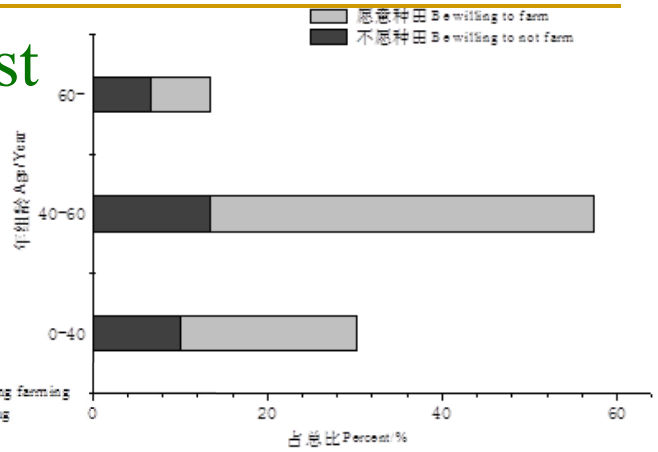


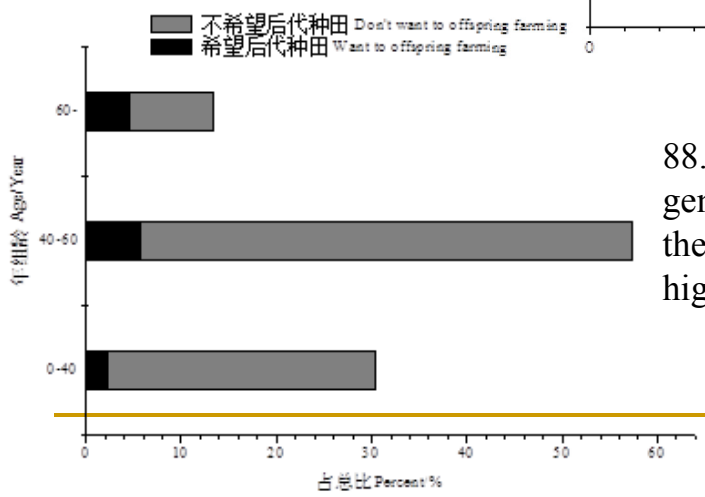
Input & Output



Opportunity cost

Labors of young adults prefer to work or live in city for higher income in cities.





88.7% don't want their next generation to farm. therefore, its opportunity cost is higher.

Eco-compensation——rice price

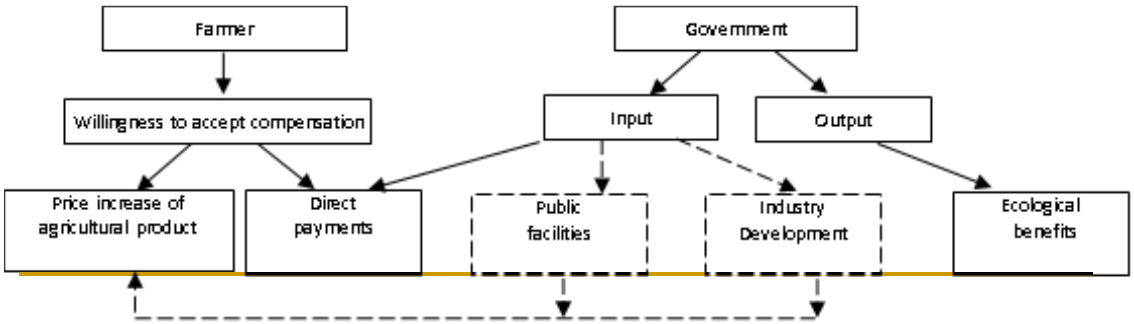
- If paddy rice price is 9.52 Yuan/kg, it is reasonable for protecting terrace landscape and traditional planting pattern in Hani terrace region
- Now, the purchase price is 3.84 yuan/kg, and the extra compensation price is just 5.68 yuan/kg



	Input	Output		Benefit
	yuan/hm^2	Kg/hm^2	yuan/hm^2	yuan/hm^2
Tradition	15476.5	5250	14175	-1301.5
Hybrid	6470	8250	22275	15805

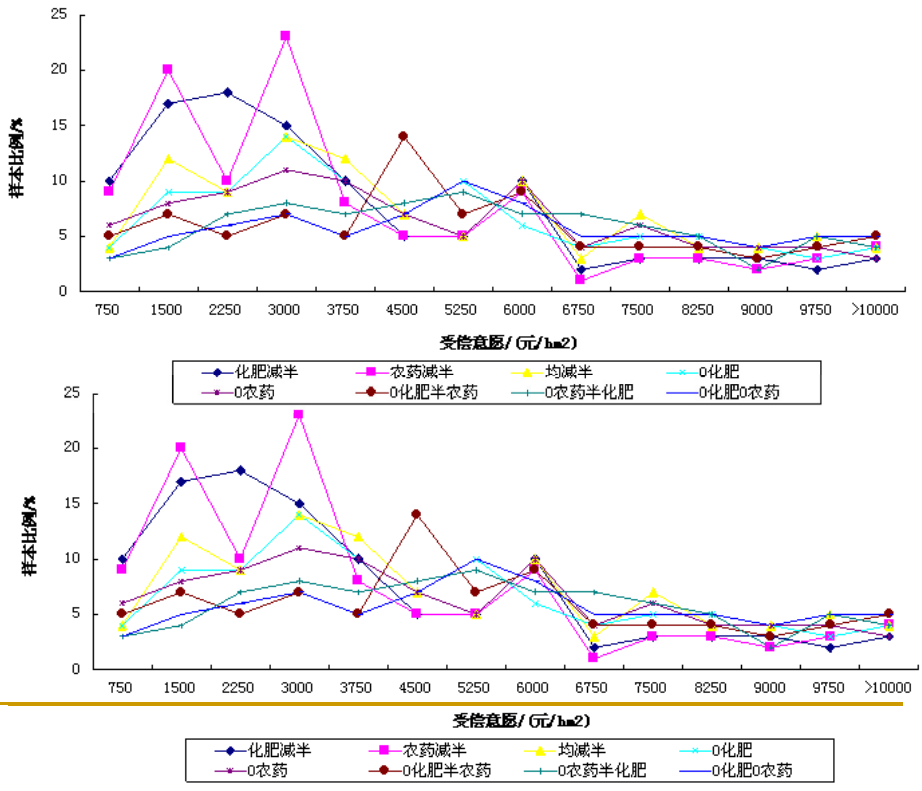
Eco-compensation——Integrated Approach

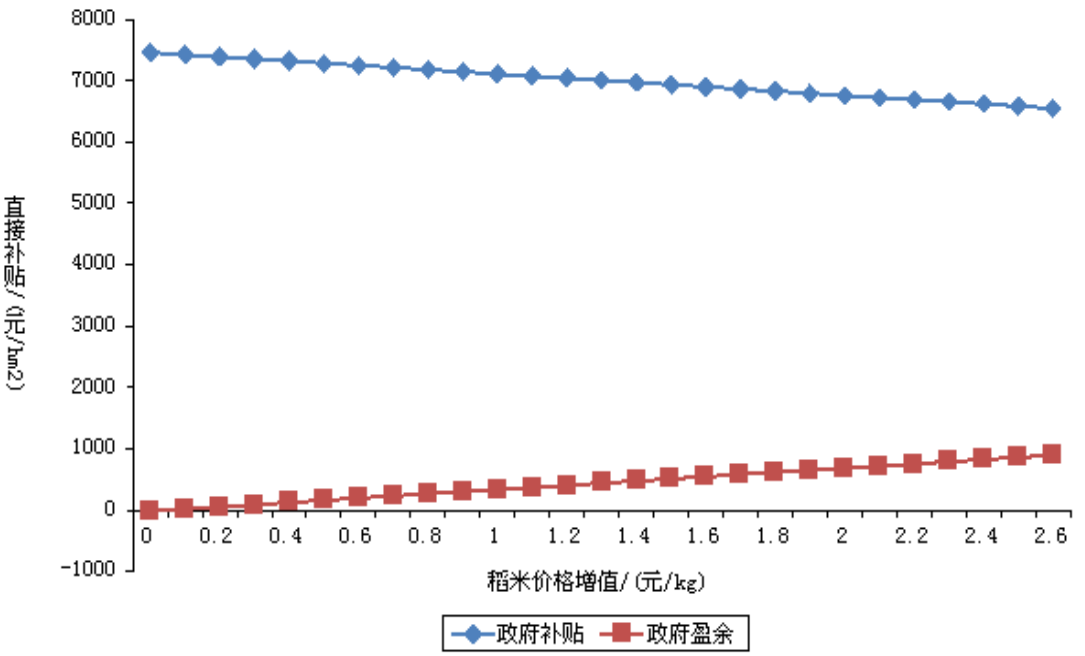
- Government pay farmers to shift cultivation method
- Local ecosystem would become better
- Eco-label could be used
- With the industry development, the income of agricultural activities increase
- The direct payments to farmers could be reduced



Direct cash subsidy

Rice pricing





Conclusions

- Demand for environmental services from agriculture will increase
- GIAHS can provide a better mix of ecosystem services to meet society's changing needs
- If farmers are to provide a better mix of ecosystem services, better incentives will be required. Eco-compensation can help.
- Cost-effective Eco-compensation mechanism require careful design based on the characteristics of the service and the biophysical and socio-economic context.

Thanks!

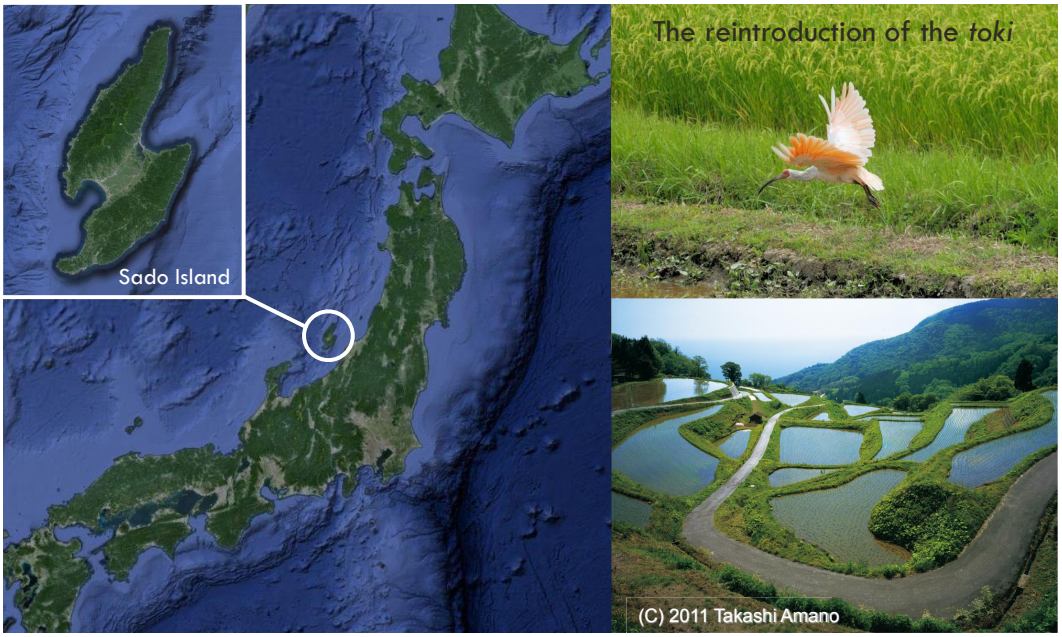
Session I-6

『Creating A Collaborative Platform for Agrarian Community Development on Sado Island』

Ms. Mitsuyo Toyoda (Professor, Niigata University)

CREATING A COLLABORATIVE PLATFORM FOR AGRARIAN COMMUNITY DEVELOPMENT ON SADO ISLAND

Mitsuyo Toyoda
Niigata University
Center for Toki and Ecological Restoration



RICE FARMING FOR THE CONSERVATION OF BIODIVERSITY

●Toki Brand Rice Certification Initiative started in December 2007

Farmers must …

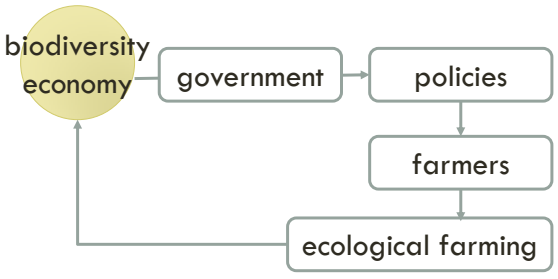
- be approved as Eco-Friendly Farmers.
- apply 50% or less of agrochemicals of conventional farming.
- perform biological surveys twice during the cultivation period.
- implement one of four biodiversity-enhancing practices.

Biodiversity-enhancing practices



Ushio et al., "Effectiveness of Wildlife-Friendly Farming on Aquatic Macroinvertebrate Diversity on Sado Island in Japan," *Social-Ecological Restoration in Paddy-Dominated Landscapes* (Tokyo: Springer Japan, 2014).

GIAHS AS THE OPPORTUNITY FOR DEMOCRATIC TRANSFORMATION



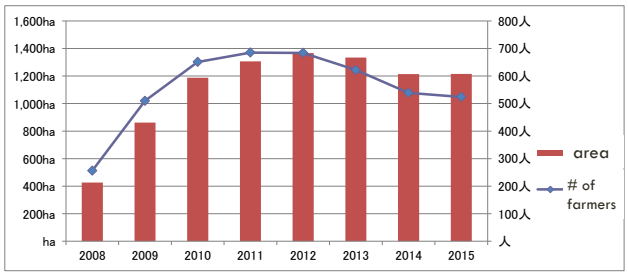


Table | the change of the area and number of farmers engaging in the system (Sado-City)

What values do farmers find in ecological farming?
Is it possible to design a participatory decision system that allows farmers express their concerns?

DESIGNING COLLABORATION AMONG VARIOUS PARTICIPANTS

My research interests: Environmental Ethics, Consensus Building and Dialogical Inquiry

Open forum Public dialogue → Sharing voices & interests → Deliberation for problem solving → Action



THE LADDER OF CITIZEN PARTICIPATION

8 citizen control
7 delegated power
6 partnership
5 placation
4 consultation
3 informing
2 therapy
1 manipulation

Sherry Arnstein, 1969

What are difficulties of achieving deeper participation?
Is it possible to develop partnership among various stakeholders?

Based on farmers' voices, the government designs the system.

The government designs the system without sufficient consideration of local voices.

PUBLIC FORUM TO DISCUSS THE CURRENT SYSTEM



Farmers who engaged in rice authentication system assembled in order to discuss the merits and problems of current system.

VOICES OF FARMERS

- Many farmers enjoy the biological survey especially because it is a great opportunity to work with children.
- Some farmers think that it is better to set fewer requirements so that more people engage in ecological farming, while others think it is better to set higher goals in order to produce high quality rice.
- The same system is applied to all regions of the island. It thus needs to be reconsidered taking into consideration diverse topographical characteristics.

CHALLENGES

✓Is grass-root policy making possible?

✓The current system is applied to all regions on Sado Island. How is it possible to take into account diverse topographical conditions in policy making and to empower people towards conserving local agriculture?

✓For GIAHS to be sustainable, it needs to be regarded as an opportunity for democratic agricultural movements. How can we empower various stakeholders as decision makers and facilitate collaboration among them?







Developing good practices of collaboration connecting various generations

Thank you very much!



Mitsuyo Toyoda
toyoda@cc.niigata-u.ac.jp

Session I-7

『GIAHS Twinning for Human Capacity Building between Noto's Satoyama Satoumi in Japan and Ifugao Rice Terraces in the Philippines』

Mr. Koji Nakamura (Visiting Professor, Kanazawa University)



13 –16 June 2016
Guemsan County
Chungcheongnam-do Province, Korea



3rd Conference of East Asia Research Association
for Agricultural Heritage Systems (ERAHS)
13 –16 June 2016@Guemsan County

GiAHS Twinning for Human Capacity Building between Noto's Satoyama Satoumi in Japan and Ifugao Rice Terraces in the Philippines

Koji Nakamura, Visiting Professor
Representative of Satoyama Satoumi Project,
Kanazawa University
Manager of Ifugo Satoyama Meister Training Program (ISMTP)

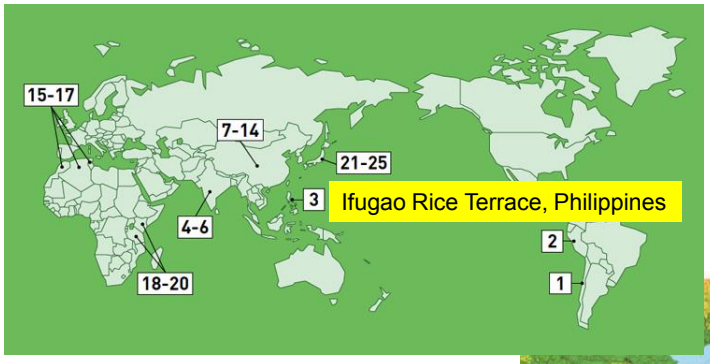
Profile：Koji Nakamura, Dr. Agr.　（中村浩二）

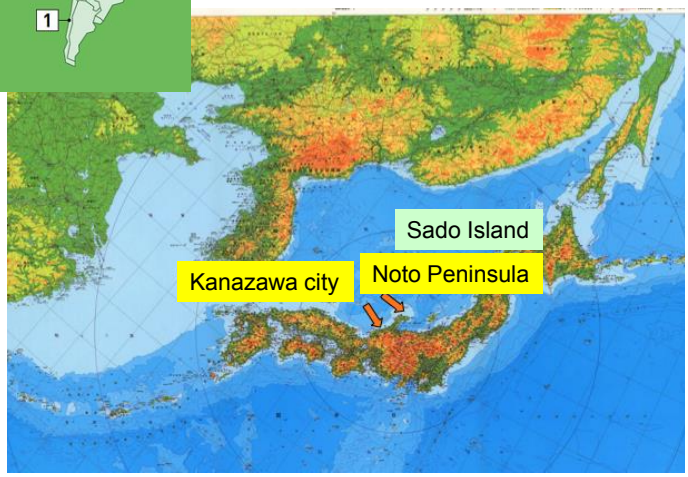
Visiting Professor:　Kanazawa University, United Nations University and Chinese Academy of Sciences

Ecology,　Insect population dynamics,
Biodiversity, Tropics – Indonesia
Satoyama and Satoumi in Japan and East Asia

Representative, Satoyama Satoumi Project
Kakuma Satoyama Nature School
1999ー　金沢大学「角間の里山自然学校」,
Noto Peninsula Satoyama-Satoumi Nature School
2006ー　「能登半島・里山里海自然学校」
Noto Satoyama Meister Training Program
2007ー2012　『能登里山マイスター』養成プログラム
Noto Satoyama Satoumi Meister Training Program
2012ー 2015 (2016-ー)　『能登里山里海マイスター』養成プログラム
Ifugao Satoyama Meister Training Program
2012ー (2016)　『イフガオ里山マイスター』養成プログラム

Globally Important Agricultural Heritage Systems (GIAHS)























フィリピン・イフガオ棚田
（世界文化遺産、世界農業遺産）

5

World GIAHS Congress was held in Noto, Ishikawa from 29-31 May, 2013





International Forum on GIAHS, Ishikawa, Noto, Japan 29-31 May 2013

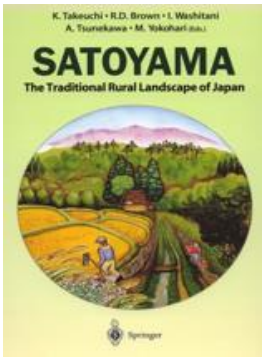


Noto Communique

Recommendations:
(5) Twinning of GIAHS sites between developed and developing countries

Definition of Satoyama-Satoumi　　里山里海

2



里山

- Production landscapes sustainably managed by human activities such as agriculture, forestry and fishery. Secondary nature.
- Mosaics of different habitats.
- Ecological services (=multi functions).
- Proper managements are necessary.
- Status has been changing over time depending on economical and other situations

- 「里山」は，農林業等の人手により形成されてきた農村生態系であり，「里海」は，漁業等の人手により形成され，生産性と生物多様性が高い沿岸生態系である。
- 生態系サービス（多面機能）発揮には、「適切な管理」が必要である。
- 経済動向等により、状況が大きく変動してきた。

Importance

- ○ Large Area　Japan: 40%; Ishikawa 60～70% of Japan
- ○ Production from agriculture and forestry
- ○ High biodiversity and focus of extinction
  e.g. Ibis, stork, medaka-fish, fire flies, frogs, and many formerly common animals and plants
- ○ Diversified mosaic of habitats with intermedia disturbance
- ○ Culture and traditional knowledge
- ○ Sustainability and harmonious relation between human and nature



SATOUMI　里海



Millennium Ecosystem Assessment（**MA**）
ミレニアム生態系評価

Key words

Ecosystem services

Assessment

Additional information value

“Users” = stakeholder

Japan *Satoyama Satoumi* Asssessment (JSSA)
日本の里山評価

Bottom-up approach: Cluster analysis

The Internationa Partnership for the Satoyama Initiatives (IPSI)
国際里山イニシャティブ

Globally Important Agricultural Heritage Systems (GIAHS)
世界農業遺産



What are *satoyama* and *satoumi*? 里山里海の国際定義

JSSA defines *satoyama* and *satoumi* landscapes as **dynamic mosaics of managed socio-ecological systems producing a bundle of ecosystem services for human well-being**.

→ **Socio-Ecological Production Landscapes（SEPLs）**

人間の福利に資する様々な生態系サービスを提供する、管理された社会生態学的システムであり、モザイク構造を有し、動的に変動する。



Satoyama



Satoumi

GIAHS Noto's Satoyama　Satoumi











Collaboration among different institutions: Kanazawa University, OUIK (UNU-IAS) and local governments (Ishkawa Prefecture and cities and towns).

"Noto's Satoyama Satoumi" was designated as Globally Important Agricultural Heritage Systems (GIAHS) in June, 2011, together with "Sado's Satoyama in harmony with the Japanese crested ibis (Toki)"







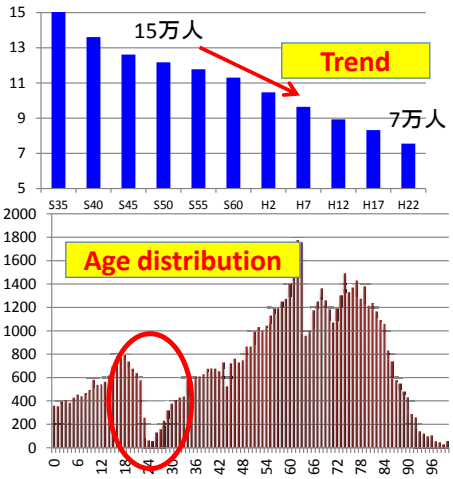
Noto's Satoyama Satoumi was designated as GIAHS (UN-FAO) in June, 2011

Serious depopulation and aged populatio in Noto
能登の現状：過疎・高齢化

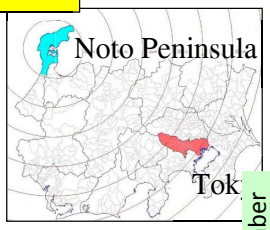
Deterioration of Satoyama Satoumi
里山里海の荒廃

Tokyo and Noto ：Same areas
Tokyo Population（12 millions）
Noto（230,000）
⇒ in 2030 >100,000

Population in Oku-Noto
奥能登の人口



Marginal villages
限界集落
Collaps o f villages
集落崩壊
Collapse of ecosystems and local culture
生態系の崩壊，伝統文化の断絶



可能性と「強み」
- **豊かな里山里海**
- **伝統産業・食品加工技術**

トキの舞う自然環境への可能性

Rich local resources





荒れ果てた竹林内

Satoyama problems in Kakuma Campus
角間キャンパス内の里山問題



ツキノワグマの出没



（参考）管理された杉林



大径木化する里山林



のり面に繁茂するクズ

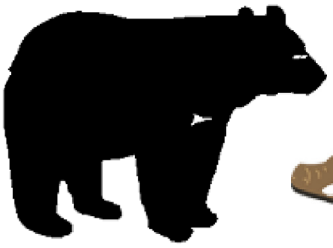


管理放棄されたスギ造林地

Alternation of the relationship between wild animals and human being in Satoyama



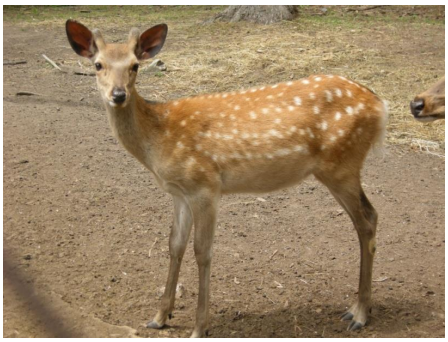






"Black bear panic" in 2004

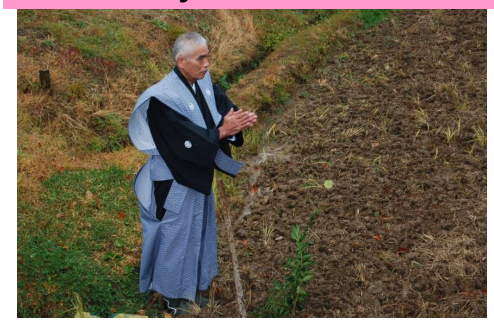
In abandoned Satoyama,trees grow taller and denser, and wild animals inhabited in the remote mountain invade to human areas.



Satoyama must be kept in a good condition by agriculture, forestry and conservation activities.

Aenokoto by Noboru Tanaka in Noto-cho

December 5, every year



Welcome the deity in the rice field

Lasting for 1000 years

Aenokoto for Tanokami, the Deity of rice field & harvest



Invite into the house





Host with a feast







Lack of young local participants, so that university students are invited (2008.7.31)

Kanazawa University's Initiatives for revitalization of Satoyama and Satoumi

In Kakuma Campus

"Kakuma Satoyama Nature School" 1999-

In Noto Peninsula

"Noto Satoyama Satoumi Nature School" 2006-

"Noto Satoyama Meister Training Project" 2007- 2012

"Noto Satoyama Satoumi Activities for Exchange of Satoyama/ Satoumi and Urban Areas" 2009-2011

"Noto Satoyama Satoumi Meister Training Project" 2012-

Long-term field studies on Satoyama/Satoumi ecosystems

20

Noto Satoyama Meister Training Program

MEXT (Ministry of Education) Funded Project
(Special Coordination Funds for Promoting Science and Technology)

2007～2012
(2 yr program)
62 graduates
14 from urban areas
(12 settled in Noto)



Capacity building of Young Leaders

Targets:
- Young boy and girls in urban areas
- Young staffs of local city and town offices
- Sons and daughters of local farmers





Representative



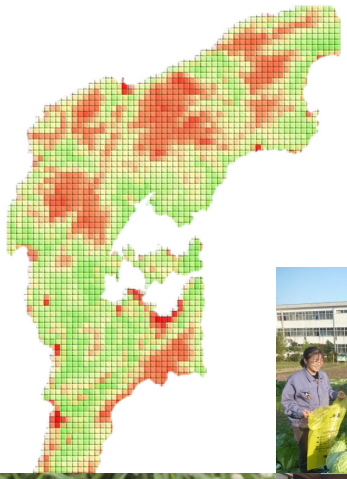
Special prfs Senior local staffs



Farmer leader



Young Post-doc staffs resident in Suzu



Creating a Sustainable Future for Noto's Satoyama Satoumi

"Noto Satoyama Satoumi Meister" Training Program



Innovations
1. Self-financed
2. Satellite schools
3. Human capacity building with global perspective

Curriculum Features

(1) Understand nature and culture in Noto's satoyama and satoumi and their value

Learn and experience Noto's nature and culture on a multilateral and scientific level

(2) Learn about ecosystem services provided by agro-biodiversity

Follow up on the achievements made from education and research into satoyama and satoumi at Kanazawa University

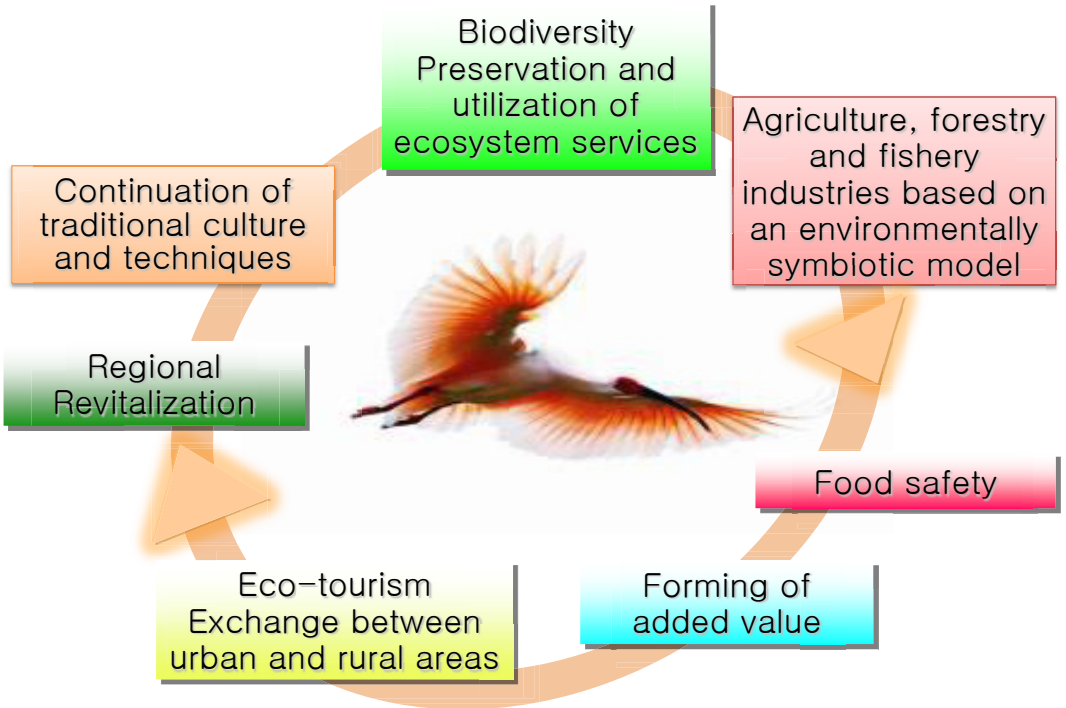
(3) Capture the value of Noto's satoyama and satoumi on a global scale

Spread the word on Noto to the world through exchanges via the Globally Important Agricultural Heritage Systems (GIAHS) certification site, etc.

(4) Create connections between people

Spread networks of people from a range of different backgrounds and abilities with satoyama and satoumi as key words

Basic concept of human capacity building in Noto Satoyama Meister



Variety of lectures and practices

Prominent figures l ectures



Biodiversity in paddy field



Farming and cultivation



Management



Information technology

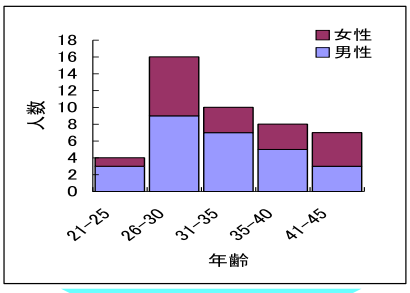


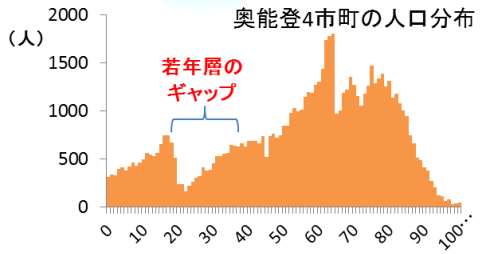
Visit good models



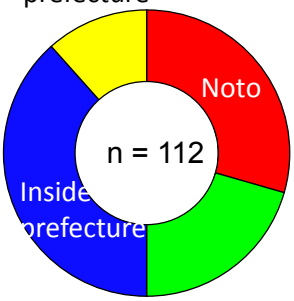
Trainees Participating in the Program

Age





Place of residence



Occupations

Agriculture

Farmer, JA staff

Food processing

Distillery-related work,
Restaurant operator,

Others

City councilors,
Doctors,
Members of the press,
Company employees etc.


128 “Meisters” are
currently active in Noto


あらたな つながり はじまる
～青年リーダー１００人会議 in 珠洲～

Under 45 years old

The “power of youth” is needed to begin turning on a positive spiral !

1. Environment friendly farmers
2. Business minded
3. Local/Global leaders



世界農業遺産(GIAHS)「イフガオの棚田」の持続的発展のための人材養成プログラムの構築支援事業

略称『イフガオ里山マイスター養成プログラム』

JICA草の根技術協力（地域経済活性化特別枠）事業

平成26年2月～平成28年2月（3年間）

JICA Technical Cooperation for Grassroots Project (Special Program)
Human Resources Development Program for the Sustainable Development of Globally Important Heritage Systems (GIAHS) Designated Site
“ Ifugao Rice Terraces” in the Philippines
Ifugao Satoyama Meister Training Program

2014～2016（3yrs）

Ifugao Rice Terrace (IRT)



- UNESCO World Heritage (1995)
- FAO-Globally Important Agricultural Heritage Systems (GIAHS, 2005)

- World Endangered Heritage (2001)
  → Already resolved (2012)

Lacking of young farmers and unregulated tourism
→ Damage to landscape

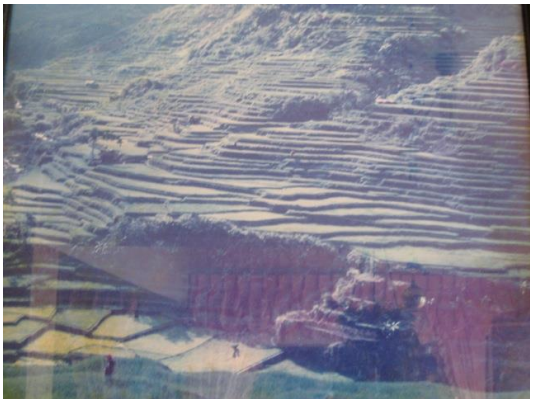
Needs of capacity development of young generation

Visit to JICA Office at Manila (Jan., 2012)

DENR (FASPO) and FAO Manila Office (Nov.,2013)





Many years ago




Apr. 2010

Threats and challenges common to GIAHS

- Noto and Sado (Japan): Decreasing and aging population
- Ifugao (Philippines): Decreasing young generation due to emigration to urban areas and unregulated tourism

↓

- Environment friendly agriculture, agro-business, new commons
- Exchange between rural and urban areas
- ……

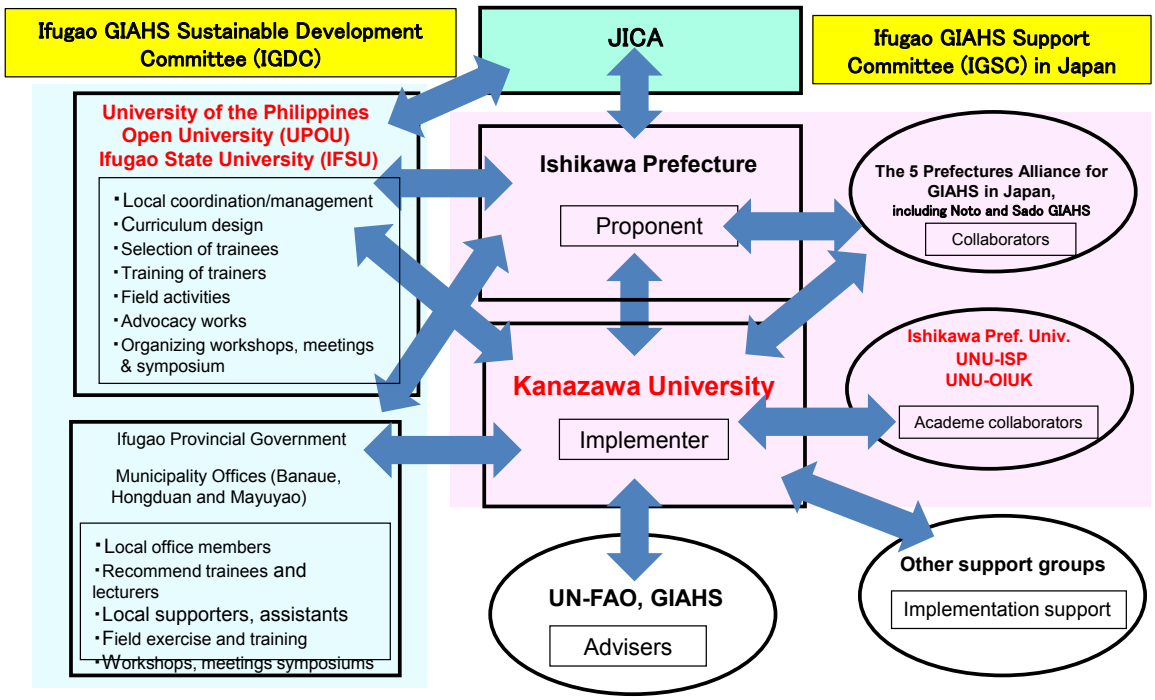
↓

Key is : Human capacity building of young people



Launching Ifugao GIAHS Sustainable Development Committee (Mar. 25, 2014, Ifugao State Univ.)
Ifugao Satoyama Meister Training Program

JICA Grassroots Project for the "Human Resources Development Program for sustainable development of the GIAHS Designated site, "Ifugao Rice Terraces (IRT)" in the Philippines



From 12 to 24 September 2014, delegation of “Ifugao Satoyama Meiter Training Project”, i.e. 3 Work Force members and 10 trainees visited Kanazawa and Noto for training and exchenge.



金沢大学がフィリピン・ルソン島イフガオで実施している国際協力機構（JICA）草の根技術協力事業「世界農業遺産（GIAHS）イフガオの棚田の持続的発展のための人材養成プログラムの構築支援事業」（通称：イフガオ里山マイスター養成プログラム）の能登研修が9月13日から24日の日程で実施された。プログラム受講20人のうち10人が研修ツアーに参加、学びと交流の輪を広げた。（文責・宇野文夫）

JICA　GIAHS

イフガオ里山マイスター養成プログラム

能登で繰り広げた草の根のワークショップ

2014年 9月13－24日

JICA Grassroots Project for the “Human Resources Development Program for sustainable development of the GIAHS Designated site, “Ifugao Rice Terraces (IRT)” in the Philippines

学びと交流の12日間

世界農業遺産（ＧＩＡＨＳ）「イフガオの棚田」の持続的発展のための人材養成プログラムの構築支援事業

事業概要（2014年3月から3年間）

「イフガオの棚田」は国連食糧農業機関（FAO）により世界農業遺産（GIAHS）に認定されているが、近年、若者の農業離れや都市部への流出により、耕作放棄地の増加が懸念されるほか、地域の生活・文化を守り、継承していく人材の養成が急務となっている。そのため同様の課題を有する、日本の2つの世界農業遺産認定地域（能登・佐渡）との結びつきを強化し、金沢大学が能登で培った里山里海をテーマとした人材育成のノウハウを移転し、同地において魅力ある農業を実践し、地域を持続的に発展させる若手人材養成のプログラムの構築を支援する。また、GIAHSの理念の普及を通じた国際交流・支援を実施することにより、能登および佐渡地域において、国際的な視点を持ちながら地域の課題解決に取り組み、国際社会と連携するグローバル人材の育成につなげていく。

【イフガオ棚田】イフガオ州はマニラから北に約380㌔。コルディレラ山脈の中腹にイフガオ族が耕す棚田が広がる。

イフガオ里山マイスター養成プログラムでは月1回（1泊2日）、イフガオ州大学を拠点に現地の若者20人がフィリピン大学やイフガオ州大学の教員の指導で地域資源の活用や生物多様性と環境、持続可能な地域づくり、ビジネス創出について学んでいる。能登研修を通じて、GIAHSサイト間の交流を深める。今回参加した受講生10人は教員スタッフ3人とともに12日にイフガオ現地からマニラを経由し、13日深夜金沢に到着した。

主なスケジュール

9月13日（土）	マニラ発、深夜に金沢到着
9月15日（月）	オリエンテーション、佐渡の取り組み
9月16日（火）	JICA北陸、石川県知事、羽咋市長を訪問
9月17日（水）	金沢大学長訪問、兼六園を見学し能登入り
9月18日（木）	珠洲市長を訪問、能登の酒蔵など見学
9月19日（金）	輪島・千枚田で稲刈り、珠洲の塩田を見学
9月20日（土）	能登学舎で修論発表会、お熊甲祭り見学
9月21日（日）	能登学舎で修論発表会、意見交換会
9月23日（火）	金沢大学で研修の成果発表会
9月24日（水）	金沢発、マニラ着　※14日は休日、22日は移動日

イフガオ民族衣装で千枚田の稲刈り

輪島市の千枚田では、棚田のオーナー田を管理する白米千枚田愛耕会の堂前助之新さんがオーナー制度の仕組みを説明。イフガオ受講生は愛耕会のメンバーの手ほどきで稲刈りを体験した。イフガオの稲は背丈が高く、カミソリのような道具で稲穂の部分のみ刈り取っており、カマを使って根元から刈る伝統的な日本式の稲刈り初めて、また、はざ掛けも体験した。イフガオの民族衣装を着た受講生たちは、収穫に感謝する歌と踊りを披露した。イフガオで自らも農業を営むマリージェーン・アバガンさんは「能登の棚田はとても手入れが行き届いている」と感想を話した。

県知事と金沢大学長を表敬訪問

能登入りに先立って、イフガオの受講生たちは16日に谷本正憲知事＝写真・右＝、17日には山崎光悦金沢大学長を表敬訪問した。知事は「地域活性化のヒントが得られることを期待する」と述べ、輪島の千枚田の取り組みを紹介。山崎学長も「能登での研修が実りあることを期待したい」と、引率のダイナ・リチヤヨ教授（イフガオ州大学）を励ました。













修了論文発表会、2015.2.19
Fianal oral examiniation



1期生修了式、2015.3.9
Graduation ceremony



Philippine-Japan Forum “Synergizing Research and Human Capacity Building for Sustainable Development [16.1.21、IFSU、佐藤 哲、大元鈴子（総合地球環境学研究所）が参加]















「イフガオ里山マイスター養成プログラム」2期生修了式、2016.3.15





Philippine-Japan Forum
GLOCAL Innovators:
Capacity Building for
Sustainable
Development and
Human Well-Being
through GIAHS
Twinning Program





@Baguio, Philippines
26 Jan. 2015

Study subjects of 2nd batch trainees

- Agriculture (rice plants and other crops)
- Processing of agricultural products
- Ecpsystem
  - Invasive pests
  - Global warming
- Traditional culture
- Ecotourism

- **FREE-RANGE CHICKEN ENTERPRISING ACTIVITY IN HAPAO, HUNGDUAN, IFUGAO**

CAROL B. MADIWO

Initial findings after 1 week



Average Weight:
1.75 grams



Average Weight:
1.35 grams


Control of Earthworm through Indigenous Pesticides
RUFINO M. GUMUWANG
Satoyama student-trainee

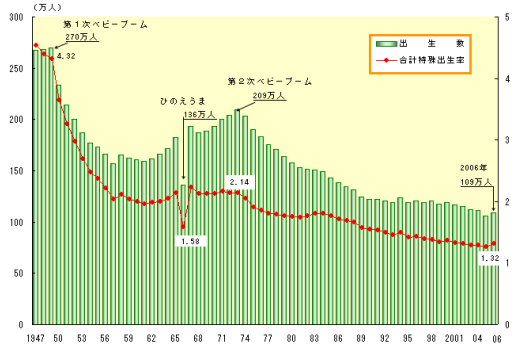

TINAWON RICE PRODUCT DEVELOPMENT
TRAINEE: Myra Ann D. Wachayna
T2 8-31-14
T3
T4

MUSEOLOGY with the CREATION of ASSEMBLAGE of SATOYAMA Photographs in IFUGAO Context: Evidence of Living Heritage

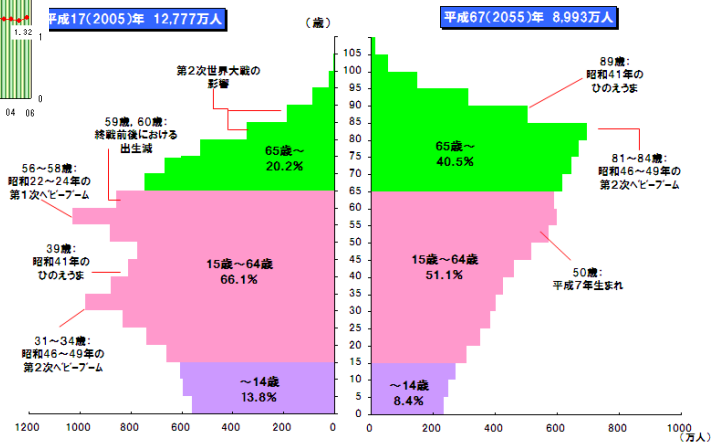
VICKY C. MADANGENG
IFUGAO SATOYAMA MEISTER PROGRAM
STUDENT - TRAINEE

Japan's Satoyama Satoumi in 2050 ?

Aged, depopulation → Under-management → Lower Ecosystem Services ?



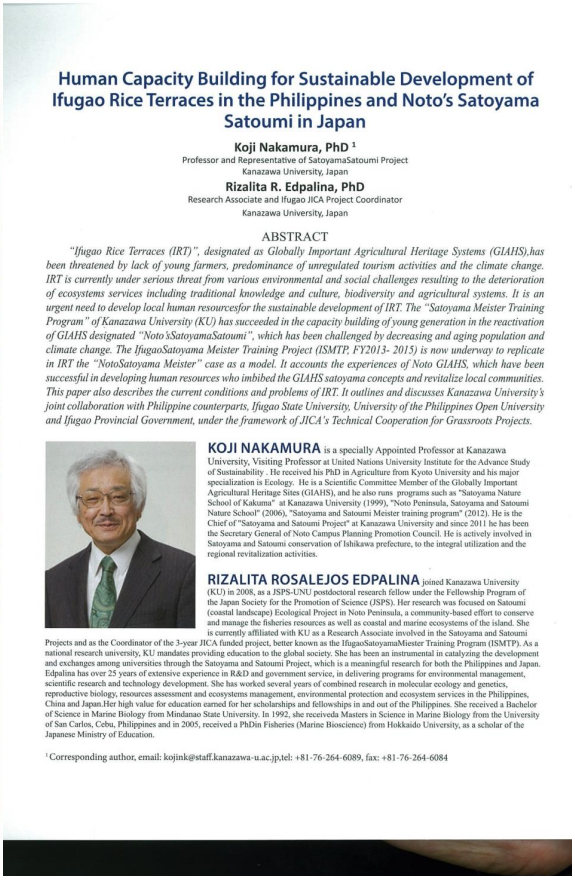
資料：　「人口動態統計」
厚生労働省大臣官房統計情報部



More Urbanization ?

http://www.ipss.go.jp/syoushika/seisaku/html/111a2.htm





Human Capacity Building for Sustainable Development of Ifugao Rice Terraces in the Philippines and Noto's Satoyama Satoumi in Japan

Koji Nakamura, PhD [1]
Professor and Representative of SatoyamaSatoumi Project
Kanazawa University, Japan

Rizalita R. Edpalina, PhD
Research Associate and Ifugao JICA Project Coordinator
Kanazawa University, Japan

ABSTRACT

"Ifugao Rice Terraces (IRT)", designated as Globally Important Agricultural Heritage Systems (GIAHS),has been threatened by lack of young farmers, predominance of unregulated tourism activities and the climate change. IRT is currently under serious threat from various environmental and social challenges resulting to the deterioration of ecosystems services including traditional knowledge and culture, biodiversity and agricultural systems. It is an urgent need to develop local human resourcesfor the sustainable development of IRT. The "Satoyama Meister Training Program" of Kanazawa University (KU) has succeeded in the capacity building of young generation in the reactivation of GIAHS designated "Noto'sSatoyamaSatoumi", which has been challenged by decreasing and aging population and climate change. The IfugaoSatoyama Meister Training Project (ISMTP, FY2013- 2015) is now underway to replicate in IRT the "NotoSatoyama Meister" case as a model. It accounts the experiences of Noto GIAHS, which have been successful in developing human resources who imbibed the GIAHS satoyama concepts and revitalize local communities. This paper also describes the current conditions and problems of IRT. It outlines and discusses Kanazawa University's joint collaboration with Philippine counterparts, Ifugao State University, University of the Philippines Open University and Ifugao Provincial Government, under the framework of JICA's Technical Cooperation for Grassroots Projects.

KOJI NAKAMURA is a specially Appointed Professor at Kanazawa University, Visiting Professor at United Nations University Institute for the Advance Study of Sustainability . He received his PhD in Agriculture from Kyoto University and his major specialization is Ecology. He is a Scientific Committee Member of the Globally Important Agricultural Heritage Sites (GIAHS), and he also runs programs such as "Satoyama Nature School of Kakuma" at Kanazawa University (1999), "Noto Peninsula, Satoyama and Satoumi Nature School" (2006), "Satoyama and Satoumi Meister training program" (2012). He is the Chief of "Satoyama and Satoumi Project" at Kanazawa University and since 2011 he has been the Secretary General of Noto Campus Planning Promotion Council. He is actively involved in Satoyama and Satoumi conservation of Ishikawa prefecture, to the integral utilization and the regional revitalization activities.

RIZALITA ROSALEJOS EDPALINA joined Kanazawa University (KU) in 2008, as a JSPS-UNU postdoctoral research fellow under the Fellowship Program of the Japan Society for the Promotion of Science (JSPS). Her research was focused on Satoumi (coastal landscape) Ecological Project in Noto Peninsula, a community-based effort to conserve and manage the fisheries resources as well as coastal and marine ecosystems of the island. She is currently affiliated with KU as a Research Associate involved in the Satoyama and Satoumi Projects and as the Coordinator of the 3-year JICA funded project, better known as the IfugaoSatoyamaMeister Training Program (ISMTP). As a national research university, KU mandates providing education to the global society. She has been an instrumental in catalyzing the development and exchanges among universities through the Satoyama and Satoumi Project, which is a meaningful research for both the Philippines and Japan. Edpalina has over 25 years of extensive experience in R&D and government service, in delivering programs for environmental management, scientific research and technology development. She has worked several years of combined research in molecular ecology and genetics, reproductive biology, resources assessment and ecosystems management, environmental protection and ecosystem services in the Philippines, China and Japan.Her high value for education earned for her scholarships and fellowships in and out of the Philippines. She received a Bachelor of Science in Marine Biology from Mindanao State University. In 1992, she receiveda Masters in Science in Marine Biology from the University of San Carlos, Cebu, Philippines and in 2005, received a PhDin Fisheries (Marine Bioscience) from Hokkaido University, as a scholar of the Japanese Ministry of Education.

[1] Corresponding author, email: kojink@staff.kanazawa-u.ac.jp,tel: +81-76-264-6089, fax: +81-76-264-6084

Resilience or Recovery
from the Climate Change and Other
Disaster

Power of Community

Human Capacity

Developing Sustainable and Resilient Rural Communities in the Midst of Climate Change: A Challenge to Disaster Preparedness and Mitigation Strategies"

Climate Change causes various kinds of hazards:

- Weather disaster
- Invasion of pests
- Troubles in agriculture and fishery

Upcoming schedules in 2016

June Visit to Ifugao
- ISMTP Evaluation by JICA Team
- Mr. Masuhiro Izumiya, Mayor of Suzu City and Chairman of Ifugao Support Committee
- Mr. Hanyuan Jiang, UC Davis Ms. Student
- 2 farmers from Sado GIAHS

Aug. Ifugao Internship of Kanazawa University Students

Sept ISMTP Delegation visit to Noto and Kanazawa

Dec /Jan International Forum
Graduation of third batch trainees

Follow-up of almuni, Networking and Mainstreaming
Mobilization of stakeholders

Planning for Second Phase

Challenges and future direction

- Japanese side (Kanazawa University etc.) supports the launching of “Ifugao Satoyama Mester Training Program (ISM) ” by transplanting of Kanazawa University’s the experience in Noto to IRT.
- Self-sustainability of ISM is to be established, in the near future, by IFSU, UP-OU, local governments and other stakeholders in IRT.
- Bilateral relationships and equal partnership are important (e.g. Cost-sharing, ・・・・・).
- FAQ: What are the motivation and merits for Noto GIAHS ?

Message

Japan finds itself in the position of a “developed” country, facing many serious challenges, which other countries will one day also be facing.

We have been tackling this issue by participation in the international networks such as IPSI and GIAHS as well as collaboration with local communities

Human capacity building of young generation is the key to overcome the challenges



Launching Ifugao GIAHS Sustainable Development Committee (Mar. 25, 2014, Ifugao State Univ.)

Thanks for your kind attention



Courtecy visit to Mr. Izumiya, Mayor of Suzu icty, one of the strongest partner agencies (Sept. 2014)

Session II -1

『A Basic Study on The Establishment of Area of Korea's Agricultural Heritage System』

Mr. Baek, Seung-seok (Manager, Korea Rural Community Corporation)

A Basic Study on Establishment of Area for Korea’ s Agricultural Heritage System(KIAHS)

2016. 6. 14.

Dr. Beak Seung-Seok
beakseungseok@gmail.com

Koera Rural Community Corporation

Table of Content

Ⅰ Introduction

Ⅱ Study Method /Procedure

Ⅲ Study Result

Ⅳ Conclusion

I Introduction

- **Korea has established KIAHS in 2012.**
  - 9 KIAHS starting with Cheongsando Gudeuljangnon designation.
- **Higher interest in AHS vs. more damages being found**
  - Hasted development with no AHS value consideration but meeting the higher demand of tourism resource development
- **Damages in Cultural Heritage and its landscape occured in 1970s**
  - Cultural Heritage Protection Law designate Conservation Area and Historic Cultural Environment Preservation Area distinctively
- **KIAHS designate CORE AREA and its SURROUNDING AREA for conservation and management**
  - But, detailed guideline hasn't been introduced yet to separate core area and its surrounding area

I Introduction

- **The study has suggested a direction for KIAHS Area Designation for the effective conservation/management/utilization**
  - Such can be applied for KIAHS designation criteria of core area and its surrounding area and activity guidelines for the conservation and management.

Ⅱ Study Method/Procedure

- **1st, the study has reviewed the area designation method thru Culture and Ecological Heritage Area designations.**
  - Related Law and Notice of Ministry of Environment/Cultural Heritage Administration

- **2nd, the study drew out the key issues on KIAHS area designation designated cases.**

- **3rd, sound direction for KIAHS area designation has been suggested**

Ⅲ Study Result

1. Heritage Designations in Korea

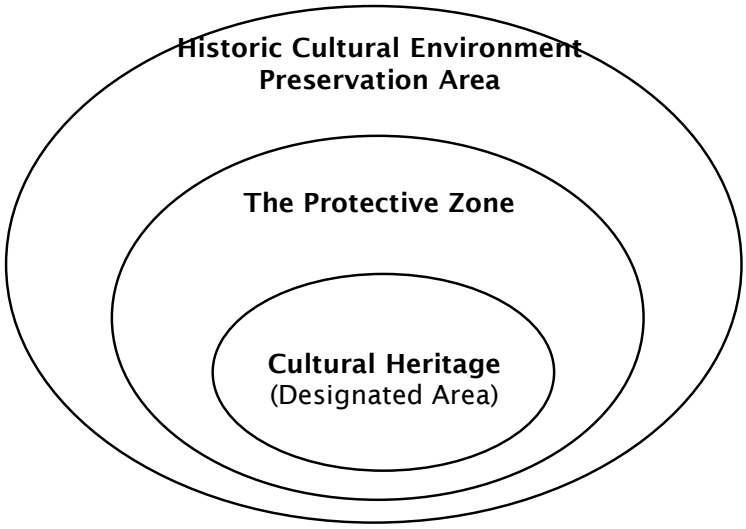
Scenic Attraction Spot

- **A site with outstanding landscape and artistic value**
  - **Share similar spatial extent with AHS**

- **Designation of Historic Cultural Environment Preservation Area**
  - **Objects for a conservation-needed Cultural Heritage and landscape with historic/cultural value**
  - **Cultural Heritage and within 500m of boundary line of preservation Area, however can exceed the guideline if needed**

Ⅲ Study Result

Cultural Heritage Area Classficaiton



7

Ⅲ Study Result

Scenic Attraction : Yecheon Hoiryongpo

- **Designated as Scenic Attraction for landscape of agriculture and environment**
  - 7 households community in the stream area still celebrate unique agro-culture



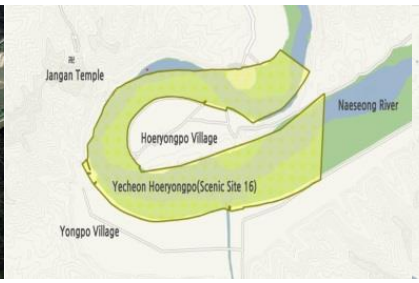
8

Ⅲ Study Result

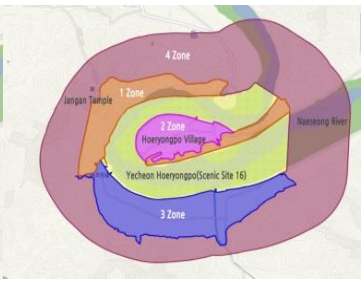
- **Yecheon Hoiryongpo in incised meander shape is located in upper part of Nakdong River, and 790,864㎡ of beach area has been designated for Scenic Attraction**
  - Scenic Attraction includes designation of Historic Cultural Environment Preservation Area, including village, forest, stream and cultivation area within 500m boundary line.



Yecheon Hoiryongpo



Designated Scenic Attraction



Historic Cultural Environment Preservation Area

Ⅲ Study Result

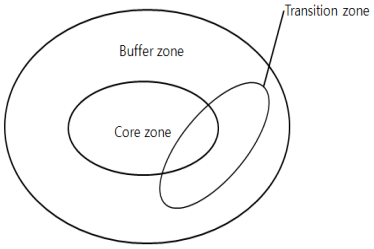
- **Activity Guideline in Hoiryongpo Historic Cultural Environment Preservation Area**
  - Maximum Height for new building in community and cultivation area: under 8-12m
  - Roof color: black, gray, brown for harmony with environment

Type	Acceptable standards	
	Flat roof	Inclined roof(over 10:3 rate)
Zone 1	ㅇ Individual review	
Zone 2		ㅇ Maximum height under 12m
	ㅇRoof color: limited to stay within black, gray, dark blue or brown	
Zone 3	ㅇ Maximum height under 8m	ㅇ Maximum height under 12m
Zone 4	ㅇ Apply Yecheon Town Planning Ordinance or relevant rules	
Common	ㅇ Remodeling is permitted for existing buildings only. ㅇ Individual review is required for a bldg with over 25m side or over 330㎡ in gross size(applied for the zone with under 8m flat roof or 12m inclined roof limitation) ㅇ Post notification, any amendment for the historic cultural environment conservation area within Town Plan application is subject for pre-discussions with Director of Cultural Asset Administration Division.	

Ⅲ Study Result

Ecology·Landscape Conservation Area

- **Area with abundant biodiversity and outstanding landscape**
  - Area, holding environment with aboriginality and biodiversity for conservation and academic research value
  - Area with clear geological features/topography in its landscape for conservation and academic research value



Core Zone: requires protection of ecological structure/function

Buffer Zone: needed area to protect Core Zone

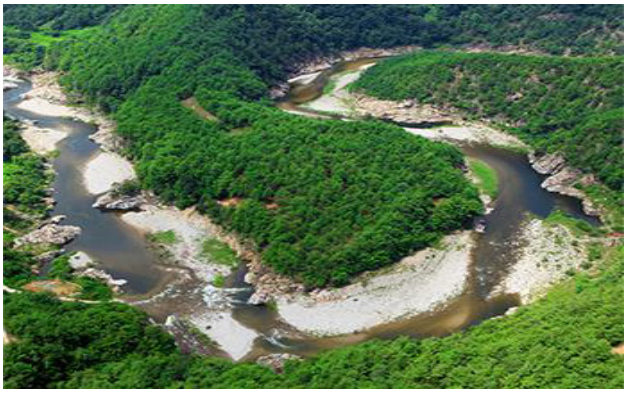
Transition Zone: Community within core zone and buffer zone

11

Ⅲ Study Result

Ecology·Landscape Conservation Area : Uljin Wangpicheon

- **Designated Ecology·Landscape Conservation Area for its outstanding vegetation and landscape**
  - Endangered species of otter, mountain goat and rare wild animal are found.



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Ⅲ Study Result

- **Designated area: 102.84㎢ including land and stream**

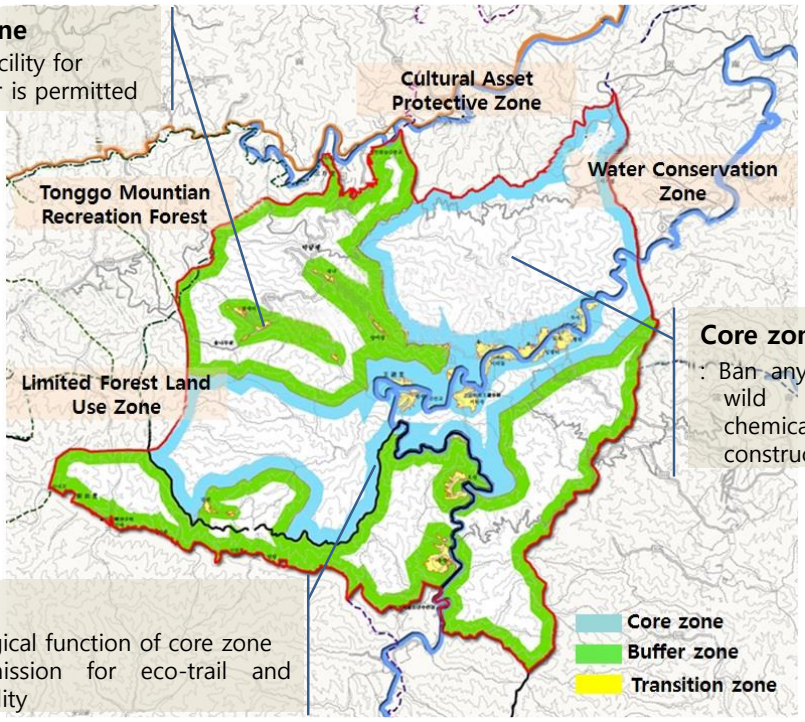
- Conservation per core zone, buffer zone, transition zone

Type	Total	Core zone	Buffer zone	Transition zone
Extent	102.84㎢	45.35㎢	55.64㎢	1.85㎢
Ratio	100%	44.1%	54.11%	1.8%
designation	-	2005. 10	2006. 12	2006. 12
zone	-	core conservation area in Wangpicheon	Near core zone	Community within the ecological landscape conservation area
Area	-	Uljin-gun Geumgangsong-myoun~Wangpi-ri Geumnam-myoun Gusan-ri, part of Sugok-ri	Geumgangsong-myoun Wangpi-ri, Samgeun-ri, Younggyang-gun Subi-myoun Suha-ri Sinam-ri	Uljin-gun Geumgangsong-myoun Wangpi-ri, Youngyang-gun Subi-myoun Suha-ri, Sinam-ri

13

Ⅲ Study Result

Transition zone
: Convenient facility for resident/visitor is permitted



Core zone
: Ban any poach/collect of wild life, poisonous chemical, fertilizer, new construcion

Buffer zone
: Protect ecological function of core zone limited permission for eco-trail and education facility

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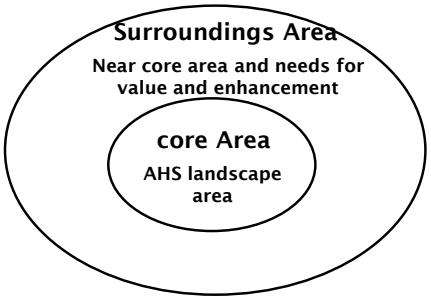
Ⅲ Study Result

2. KIAHS area designation

KIAHS

- **Protect Biodiversity, traditional farming skill, agri-culture and landscape of agricultural system**
  - KIAHS: 9 site designated by 2015
  - KIAHS: Technical type and Crop type(BEAK. S. S, 2015)



Core Area : Traditional farming system/Landscape Conservation Area/directly related area to Heritage conservation

Surroundings Area: near core area and needs for the value of core area and enhancement (MAFRA, 2012)[15]

Ⅲ Study Result

- **Unequal distinction of KIAHS core area from its surrounding area**
  - Technical Type shows distinction between core and its surrounding area
  - Crop Type is designated as one site

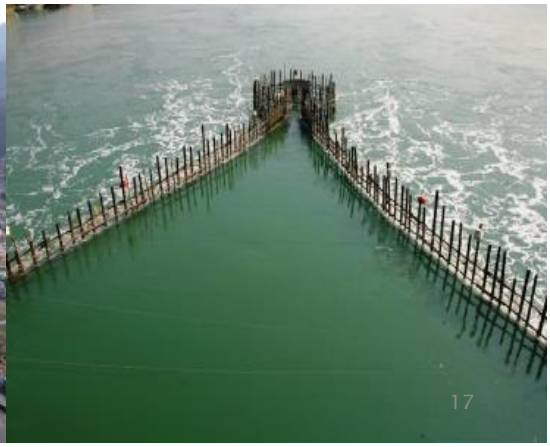
Type	Technical type					Crop type			
	Gudeuljangnon	Jeju Batdam	Mud boat	Jukbyangnyoum	Jeju Haenyeo	Sansuyu(Cornus officinalis) agriculture	Bamboo-forest	Insam agriculture	Traditional tea agriculture
Core area	○	○	○	○	○	○	○	○	○
Surrounding area	×	○	○	○	×	×	×	×	×

Ⅲ Study Result

KIAHS : Namhae Jukbyangnyoum

- **Over 500 year eco-friend fishery system, using tidal gap**
  - Traditional fishing system , utilizing principles of nature and environmental adaptation
  - 23 Jukbyangnyoum system remained





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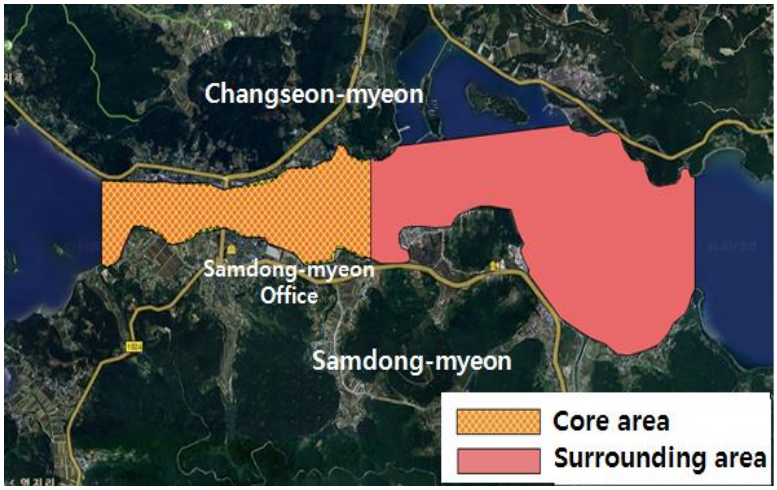
Ⅲ Study Result

- **Designated area: 5.372㎢**
  - Core area holds concentration of 15 Jukbyangnyoum
  - 8 Jukbyangnyoum distributed in the Surrounding area



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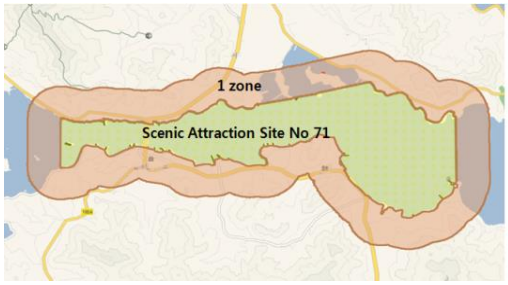
Ⅲ Study Result

- **Namhae Jukbyangnyoum was designated as Scenic Attraction in 2010**
  - Designated area: distribution of Jukbyangnyoum in 5.372㎢
  - Designated Historic Cultural Environment Preservation Area: within 500m boundary line



Designated Scenic Attraction



Historic Cultural Environment Conservation Area

- **AHS includes farming/fishing, traditional tech and skill, biodiversity, culture, landscape**
- **Heritage designation includes smaller site than Scenic Attraction, core area includes partial Jukbyangnyoum only, and fishing village was excluded from Heritage** 19

Ⅲ Study Result

KIAHS: Gurye Sansuyu(Cornus officinalis) agriculture

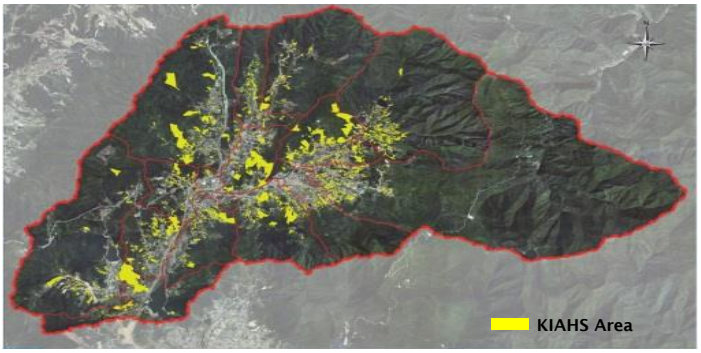
- **Forest forms 82.8% of area and people's livelihood was supported by Sansuyu(Cornus officinalis) agriculture**
  - **Sansuyu agriculture has begun in 11th century**
  - **Sansuyu colony forms outstanding landscape with community, stone fence and people**





Ⅲ Study Result

- **Designated area: 2.69㎢**
  - Heritage designated without distinction between core area vs. surrounding area
  - Heritage area includes Sansuyu colony and stone fence



- **For heritage maintenance of Gurye Sansuyu(Cornus officinalis) agriculture, nearby brook and landscape should be expand-included in designation**

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Ⅲ Study Result

3. Essential improvement for KIAHS

- **Need Concept of Area Designation**
  - -Detailed criteria and concept needed for KIAHS core area and its surrounding area.
  - Boundary limit needed like Historic Cultural Environment Preservation Area
- **Need Stronger Function of Conservation and Management**
  - AHS conservation action: establishment of conservation plan, civic organization, and KIAHS status cancel for any Heritage value loss and damage
  - -Requires minimal activity guideline like Historic Cultural Environment Preservation Area or Ecology·Landscape Conservation Area

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Ⅲ Study Result

4. Suggestion for KIAHS Area Designation and its direction

- **Establishment of concept for Area Designation**

  - KIAHS status should include tangible and intangible value.

Concept in KIAHS Area

▶ **Core area**

- Holds heritage significance with activity limitation for protection

▶ **Surrounding area**

- Near core area and includes environment , community and resident space
- Voluntary management by resident

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Ⅲ Study Result

4. Suggestion for KIAHS Area Designation and its direction

- **Stronger conservation/management**

  - Minimum level activity guideline needed for protection like other system
  - Activity guideline in AHS should not interfere with farming/fishing and community life

Stronger conservation/management

▶ **Differentiated activity guideline needed per site**

- Core area: ban heritage damage and any possible case must be preapproved by government
- Surrounding area: protect core zone, resident convenient facility, eco facility and managed by community organization

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Ⅲ Study Result

4. Suggestion for KIAHS Area Designation and its direction

Stronger conservation/management

▶ **Resident support for finance and administration**

- Core area: should AHS be damaged, government support restoration/maintenance and administrative support is essential for continuation of farming/fishing.
- Surrounding area: AHS community organization and experts form the operation system of conservation and management of heritage protection

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Ⅳ Conclusion

- **AHS landscape values the relation among cultivation area, environment and landscape**
- **Activity guideline is essential for conservation and management of KIAHS like other system**
- **Establishment of concept was introduced, conservation/management function direction was suggested based on characteristics of KIAHS**
- **The study contributes for future KIAHS Area Designation and as to be the base of conservation/management criteria**

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Thank you!

Session II -2

『An Analysis of the Characteristics of Agricultural Heritage Components in GIAHS Sites』

Mr. Jeong, Myeong-Cheol · Ms. Mun, Hyo-Yun · Ms. Yoon, Soon-Duck
(Researcher, National Institute of Agricultural Science, RDA)

An Analysis of the Characteristics of Agricultural Heritage Components in GIAHS Sites



RURAL DEVELOPMENT ADMINISTRATION NATIONAL ACADEMY OF AGRICULTURAL SCIENCE

Myeong Cheol Jeong, Hyo Yun Mun, Soon Duck Yoon

This study is carried out as an Agricultural Science and Technology Research and Development Project(project number: PJ012002) of National Institute of Agricultural Science, RDA.

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   - 2-5. Soil and Water Management Systems
   - 2-6. Repository of Agricultural Biodiversity and Genetic resources
   - 2-7. History of Agricultural Heritage
   - 2-8. Transmission of Traditional Farming Techniques
   - 2-9. Preservation of Cultural Diversity
   - 2-10. Other characteristics of the Agricultural Heritage

Since FAO introduced the Globally Important Agricultural Heritage Systems(GIAHS) in 2002, 36 regions of 15 countries so far have been listed on GIAHS.

Over time governments and private organizations around the world are becoming active to be listed for GIAHS, and some reserved countries of the Europe and North America now show an increased interest.

This study aims to find the important agricultural heritages of Korea and to prepare the methods for them to be selected as GIAHS.

We have analyzed the proposals of the 36 GIAHS listed in order to study the characteristics of their components of the agricultural heritage which worked for being selected.

1

Agricultural Heritage Component of GIAHS Selection Criteria

1-1 | Agricultural Heritage Component of GIAHS Selection Criteria





- To analyze the properties of the agricultural heritage components, previous studies on the classification of the agricultural heritage were reorganized and reclassified into 13 types and 42 components.

- In addition to this, the analysis entry was set by each type in order to avoid missing or overlooking important characteristics in the analysis process.

1-2 | Agricultural Heritage components and details(1)

Selection Criteria	Classification	Components	Analysis entry
Securing means of food and livelihood	Food and livelihood stability	Subsistence/ Food provide	Sustainable livelihood, challenges for harsh environments, overcome poverty, innovative food production, economy, etc.
	Exchange · reserves	Food storage/ Exchange	Reserves(storage facilities, container and manufacturing technologies, construction·stockpile· management technology, etc.) and exchange (location, size, exchanging methods, etc.)
Biodiversity and Ecosystem function	Biodiversity preservation	Agricultural biodiversity	Crop diversity, biodiversity of agricultural land and the surrounding, habitat preservation, ecological balance
		Eco-friendly farming techniques	Sustainable farming system, organic farming system, cycle farming
	Genetic resources conservation	Seed Conservation/ Breeding	Seeds type, name, preservation·use, breeding technologies
Knowledge Systems and adaptive technology	Knowledge for living · Technology	Farming/ Fishing/ Forestry/ Sericulture/ Beekeeping/ Hunting/ Gathering	Land management, cultivation(breeding) methods, livelihood activities by seasons, traditional knowledge and transmitting system such as planting(reproduction)-cultivation (breeding)-harvesting(hunting, gathering, bucthery)-storage(processing), use and making of tools

1-2 | Agricultural Heritage components and details(2)

Selection Criteria	Classification	Components	Analysis entry
Culture, value systems and social organization, farming culture	Life · Folk medicine	Food/Clothing/ Housing	Type, names, purposes, materials, manufacturing· construction methods, taboos, folk belief, symbolism, etc.
		Folk medicine	Medical technology, materials, medical tools, use methods of tools
	Folk art	Crafts/Literature/ Music/Fine arts/ Dance/Drama	Names, origin(source), purpose, author(creator, performer), content, production(creative performance) process, values, transmission, changing patterns
	Systems · Organizations	Community covenant/ Community group	Names, origins, purposes, contents. operational entity, operating methods, joining requirements, activities, relevant documents, etc.
	Folk belief	Community belief/Home belief/ Fortune telling	Names, purposes, time, place, tradition subject, worship object(behavior target), sacrifices, acts, taboos, legends, etc.
	Customs · Rituals	Seasonal customs/ passage rites/ Play	Name, origin, purpose, time, space, contents, procedures, dress, food, folk belief, taboos, legends, etc.

1-2 | Agricultural Heritage components and details(3)

Selection Criteria	Classification	Components	Analysis entry
Significant landscape, Land and Water management functions	Significant landscape	Agricultural landscape/ Housing landscape	Mosaic landscape with Rice paddies · Fields · Grasslands · Forest and etc, terraced rice paddies, agriculture-forestry-housing linkage system
	Land management	Land clearing/ reclaiming	Clearing for agricultural land, including grassland secured(terraced rice paddies, slash-and-burn fields, etc.) and reclaimed(sea, wetlands, etc.)
		Land improvement	Materials and technologies for soil condition improvement of farming land and grass land
		Disaster prevention technology	Facilities and technology for the prevention of floods, cold weather damage, etc.
	Water resource management	Reservoir	Puddles·lakes·ponds, etc, names, construction· management skills
		Irrigation	Pools, ditches, etc, names, construction· maintenance· management skills



2

Characteristic Analysis of the Agricultural Heritage Component

2-0 | Characteristic Analysis of the Agricultural Heritage Component

- Agricultural heritage is a product of challenge and response for the survival of humanity.
- The knowledge and skills of human beings who have challenged the harsh geographic environment of mountains, swamps, deserts and the climatic conditions such as high and low temperature is embedded in a complex and multi-layered GIAHS.
- Agricultural legacy components of GIAHS reigns is also complex and appears as a multi-layered thus it cannot be explained by one characteristic.
- This study analyzes the GIAHS proposals of 36 regions, and examines the characteristics of the GIAHS components focusing on the ten themes such as the location type of GIAHS Sites, the significant agricultural landscape, the agricultural-forestry-fisheries-livestock linkage farming system, the multi-layered, intercropping, rotation cultivation/breeding systems, the soil and water management systems, the repository of agricultural biodiversity and genetic resources, the history of agricultural heritage, preservation of cultural diversity and the other characteristics of the agricultural heritage.

2-1 | Location Type of GIAHS Site

- The 14 sites are in the mountainous regions, which have the salient characteristics of terraced rice paddies and agriculture-forestry-fishery-livestock farming linkage system.

- The three sites of grasslands are implementing mainly livestock and fields farming, the four regions of river and coast show the wetlands nature of agriculture, such as coastal reclamation, water gardens, seafloor farming system, etc., and a linkage with fishery is also important element.

- GIAHS in desert regions are five, which have the characteristics of oases and irrigation systems. They demonstrate remarkable efforts of local residents to overcome the harsh climate and geographical environment.



Location Type of GIAHS Site(1)

Location Type	GIAHS Site(Country, Name, Listed yr.)
Mountains (14)	• China, Hani Rice Terraces, 2010 • China, Dong's Rice Fish Duck System, 2011 • China, Pu'er Traditional Tea Agrosystem, 2012 • China, Kuaijishan Ancient Chinese Torreya, 2013 • China, Jiaxian Traditional date Gardens, 2014 • China, Fuzhou Jasmine and Tea Culture System, 2014 • India, Saffron Heritage of Kashmir, 2011 • Japan, Managing Aso Grasslands for Sustainable Agriculture, 2013 • Japan, Traditional tea-grass integrated system in Shizuoka, 2013 • Japan, Minabe-Tanabe Ume System, 2015 • Japan, Takachihogo-Shiibayama Mountainous Agriculture and Forestry System, 2015 • Peru, Andean Agriculture, 2011 • Philippines, Ifugao Rice Terraces, 2011 • Tanzania, Shimbwe Juu Kihamba Agro-forestry Heritage Site, 2011
Grassland (3)	• China, Aohan Dryland Farming System, 2012 • Kenya, Oldonyonyokie Olkeri Maasai Pastoral Heritage Site, 2011 • Tanzania, Engaresero Maasai Pastoralist Heritage Area, 2011

Location Type of GIAHS Site(2)

Location Type	GIAHS Site(Country, Name, Listed yr.)
River · Coast(4)	• Bangladesh, Floating Garden Agricultural Practices, 2015 • China, Xinghua Duotian Agrosystem, 2014 • Japan, Ayu of the Nagara River System, 2015 • India, Kuttanad Below Sea Level Farming System, 2013
Desert(5)	• Algeria, Ghout System, 2011 • Iran, Qanat Irrigated Agricultural Heritage Systems, Kashan, 2014 • Morocco, Oases System in Atlas Mountains, 2011 • Tunisia, Gafsa Oases, 2011 • United Arab Emirates, Al Ain and Liwa Historical Date Palm Oases, 2015
Mountains, Plains, River · Coast Overlapping (10)	• China, Rice-fish culture, 2005 • China, Wannian Traditional Rice Culture, 2010 • China, Xuanhua Traditional Vineyards System, 2013 • Chile, Chiloé Agriculture, 2011 • India, Koraput Traditional Agriculture, 2012 • Japan, Noto's Satoyama and Satoumi, 2011 • Japan, Sado's satoyama in harmony with Japanese crested ibis, 2011 • Japan, Kunisaki Peninsula Usa Integrated Forestry, Agriculture and Fisheries System, 2013 • Republic of Korea, Jeju Batdam Agricultural System, 2014 • Republic of Korea, Gudeuljangnon Terraced Rice Paddies, 2014

2-2 | Significant Agricultural Landscape

- The agricultural landscape seriously regarded in GIAHS proposals are 32 regions.

- The terraced rice paddy landscape which has been created by the local communities in order to overcome the mountainous geographical environment, the field and orchard landscape utilizing hills and slopes, the garden farming landscape which is around the settlements, the naturally formed herding landscape in the grasslands, the oases and irrigation systems in the desert and the wetland agricultural landscape in rivers and coastal area constitute the types of landscape.

- The terraced rice paddies appearing in the regions of rice cultivation such as China, Japan, Philippines, Korea create a dynamic mosaic landscape which constitutes agriculture and forestry linkage. In particular, Ifugao of the Philippines and Hani of China terraced rice paddies are a forest-rice paddies-water channels-settlements-water courses linked, and these terraced rice paddies are responsible for soil erosion prevention, residential protection, natural purification functions, and maintain beautiful and magnificent agricultural landscape.

Landscape Type of GIAHS Site(1)

Landscape Type	GIAHS Site(Country, Name)
Terraced rice paddy (Mountains)	• China, Hani Rice Terraces • China, Dong's Rice Fish Duck System • Japan, Noto's Satoyama and Satoumi • Japan, Sado's satoyama in harmony with Japanese crested ibis • Japan, Takachihogo-Shiibayama Mountainous Agriculture and Forestry System • Japan, Ayu of the Nagara River System • Philippines, Ifugao Rice Terraces • Republic of Korea, Gudeuljangnon Terraced Rice Paddies
Field and orchard (hills or slopes)	• China, Aohan Dryland Farming System • China, Kuaijishan Ancient Chinese Torreya • China, Pu'er Traditional Tea Agrosystem • China, Fuzhou Jasmine and Tea Culture System • India, Saffron Heritage of Kashmir • Japan, Traditional tea-grass integrated system in Shizuoka • Japan, Minabe-Tanabe Ume System • Peru, Andean Agriculture • Republic of Korea, Jeju Batdam Agricultural System

Landscape Type of GIAHS Site(2)

Landscape Type	GIAHS Site(Country, Name)
Herding landscape (grasslands)	• Kenya, Oldonyonyokie Olkeri Maasai Pastoral Heritage Site • Tanzania, Engaresero Maasai Pastoralist Heritage Area • Japan, Managing Aso Grasslands for Sustainable Agriculture
Garden farming (around settlements)	• China, Xuanhua Traditional Vineyards System • China, Jiaxian Traditional date Gardens • Tanzania, Shimbwe Juu Kihamba Agro-forestry Heritage Site
Wetland agriculture (rivers or seashore)	• China, Xinghua Duotian Agrosystem • Bangladesh, Floating Garden Agricultural Practices • India, Kuttanad Below Sea Level Farming System
Oases and irrigation systems (deserts)	• Algeria, Ghout System • Iran, Qanat Irrigated Agricultural Heritage Systems, Kashan • Morocco, Oases System in Atlas Mountains • Tunisia, Gafsa Oases • United Arab Emirates, Al Ain and Liwa Historical Date Palm Oases

2-3 | Agriculture-Forestry-Fishery-Livestock farming Linkage system



- The GIAHS regions shows prominently linked to agriculture and the various walks of life to adapt to the geographical environment.
- This linkage system can be a human challenge to ensure the stability and sustainability of livelihoods, and it is a product of creative wisdom made by the traditional knowledge and technology of the local community to use the nature and the surrounding natural environment integrated.

GIAHS Site emphasized with Livelihood business connected system(1)

Connected System	GIAHS Site(Country, Name)
Agriculture-Fishery	• China, Xinghua Duotian Agrosystem • Republic of Korea, Gudeuljangnon Terraced Rice Paddies
Agriculture-Livestock Farming	• China, Aohan Dryland Farming System • India, Koraput Traditional Agriculture, 2012 • Peru, Andean Agriculture • Tunisia, Gafsa Oases • United Arab Emirates, Al Ain and Liwa Historical Date Palm Oases
Agriculture-Forestry-Fishery	• China, Hani Rice Terraces • Japan, Ayu of the Nagara River System • Japan, Kunisaki Peninsula Usa Integrated Forestry, Agriculture and Fisheries System • Japan, Noto's Satoyama and Satoumi • Japan, Sado's satoyama in harmony with Japanese crested ibis
Agriculture-Forestry-Livestock Farming	• Algeria, Ghout System • China, Fuzhou Jasmine and Tea Culture System • China, Jiaxian Traditional date Gardens • China, Pu'er Traditional Tea Agrosystem • China, Wannian Traditional Rice Culture • Japan, Managing Aso Grasslands for Sustainable Agriculture • Japan, Takachihogo-Shiibayama Mountainous Agriculture and Forestry System • Tanzania, Shimbwe Juu Kihamba Agro-forestry Heritage Site

GIAHS Site emphasized with Livelihood business connected system(2)

Connected System	GIAHS Site(Country, Name)
Agriculture-Fishery-Livestock Farming	• Bangladesh, Floating Garden Agricultural Practices • China, Dong's Rice Fish Duck System • China, Rice-fish culture • Chile, Chiloé Agriculture • India, Kuttanad Below Sea Level Farming System • Philippines, Ifugao Rice Terraces • Republic of Korea, Jeju Batdam Agricultural System
Agriculture-Livestock Farming-Beekeeping	• Iran, Qanat Irrigated Agricultural Heritage Systems, Kashan • Kenya, Oldonyonyokie Olkeri Maasai Pastoral Heritage Site • Morocco, Oases System in Atlas Mountains • Tanzania, Engaresero Maasai Pastoralist Heritage Area
Agriculture-Forestry-Livestock Farming-Beekeeping	• China, Kuaijishan Ancient Chinese Torreya • Japan, Minabe-Tanabe Ume System

2-4 | Multi-layered·Inter-cropping·Rotation cultivation/breeding System

- The important structural characteristics of crop cultivation or livestock breeding in GIAHS sites are the three systems, which is the Multi-layered · Inter-cropping · Rotation cultivation/breeding Systems, and there also appears abundant crop diversity.

- Multi-layered cultivation system can be found easily in tropical regions and desert areas, which constitutes a structure of 3-4 layers of arboreal, shrubs, surface plants, where large trees are controlling pests and diseases regulating the microclimate by preventing water from evaporation, thus creates an appropriate conditions for crop cultivation. Especially Kihamba Agro-forestry Heritage in Tanzania tall tress, bananas, coffee and vegetables are composed of four layers of plants in combination with forage crop production to maximize land use.





- Garden farming systems such as Xuanhua Traditional Vineyards System and Jiaxian Traditional date Gardens in China also have the multi-layered cultivation in general, which have intercropping of several products such as potatoes, beans, rice, watermelon, melon and yam between the fruit trees, and poultry growing together.

- China's Aohan Dryland Farming System, Peru's Andean Agriculture, Chile's Chiloé Agriculture), Indian Koraput Traditional Agriculture sites have secured livelihood through intercropping and rotation cultivation, and maintained crop diversity. Floating Garden Agricultural Practices in Bangladesh have carried on repeated cultivation of different variety of vegetables and spices, and combined fishery. China's rice-fish-duck farming system also has kept repeated cultivation of fish(fishery) and duck(livestock farming) in the rice paddies, which is contributing to increased income.

- Takachihogo-Shiibayama Mountainous Agriculture and Forestry System in Japan consists implementation of both the agricultural farming of mushrooms, rice, tea, etc. and the animal husbandry through logging, slash-and-burn, reclamation of lands, and takes rotational cultivation which helps protect forest resource. In Kunisaki peninsula Usa Integrated Forestry, Agriculture and Fishery system Site in Japan they cut down oak trees in a rotation method in order to grow shiitake mushrooms, which promotes the metabolism of forest. This contributes to the Satoyama landscape conservation, while maintaining the public interest function of the forest as water conservation.

2-5 | Soil and Water Management Systems



- Challenges from the local community to improve soil are seen in Japan's Management of Aso Grasslands for Sustainable Agriculture by burning down the grassland, a mixture of coppice and weeds agriculture in Minabe-Tanabe Ume agricultural farming system, the slash-and-burn farming in Takachihogo-Shiibayama mountainous Agriculture and Forestry system, and the terraced rice paddies in China, Japan and Phillipines using humus descended flows in the forests of upland soil to maintain the soil fertility.

- The fertilization management in GIAHS regions is done by maintaining soil health mostly using feces, livestock manure, compost. In Jiaxian Traditional date Gardens of China, breeding poultry reaps the effects that naturally supplies the fertilizer and controls the pests.
- Xinghua Duotian Agrosystem of China, a wetland farming system uses aquatic plants, and Jasmine and Tea Culture System of Fuzhou City uses the green manure crops.
- Floating Garden Agricultural Practices in Bangladesh uses buoys made with water hyacinth and algae instead of fertilizer.
- Hani Rice Terraces of China implement the fertilization management by utilizing mountainous altitude to send down the water containing fertilizer components to the rice fields. This area has the public and the private fertilizer wells.
- The Rice-fish-duck System in China and the Philippines fish and ducks provide the rice with fertilization and at the same time removing bugs and weeds, and the water waves created by their movements smoothen the soil.
- The Traditional tea-grass integrated system in Shizuoka of Japan, the surrounding tea plantations and grasslands are created for the use of fertilization management, thus produce high quality tea.

- Along with the above, the water management is one of the elements which is seriously addressed in the GIAHS proposal.
- Wannian Traditional Rice Culture in China maintains the irrigation system which starts from the upstream of the cold spring water, and the irrigation system in the Rice Terraces in China's Hani and the Philippine's Ifugao operate with small watersheds of collected rainwater to be supplied to the forest-village-rice paddies then led to the river.
- In Hani, in particular, the water is supplied through the irrigation canals which are made of wood blocks and slabs. They have water managers for waterway maintenance and management of water, and pay the managers rice in return.
- A unique irrigation system is maintained in the Near East and North African desert, the oasis and Ghout, Qanat and Falaj.
- Traditional Irrigation management system of Gudeuljangnon Terraced rice paddies in South Korea can be a unique case, which is derived from the heating system of Korean traditional houses.

2-6 | Repository of Agricultural Biodiversity and Genetic resources

- Agricultural biodiversity is also an important component of GIAHS. GIAHS regions may be a base for agricultural biodiversity, where a variety of crop is cultivated and livestock is implemented.
- In Maasai Pastoralist Heritage in Kenya and Tanzania, corn, beans and other crop production are maintained together with the major livestock farming including cattle, donkeys, sheep, and so on.
- In Shimbwe Juu Kihamba Agriculture and Forestry Heritage of Tanzania, coffee, coconuts, bananas, beans, potatoes, corn, yam, pineapple, mango, casava, etc. are produced and 40 endangered plants have been preserved.
- In fact, the species diversity in GIAHS regions is higher than in other regions, where there is an implication of a global 'repository of genetic resources'. In particular, the regions which are referred to as a storage of genetic resources are isolated from other areas due to geographical and environmental factors. Consequently, the frequency of gene pool to be imported, exported and floating are low, thus the genetic resources, seeds are well preserved.

Agricultural biodiversity of GIAHS Site(1)

Country	GIAHS Site	Details
China	Rice-fish culture	• Rice genetic resources, poultry and fish(carp, shrimp, loach, eel, etc.), beans, taro, lotus root, eggplant, etc.
	Dong's Rice Fish Duck System	• 261 kinds of indigenous rice varieties
	Hani Rice Terraces	• 195 kinds of indigenous rice varieties
	Aohan Dryland Farming System	• Millet, buckwheat, sorghum, peanuts, soybeans, rapeseed, sesame seed, sunflower, tobacco, wheat, etc.
	Pu'er Traditional Tea Agrosystem	• 4 family 31 kinds of tea • 186 rice kinds • 124 kinds of dry-field rice • 22 corn kinds • 90 wheat kinds • peas, sesame, sorghum, etc. • horses, donkeys, pigs, sheep, rabbits, chickens, ducks, geese, etc.
	Kuaijishan Ancient Chinese Torreya	• 6 nutmeg kinds • rice, corn, wheat, potatoes, beans, sesame, tea, bamboo shoots, mushrooms • pigs, sheep, rabbits, chickens, ducks, geese, bees, etc.
	Xuanhua Traditional Vineyards System	• 40 species of grapes, rice and beans, foil, mallow flowers, melons, etc.
Japan	Minabe-Tanabe Ume System	• Cultivating 23 kinds of plum and breeding new varieties suitable to the area
	Ayu of the Nagara River System	• Sweetfish, red trout, eels, Ishikawa Salmon, Southeast crabs, dace, minnow, etc. and 17 kinds of fishing species • Endangered followers dog, the Japanese giant salamander which is national special natural monument and vulnerable species, rare animals including national special natural monument of Japan goats, goshawk

Agricultural biodiversity of GIAHS Site(2)

Country	GIAHS Site	Details
Bangladesh	Floating Garden Agricultural Practices	• Okra, cucumber, gourd, radish, cabbage, tomatoes and various vegetables and spices
Peru	Andean Agriculture	• Over 400 species of potatoes • corn, yacon, oka, coca, etc
Chile	Chiloé Agriculture	• Over 200 kinds of potatoes • mango, strawberry and garlic
India	Koraput Traditional Agriculture	• Genetic resources such as 340 kinds of rice paddy crops, 8 sorghum kinds, 9 kinds of beans, 3 kinds of fiver crops, 7 vegetable kind, etc. • Over 1,200 kinds of medicinal plants use
Algeria	Ghout System	• Vegetables, beans, medicinal plants, fruits, etc. • Sheep, goats, camels, cattle, poultry, etc.
Iran	Qanat Irrigated Agricultural Heritage Systems	• 52 kinds of crops such as pomegranate, cucumber, pears, almonds, cherries, walnuts, plums, watermelon, etc.
Morocco	Oases System in Atlas Mountains	• 7 kinds of grains including wheat, barley, corn, grain, etc. • 7 kinds of beans, 11 kinds of horticultural products, 9 kinds of spices, 13 kinds of fruit, 53 kinds of vegetables.
Tunisia	Gafsa Oases	• Fruits such as apple, pear, plum, peach, mulberry, apricot, olive, citrus fruit, grapes, etc. • Fruits and vegetables such as cucumber, melon, pumpkin • Vegetables such as parsley, celery, spinach, cabbage, etc. • Pulse, aromatic, grain, feedstuff, ornamental plants, etc.

2-7 | History of Agricultural Heritage

• It would not be wrong to say that agriculture is the greatest revolution in the history of mankind. Humanity has overcome hunger through agriculture and has created the diverse cultures.

History of the GIAHS Site(1)

Country	GIAHS Site	Details
China	Wannian Traditional Rice Culture	• Relics of Xianrendong(仙人洞) and Diaotonghuan(吊桶环) with a history of ten thousand years
	Aohan Dryland Farming System	• Xinglongwa(興隆洼) cultural heritage with a history of 8,000 years • World's first millet cultivation
	Kuaijishan Ancient Chinese Torreya	• Torreya tree forest with a history of 2,000 years • Over 1,400 year-old torreya tree
	Pu'er Traditional Tea Agrosystem	• Origin of tea • 2,700 year old wild tea tree • 3,200 year old tea tree
	Jiaxian Traditional date Gardens	• The first jujube cultivation areas with a history of 1,000 years • The 1,400 year old jujube tree
	Xuanhua Traditional Vineyards System	• Original form of Chinese garden farming with a history of 1,300 years • 600 year old vine tree
	Fuzhou Jasmine and Tea Culture System	• Jasmine which has been cultivated for 2,000 years

History of the GIAHS Site(2)

Country	GIAHS Site	Details
Iran	Qanat Irrigated Agricultural Heritage Systems	• Qanat irrigation system dating back to BC 800 year
United Arab Emirates	Al Ain and Liwa Historical Date Palm Oases	• Falaj irrigation system which has been maintained for 1,000 years
Philippines	Ifugao Rice Terraces	• Terraced rice paddies that has been maintained for 2,000 years
India	Saffron Heritage of Kashmir	• Saffron which has been cultivated for 2,500 years
Tanzania	Maasai Pastoralist Heritage Area	• Nomadic history of 1,700 years
Japan	Noto's Satoyama and Satoumi	• 1,300-year-old terraced rice paddies



2-8 | Transmission of Traditional Farming Techniques

- China and the Philippines where rice-fish, rice-fish-duck farming systems, which are the linkage farming of rice cultivation, fishing and duck breeding, have been implemented. These farming systems are giving to significant reduction of fertilizer and pesticide, and fish and ducks are being secondary income resources.
- The field agricultural system of Aohan in China continues farming by cows, and still uses traditional farming appliances such as stone shovels, stone plows, stone knives, stone mills, and so on. Animal manure or chopped crop stalks are used as fertilizer, and they practice the rotation farming and inter-cropping which can prevent pest. Xinghua wetland farming region also implements farming by cows, and their fertilization managed by making an organic fertilizer from collected mud and aquatic plants.
- In China Kuaijishan has the grafting technique to pass down 1,500 years ago, the jujube tree grafting techniques and skills in picking shoots have been transmitted, and dates harvest is carried out in traditional harvesting methods using ladders and bamboo baskets.

- In Noto Peninsula of Japan the female divers are collecting sea cucumber, oyster, laver, abalone, seaweed, etc., and they maintain the traditional fishing methods using the dugout, bamboo rafts, paulownia nets to catch fish. They have maintained the traditional salt manufacturing method and charcoal manufacturing techniques that have been handed down. Sado Satoyama of Japan has maintained the traditional and environment-friendly agriculture such as Kuruma Rice Planting for the purpose of living in harmony with the crested ibis. Aso grassland also maintains the traditional farming techniques which has been transmitted, such as using cows and horses in plowing, fertilizing the land with horse and cow manure and cutting and burning the grassland.
- In Cheongsando of Korea the traditional irrigation system of Gudeuljangnon rice paddies and Wugyeong(farming with cows) are maintained, and traditional farming tools, pest control using perilla oil, eco-friendly fertilization management has been handed down. Jeju Island maintains the transmitted techniques such as the field stepping, the separation of the wheat and the chaff by the wind, traditional fishing techniques such as Seokbangryeom(fishing by stone walls) and sea diving by Haenyeo, and so on.

- In India Kuttanad Below sea level farming system has also maintained the Rice-fish-duck farming, Koraput has implemented the slash-and-burn cultivation and rainwater farming. Kashmir has a long history of development of saffron drying techniques.
- Kashan in Iran has 473 Qanat irrigation systems, and has grown watermelons by Sombak method of cultivation, which is growing watermelons in pits.
- Atlas Mountains in Morocco has implemented Agoudal management of ranch, which helps regulation of livestock breeding and crop cultivation period, and maximize the productivity from the limited land.
- Shimbwe Juu in Tanzania has been practising a traditional irrigation system of pulling up a water stream from the mountains. With this, a hemisphere shaped Garden farming is intensively implemented in the surrounding mountains.
- Al Ain and Liwa of Arab Emirates show a unique farming techniques such as artificial insemination of dates.



2-9 | Preservation of Cultural Diversity



- Preservation of cultural diversity is also an important objective of the establishment of GIAHS.
- In particular, the proposals from China and Japan show a lot of traditional cultures which are related to agriculture, such as annual rituals to pray for well-being, good harvest and well-being of local community, customs and annual festivals, worshipping ceremonies of gods, mountain god, water god and dragon god, life rituals, traditional games, local foods consist of local product and the cultural environment, and so on. They all represent the cultural diversity.

GIAHS Site showing Cultural diversity(1)

Country	GIAHS Site	Cultural diversity related information
Japan	Japan, Noto's Satoyama and Satoumi	• Traditional alchohol • Charcoal • Wajima lacquerware(輪島涂) • Aenokoto agricultural ritual (UNESCO ICH) • Amamehagi(アマメハギ, important intangible folk cultural asset) • Kiriko Festival • Abare Festival(あばれ祭り) • Mushiokuri (むしおくり) pest prevention awareness ceremony • Mensamanento to chase the bad luck away for a New year(important intangible folk cultural property)
	Sado's satoyama in harmony with Japanese crested ibis	• Noh(能) play • Onidaiko(鬼太鼓) • Hanagasa dance(花笠) • Hakusan Shrine dance ritual
	Managing Aso Grasslands for Sustainable Agriculture	• Volcano god, sacrifice, Aso pioneering god worship • Aso agricultural rite (Important Intangible Folk Cultural Property) • Tanomi ritual(田の実) • Hifuri rite(火振り) • Otaue-jinkoshiki • Hitaki rite • Onda Festival
	Kunisaki Peninsula Usa Integrated Forestry, Agriculture and Fisheries System	• Shujo-onie(Important intangible folk cultural property) • Otaue • Doburoku • Water god, Mountain god worship
	Ayu of the Nagara River System	• Honminoshi(本美濃紙, UNESCO Intangible Heritage of Humanity) • Minowashi • Gifu(岐阜) Wagasa umbrella • Gifu chouchin paper lanterns(岐阜 提灯) • Nagataki En-nen Festival(長滝 の 延年, Important intangible folk cultural Property) • Gujo Odori(郡上踊) Dance festival(Important intangible folk cultural property) • Hakusan and Water god worship
	Minabe-Tanabe Ume System	• Plum foods including dried plums, plum pickles, bonito plum, plum rice, fish boiled with plum • Plum Festival • Takagitenpo-jinja Shrine Autumn Festival • Kiyokawa(清川) Village Festival(lion dance performances) • Mushiokuri(虫送り) of Gokuraku-ji Temple(極楽寺) • Yamamatsuri(山祭り)
	Takachihogo-Shiibayama Mountainous Agriculture and Forestry System	• Kariboshikiri Uta(刈干切唄, weeding grave song) • Hietsuki Bushi(稗搗節, hulling grain sound) • Kagura(神楽) • Shishikake Festival(猪掛祭り) • Yaboyaki(藪木叢烤) • Water god(水神) worship

GIAHS Site showing Cultural diversity(2)

Country	GIAHS Site	Cultural diversity related information
China	Fuzhou Jasmine and Tea Culture System	• Sprinkling of jasmine in the river on the Chilseok/Qixi(lunar July 7) wishing for eternal love • Dragon Boat(龍船) Festival of the Dano(lunar May 5) • Drinking jasmine tea on wedding day means a unification of the two families
	Aohan Dryland Farming System	• Worshiping the sky, Aobao(敖包), shovel, stars • Ritual for rain • various festivals including Dragon dance, Bamboo horse, etc • At the funeral putting the millet and sorghum in a jar, or placing a straw basket at the head of the casket.
Bangladesh	Floating Garden Agricultural Practices	• Harvest ritual of Bengali celebration, 'Nabanna' is held in November-December in admiration of Lakshmi
Kenya	Oldonyonyokie Olkeri Maasai Pastoral Heritage	• Serving a fig tree in Mukurwe-wa-Nyagathanga as the god descending first divine ancestor
Tanzania	Engaresero Maasai Pastoralist Heritage Area	• OldoinyoLengai volcano is a object of mountain god worship. It dedicates a cow as a sacrifice, which has to be stolen cows from other tribes.
Morocco	Oases System in Atlas Mountains	• At Moussem(UNESCO ICH), a gathering of around 30 tribes in every May in one place, various events happen such as food and goods sale or exchange, livestock competitions, wedding ceremonies, music plays, singing, games, etc.
United Arab Emirates	Al Ain and Liwa Historical Date Palm Oases	• Eating dates at the end of Ramadan • Al ain cultural heritage landscape (UNESCO world heritage)

2-10 | Other characteristics of the Agricultural Heritage

- In addition to the nine kinds discussed above, there are other components of the largest scale of agricultural heritage in a country or in the world.
- Hani terraced rice paddies in China is 70,000ha, Kuaijishan torreya tree group reaches 20,000ha and Pu'er has the world's largest wild tea trees.
- The seaweed beds in Noto Peninsula is 14,761ha, the largest in Japan. The oak forests of the Kunisaki Peninsula is the largest in Japan.
- The ume field of Minabe-Tanabe is 4,000ha, and is famous for Japan's largest ume harvest of 44,000 tons, which is 50% of the whole production of Japan.
- Batdam(Field walls) of Korea's Jeju Island has its length of a whopping 22,000km. The world famous Saffron farm in Indian Kashmir boasts the area of 3,200ha that is dedicated to saffron cultivation only.
- Here the modifier 'largest' is not only for the scale of the agricultural heritage but also for its richness and harmony, thus plays an important factor for GIAHS selection criteria.

- The activities of the local community to transmit culture and traditional agricultural techniques is essential component of the heritage.
- Agricultural heritage is maintained and constantly reinvented through the spontaneous wills and dynamic efforts of local community.
- Maasai community of Kenya and Tanzania, Chiloe Mingas of Chile and Chagga tribes of Simbweju in Tanzania have local communities that have been passed down for generations. They all give agricultural heritage the viability.







- Agricultural heritage sites of wetlands, deserts, tropical zone are receiving interest with regard to the climate change.
- GIAHS Sites such as Bangladesh's floating gardens located in the floodplain, India's Kuttanad lowlands farming located in the lower sea level, China's Xinghua wetland agriculture, Algeria's Ghout, Tunisia's Gafsa Oasis, Morocco's Atlas Mountains oasis and Al Ain and Liwa oases in the United Arab Emirates may be an alternative measure for adapting to the climate change that threatens humanity, and can mitigate the threat.

RDA RURAL DEVELOPMENT ADMINISTRATION NATIONAL ACADEMY OF AGRICULTURAL SCIENCE

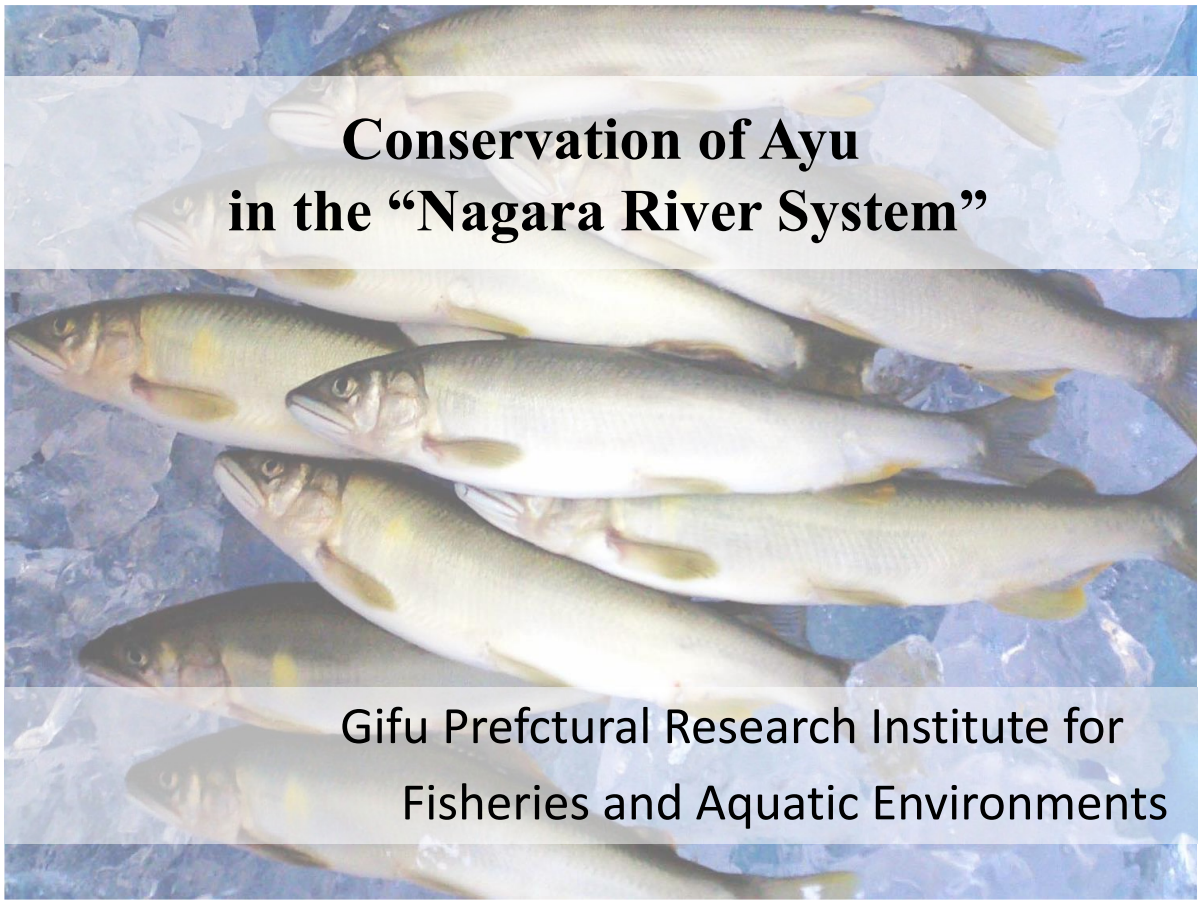
Thank You!

Session II -3

『Conservation of Ayu in the “Nagara River System”』

Mr. Yoshinori Muto (Research Specialist, Research Institute for Fisheries and Aquatic Environments)

Conservation of Ayu in the “Nagara River System”



Gifu Prefctural Research Institute for Fisheries and Aquatic Environments

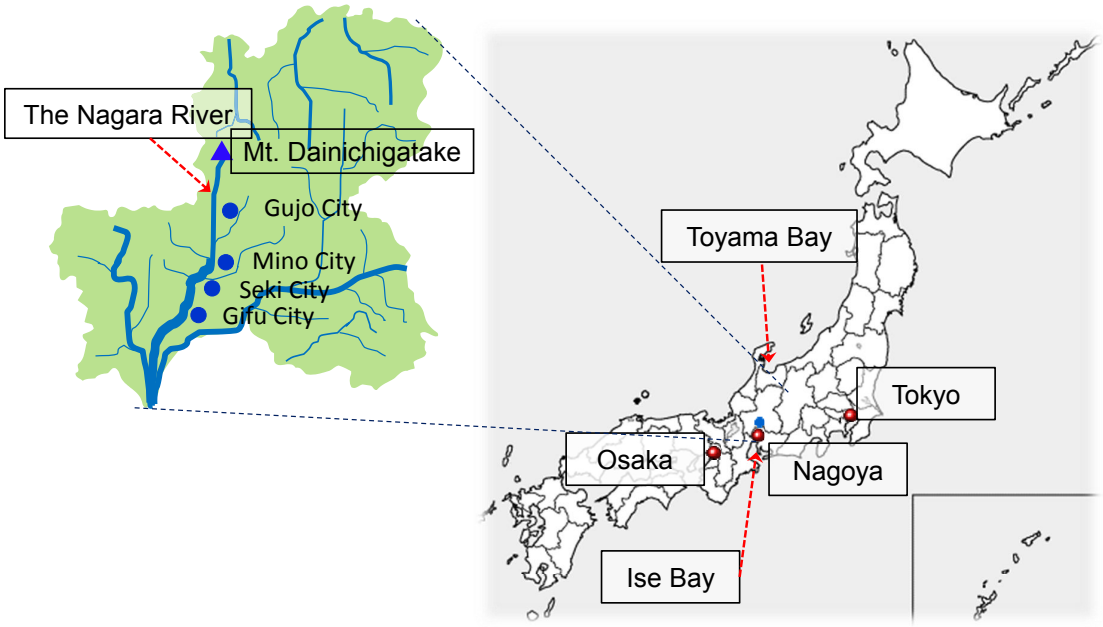
Satokawa



- *"Satokawa"* refers to river system integrated into rural settlements through wise use and proper management of surrounding areas and forests.
- *“Satokawa”* is a vital link connecting mountains of *“Satoyama”* with sea of *"Satoumi"*.

Overview of the Nagara River

The Nagara River is 166km in length and passes throughout some cities such as Gujo, Mino, Seki and Gifu. It originates from Mt. Dainichigatake and finally flows into Ise Bay.



The Nagara River System (*Satokawa*)



Fish Species in the Nagara River

Ayu



Red Spotted Masu Trout
(Landlocked Form)



Red Spotted Masu Trout
(Catadromous form)

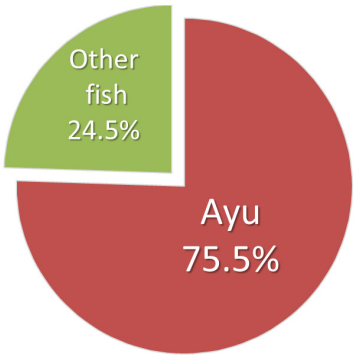


White Spotted Char



Japanese Eel





Annual Fish Catch on the Nagara River in 2002

It is reported that we can see ~74 fish species in the Nagara River, with only the 17 species being targets for fishing.

Ayu accounts for the largest yield on the Nagara River and its annual catch is estimated about 253,000kg. It corresponds to 75% of the total fish catch on the Nagara River.

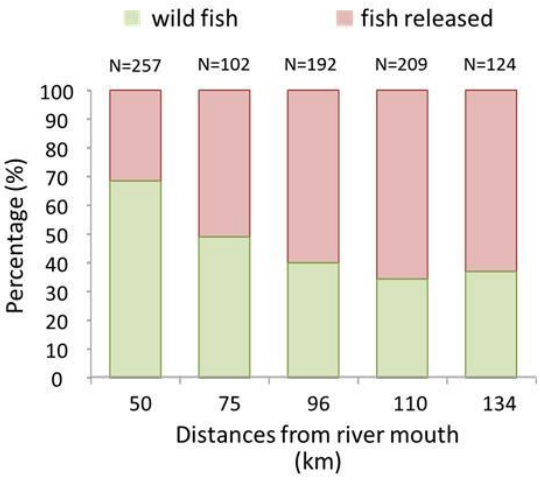
The Importance of Wild Ayu



Inland fisheries on the Nagara River are exploited for catching not only wild fish but also hatchery-released fish.

Wild ayu accounts for about 45 % of the total fish catch on average, and therefore wild fish are main targets for fishing around the lower basin.

The proportion of fish catch among wild and released ayu



Distance from the river mouth

Activities to Conserve Ayu Resources

Reproduction of wild fish can considerably contribute to a yield of fish on the Nagara River. Proper management for conserving wild ayu is important in order to use natural resources wisely and sustainably. Gifu Prefecture has conducted a variety of activities with fisheries cooperatives and politicians.

1. Conservation of spawning fish
2. Construction of spawning grounds
3. Release of fertilized eggs
4. Release of juvenile ayu stocks
   (The Efforts to Preserve Genetic Variation)

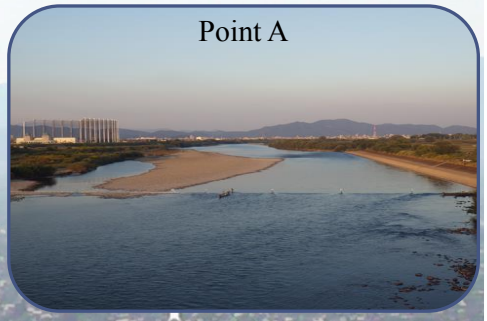


Conservation of Spawning Grounds

[Establishment of Non-fishing Areas]

Point A: 43km upstream from Ise Bay
Closed period: Sep. 15 - Oct. 15
Non-fishing area: 250,000m^2

Point B: 37km upstream from Ise bay
Closed period: Sep. 25 - Oct. 31
Non-fishing area: 450,000m^2





Construction of a Spawning Ground on the Nagara River

A spawning ground of ayu is constructed in the riverbed in order to increase ayu's spawning ability every year.

Construction period:Late September

Construction area:800m^2



Release of Fertilized Eggs
(Activities by Fishermen)

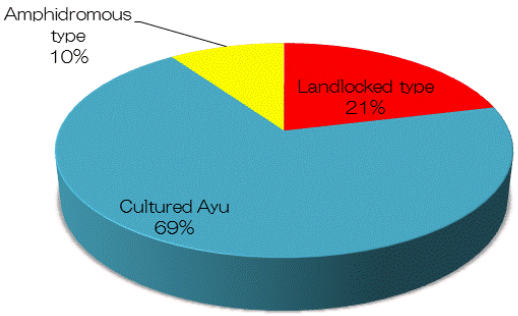


Release of Ayu Stocks
〔a variety of ayu stocks〕

In order to compensate a shortage of natural resources, some institutes often release hatchery fish. Various stocks have been produced by hatchery, but consideration for genetic mixing between wild and hatchery ayu is not sufficient. Releasing genetically consistent fry of the river is important in order to prevent genetic mixing.



Types of released ayu stocks in Japan

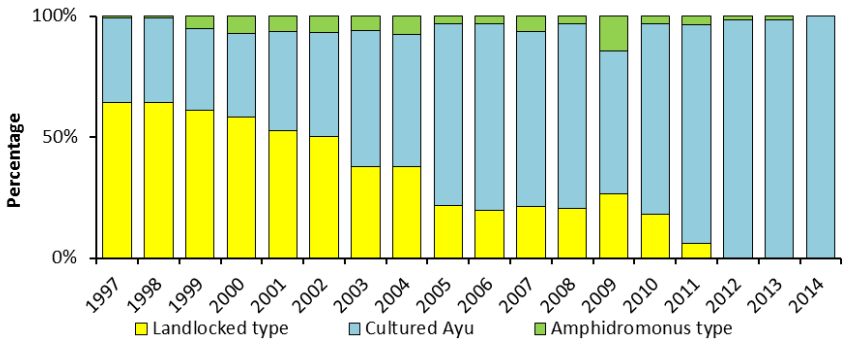


Release of Ayu Stocks
〔 Present state〕

A life cycle of wild ayu on the Nagara River is an amphidromous. Gifu Pref. previously released genetically different type of landlocked ayu from Lake Biwa where is located 50km away from Gifu. Recently, this contribution has been decreasing in order to conserve genes of wild ayu population.



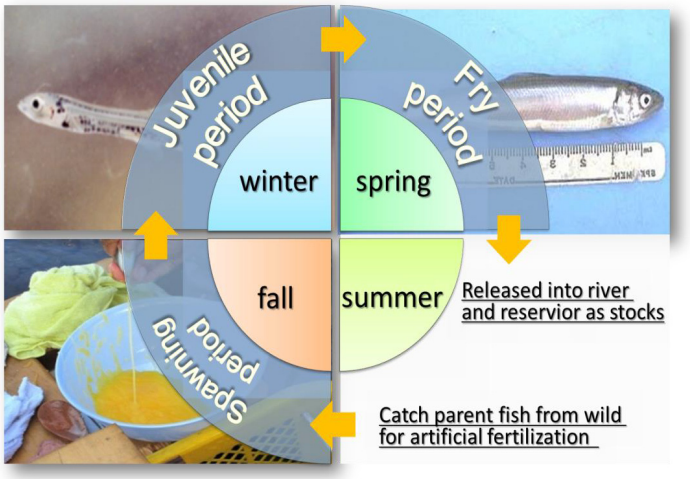
Types of released ayu stocks on the Nagara River



Release of Ayu Stocks
〔The Efforts to Preserve Genetic Variation〕

All of ayu stocks released into the Nagara River are supplied by the Gifu Prefectural Ayu Hatchery.

- Catching parent fish on the Nagara River and fertilizing them artificially.
- More than 1,500 males and 4,000 females are fertilized at the Hatchery.
- The hatchery is generally not allowed to keep passaged fish.

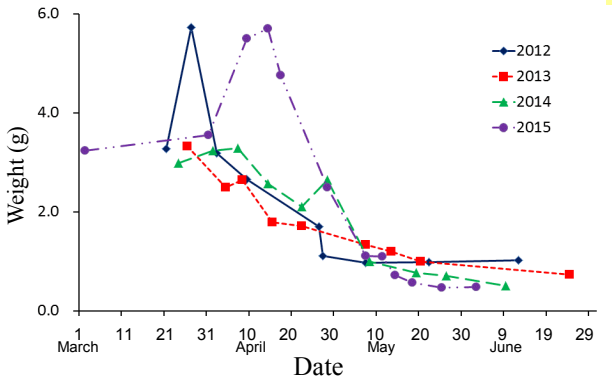


Challenges in the future

The clear relationship can be observed between the time of migration from the sea and the size of migratory fish. For example, later a fish migrates, smaller its size becomes. Recently, the data shows that migration time was delayed, the fish size was small. It may be supposed that overfishing of matured fish on the river especially in early spawning season mainly causes it.



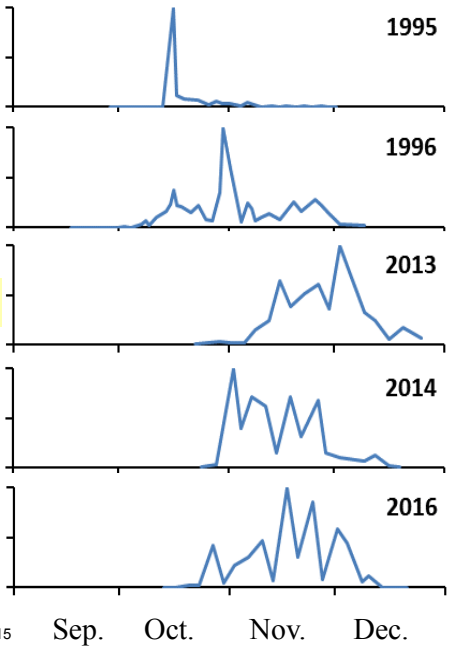
Weight of ayu caught on the Nagara River from 2012 to 2015



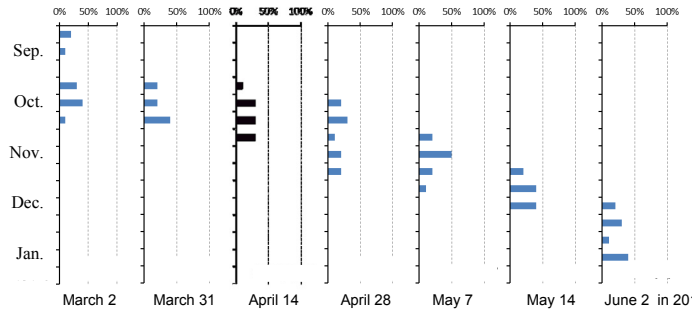
Ayu on the Nagara River

- The positive interrelation is observed between the birth date and the migration time.
- Scientific data shows the delayed migration time influenced the birth dates.
- Intensive fishing pressures may cause the delay of hatching.

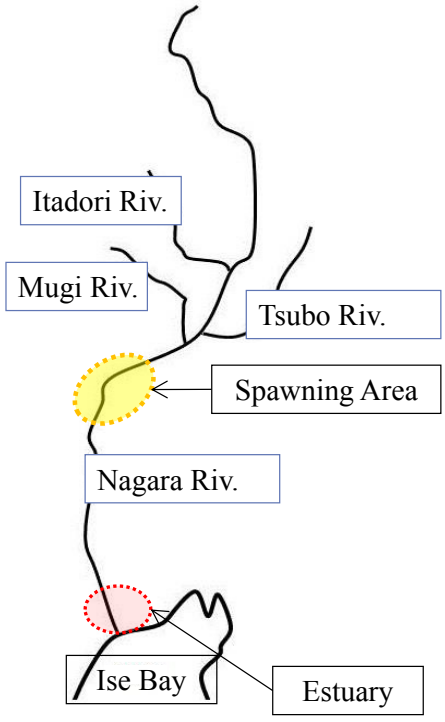
Changes of the estimated birth date



Interrelation between migration time and birth date



Perspectives (Conservation efforts in the future)



1. Catching early migrating fish at the estuary and using them as parents for the fish stocks.
2. Reconsidering the conservation efforts for preserving the genetic resources of early migrating fish (e.g., duration of fishing, spawning area etc.).
3. More data are needed to reconfirm the interrelation between the birth date and the migration time.


Thank you for your attention!

Session II -4

『Ishikawa's Dynamic Conservation of GIAHS "NOTO's SATOYAMA and SATOUMI"』

Mr. Fumikazu Noto (Public officer, Ishikawa Prefecture Agriculture, Forestry and Fisheries Department, Satoyama Promotion Office)

Ishikawa's Dynamic Conservation of GIAHS "Noto's Satoyama and Satoumi"

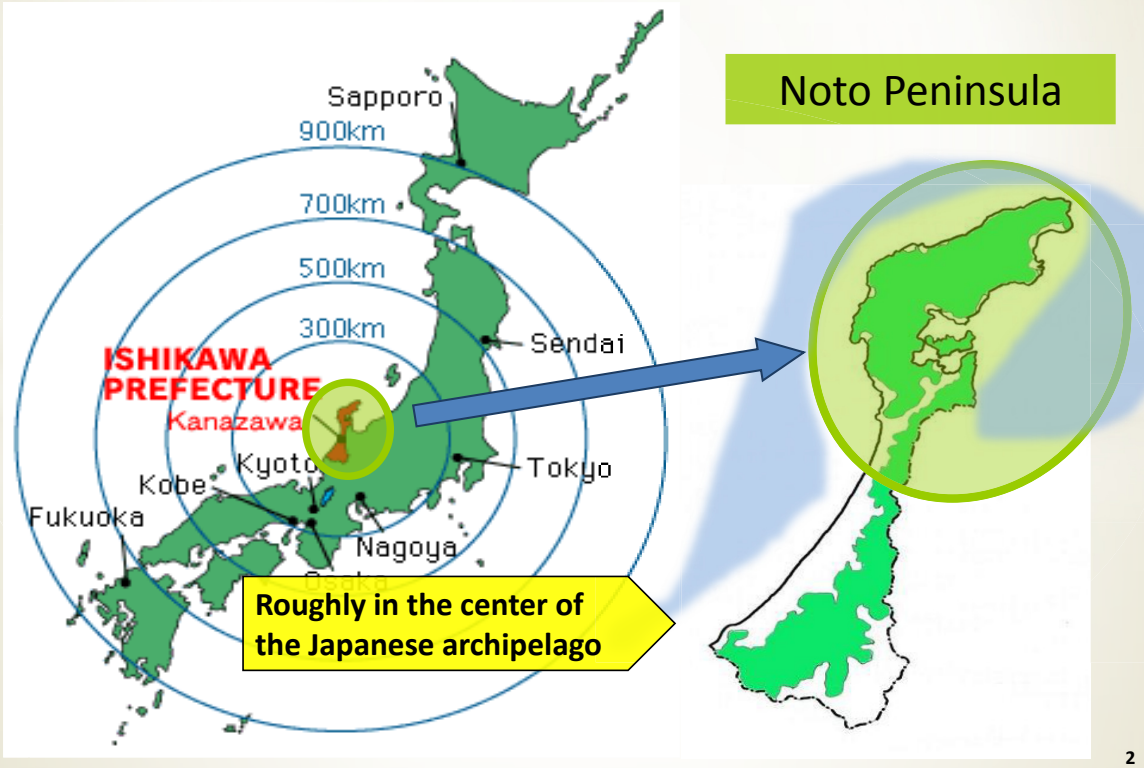


Fumikazu NOTO

Agriculture, Forestry and Fisheries Department, Satoyama Promotion Office, Ishikawa Prefecture

June 14, 2016

Location of "Noto's Satoyama and Satoumi"



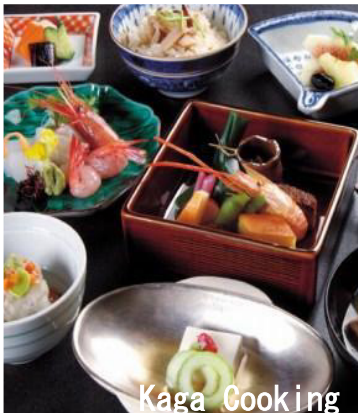
2


Gold leaf


Kenrokuen Garden

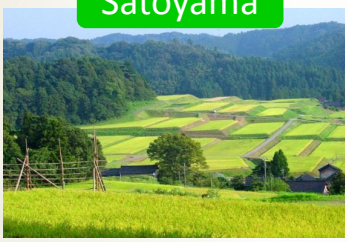

Kanazawa Castle Park

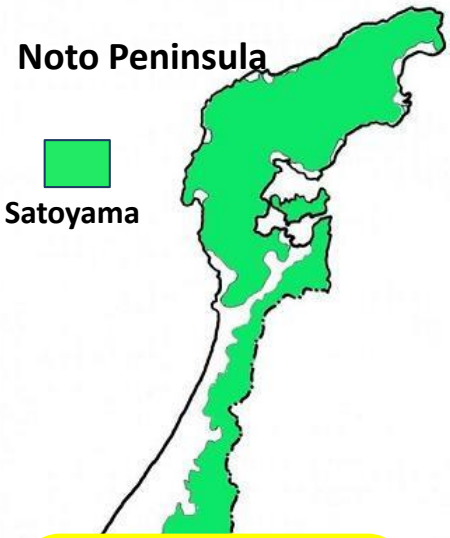

Higashi Chaya District


Kaga Cooking

What is Satoyama and Satoumi ?


Satoyama






Satoumi



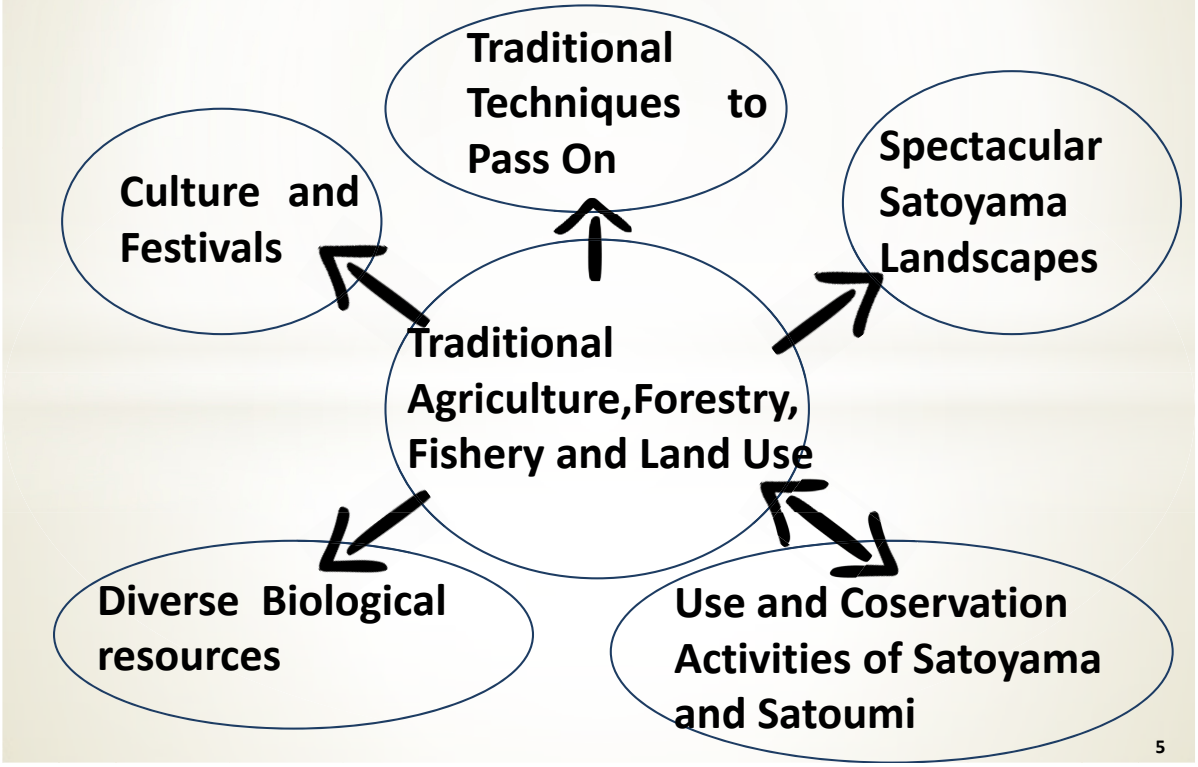
Satoyama refers to regions formed over many years by the agriculture and forestry industries of local inhabitants.

About 60 percent of Ishikawa Prefecture is composed of Satoyama.

Satoumi refers to coastal and marine regions that are connected with the lives and livelihoods of the local inhabitants.

4

"Noto's Satoyama and Satoumi" that points has been evaluated



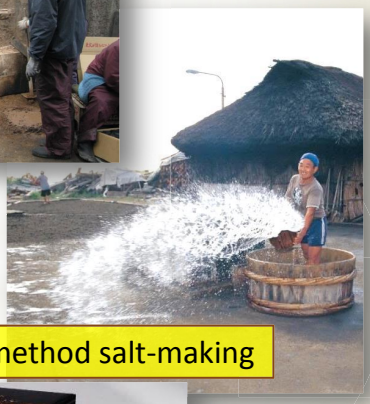
Agriculture, Forestry and Fishery



Traditional Festivals and Techniques


Kiriko lantern float festivals


Charcoal making

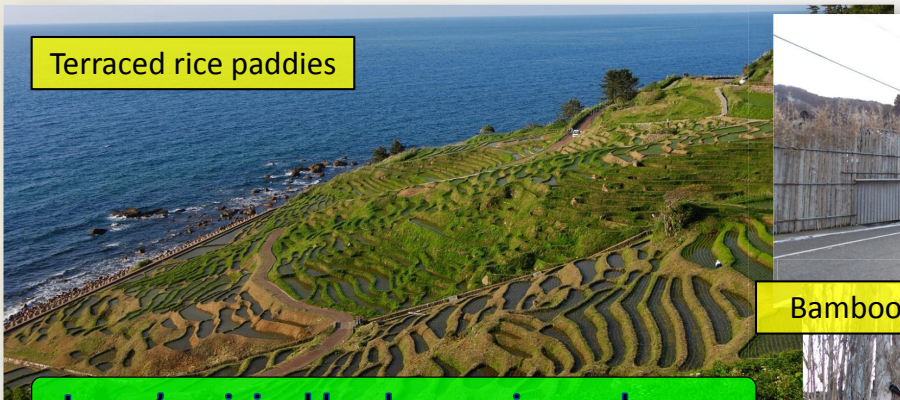

Agehama method salt-making

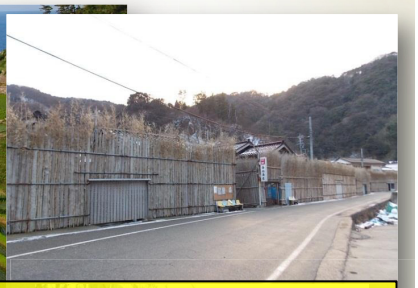
Aenokoto ritual


Wajima lacquerware

7

Landscape


Terraced rice paddies


Bamboo fences “Magaki”

Japan’s original landscapes in rural areas

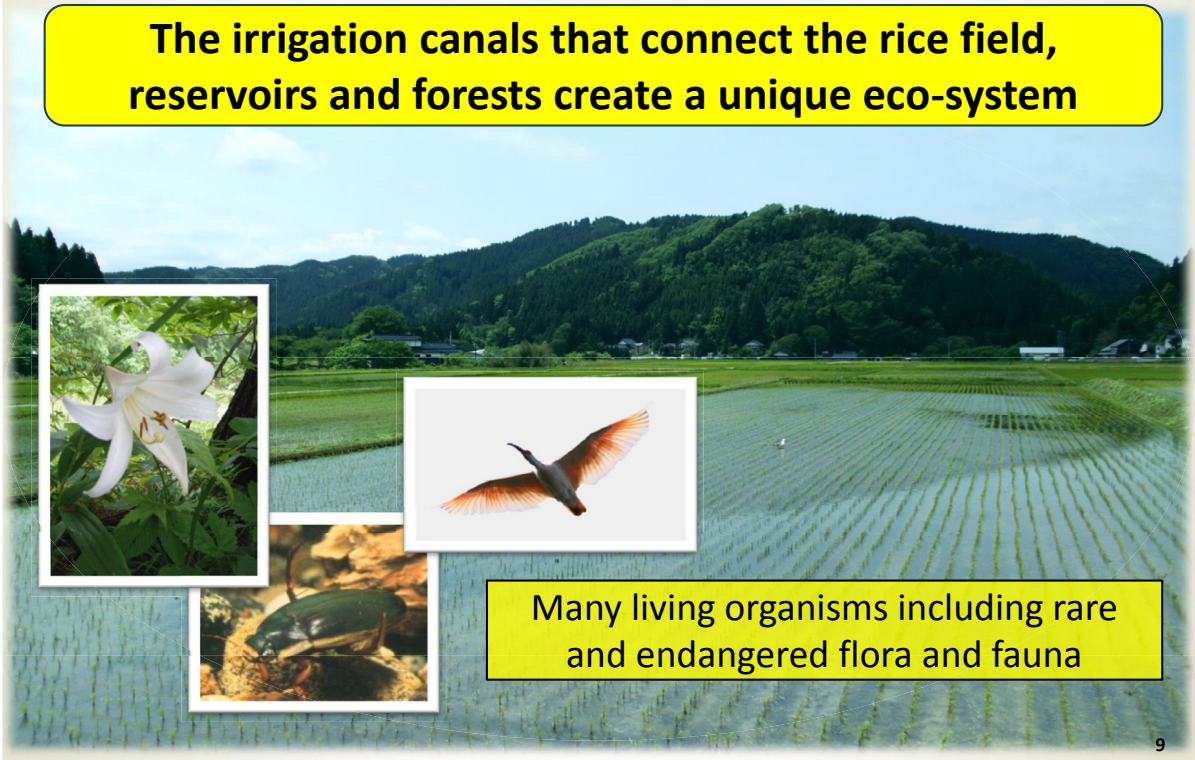

Traditional houses built with white walls and black roof tiles



8

Biodiversity

The irrigation canals that connect the rice field, reservoirs and forests create a unique eco-system



Many living organisms including rare and endangered flora and fauna

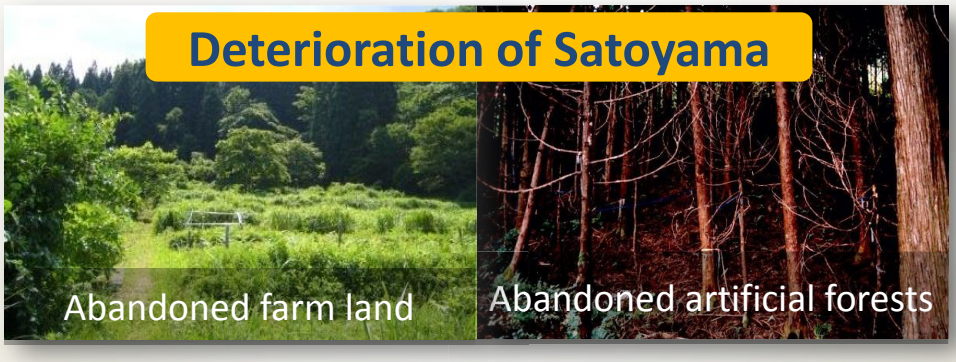
9

Crises of "Noto's Satoyama and Satoumi"

The average age of farmers continues to rise.

Youths are flocking to the big cities.

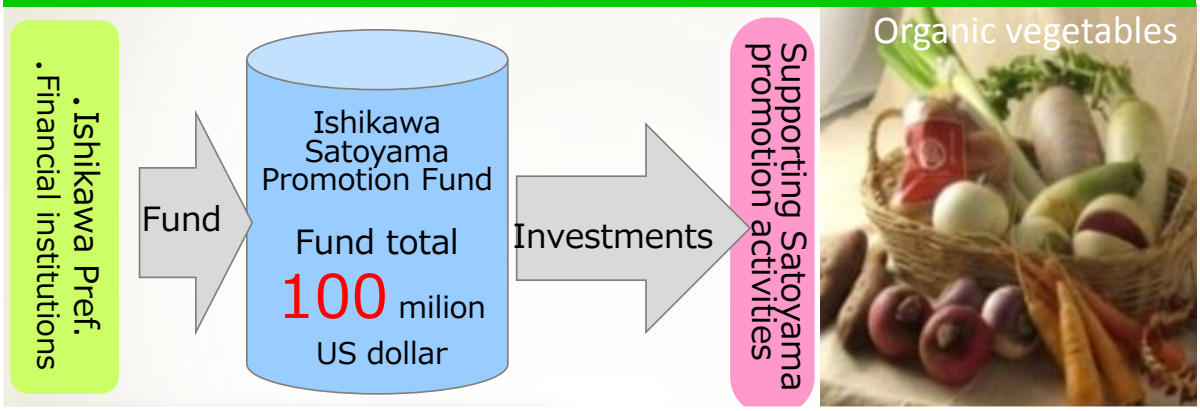
Deterioration of Satoyama



To regain the vitality to Noto region, it is important to promote agriculture, forestry and fishery in Noto.

10

Ishikawa Satoyama Promotion Fund







11

Study of Biodiversity





Investigations of the creatures with children and local inhabitants develop the understandings of their local environments and the importance of Satoyama's biodiversity.

Number of the investigations of the creatures (2011-14);282

12

New Value Chains

“Noto-no-Ippin”（2014～）

The 32 products named “Noto-no-Ippin” are made in “Noto”.
(Exmaple; Agehama Salt, Turban Shell picked by Ama, Persimmons, Etc)







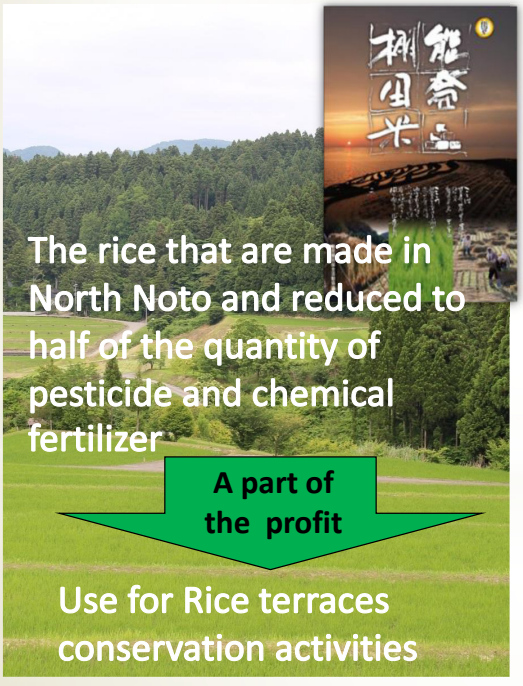


“Noto-no-Ippin” contributes to conservation of GIAHS, promotions of tourism and businesses in Noto.

13

Voluntary Efforts by Rice-farmers in Noto

NotoTanadamai Rice



Spread to the whole Noto Area

Notomai Rice





14

The Effects that are certified to the GIAHS site

Improvement of the value of Noto's agricultural products

Free of the "Noto Satoyama highway" ,etc

Business advances to Noto


Plant factories


Livestock farmer


Large-scale farmers

Revitalization of Noto's economics

The number of "New" farmers
2009:24 → 2014:43

15

International Forum in Noto



- May 29, 2013-June 1
- Participants 600people
  (500 people from Japan,
  100 people from 20 countries)
- Overview
  - The first time in Japan,
    The first time in recognition area
  - 6 regional recognition
  - Adopted the "Noto Communique"

"Noto Communique"
- Conduct monitoring
- Support the recognition of developed countries
- Promote the twinning of GIAHS sites between developed and developing countries etc



16

International Cooperation

International cooperation by Ishikawa Pref.（2014-）



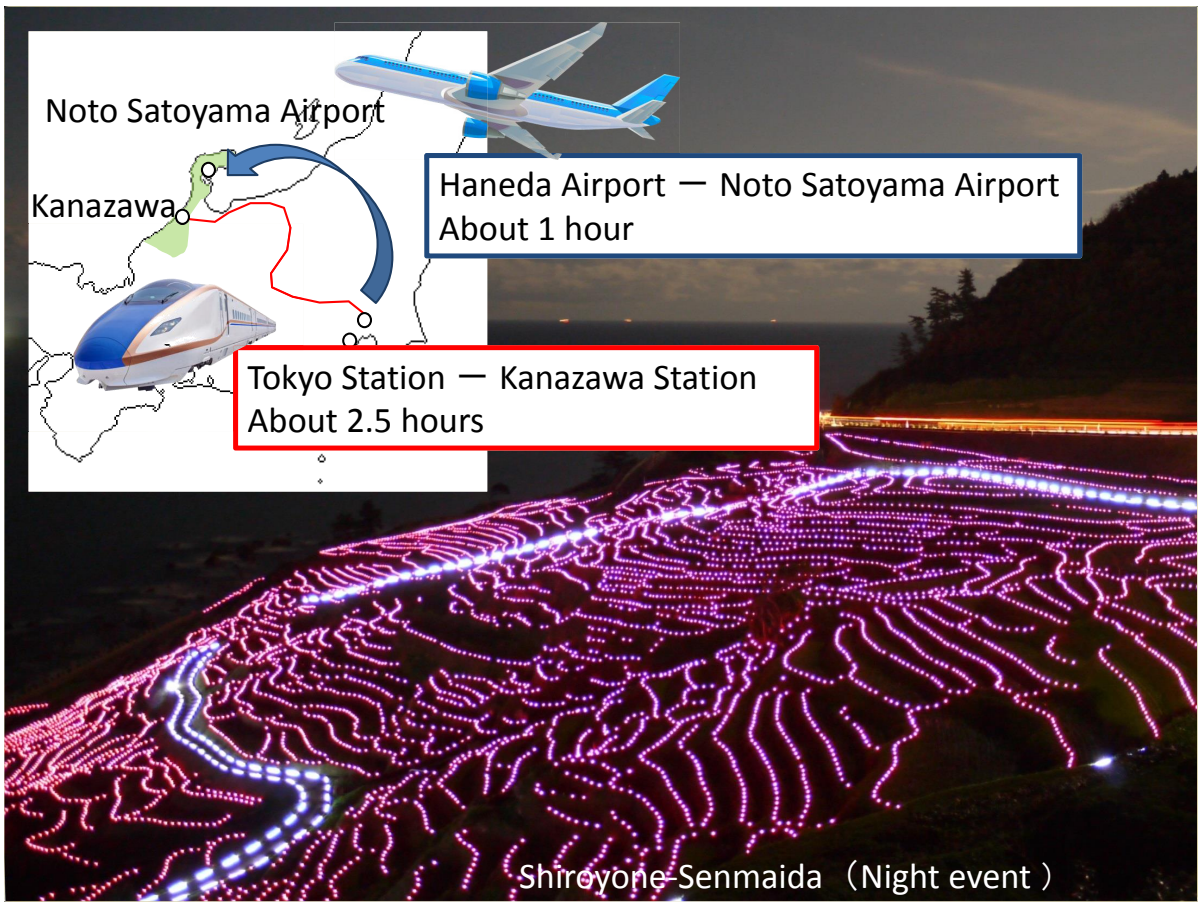
2014:Bhutan government official
2015:Cambodia, Indonesia,
Vietnam government officials





Ifugao Satoyama Meister training program(2014-)

17



Session II -5

『Strengthening brands of the tea produced by the Chagusaba Farming method to revitalize local communities』

Mr. Hideshi Suzuki (Public officer, Office of Tea Industry Development Division, Shizuoka Prefectural Government)

地域活性化にむけたブランド化の推進

Strengthening brands of the tea produced by the *Chagusaba* Farming method to revitalize local communities



世界農業遺産「静岡の茶草場農法」推進協議会
Association for Promotion of GIAHS "*CHAGUSABA* in Shizuoka"

ふじのくに「茶の都しずおか」
Shizuoka:The Tea Capital

現状

- ●茶の歴史と文化※が息づいている
- ●茶が生活に根付いている
- ●茶の学術研究が盛んである
- ●茶の生産、流通が日本一で静岡の農産物の代表である
- ●優れた茶園景観や資源がある

※・800年の歴史がある
・記念碑や施設が豊富
・手揉みや茶草場農法の伝承　など

推進方向

人材育成　情報発信　拠点作り
生活　観光　学術
産業　文化

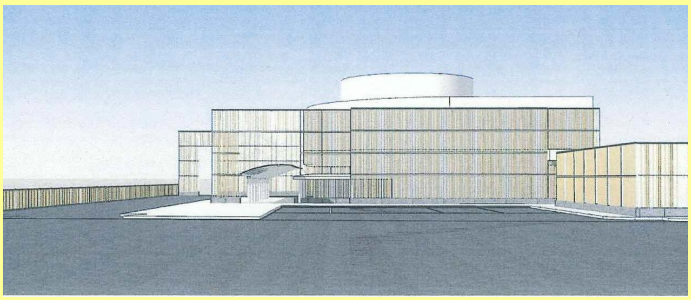


ふじのくに「茶の都しずおか」

島田市お茶の郷
Ocha-no-Sato World Tea Museum







ふじのくに茶の都ミュージアム（仮称）

茶草場へのアクセス
The Access to Chagusaba Field





茶草場農法の流れ
The *Chagusaba* Process

①草刈 Cutting grass　　②乾燥 Drying



③

茶草場農法の効果
Effects of *Chagusaba*

茶園の保湿力維持
Maintains moisture of tea fields

保肥力を高める
Supports ability to retain nutrients

土壌の流出防止
Prevents soil erosion

干害防止・雑草抑制
Prevents droughts and stops the growth of weeds

↓

樹勢の向上
Promotes tree growth

↓

「よいお茶」ができると確信
Belief that tea produced will be of high quality

↓

茶草場農法の継承
Continuation of *Chagusaba*

茶草場に息づく生物多様性
Biodiversity in *Chagusaba* Field



早春の太陽光が小さな植物にも注がれる

茶草場の花たち *Chagusaba* Field Flowers



フジバカマ
Eupatorium japonicum



カワラナデシコ
Dianthus superbus



キキョウ
Platycodon grandiflorus



オミナエシ
Patrinia scabiosifolia



フジタイゲキ
Euphorbia watanabei



ツリガネニンジン
Adenophora triphylla



Lysim



絶滅危惧種を含む300種類以上
At least 300 species of plant life, including
in *Chagusaba* fie



カケガワフキバッタ
Parapodisma awagatakensis

静岡の茶草場農法の特徴
Characteristics of Shizuoka's *Chagusaba* Method

良いお茶を作りたいという農家の努力が
Effort by farmers to produce good tea leads to…

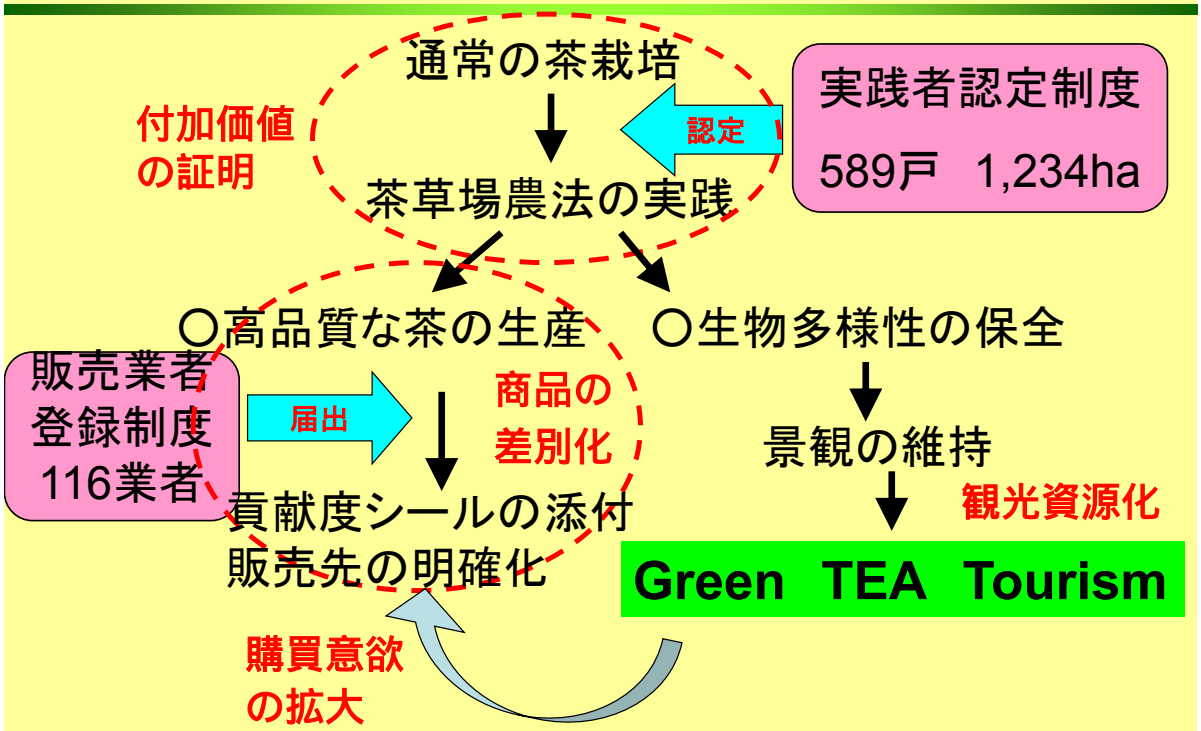
高品質な茶の生産
Production of high-quality tea

生物多様性の保全
Conservation of biodiversity

この二つを両立させている
…the achievement of these two effects

茶草場農法によるブランド化推進

Strengthening brands using *Chagusaba*



茶草場農法実践者認定制度

Authorization system for *Chagusaba* farmers

	茶草場管理面積/茶園経営面積の割合			
認定区分	5%未満	5～25%未満	25～50%未満	50%以上
認定表示	なし	一つ葉	二つ葉	三つ葉

茶園経営面積に対する茶草場の管理面積に応じ、生物多様性保全貢献度として3ランクの認定

Three-rank system based on percentage of total tea fields made up by *Chagusaba* and contributions to preserving biodiversity



生物多様性保全貢献度を
お茶の葉の数で表している。

Number of leaves indicates level of contribution to biodiversity

応援制度確立への支援委員会設置
Support Committee to Establish the Support System for farmers

目標：農法の継続と次世代への継承

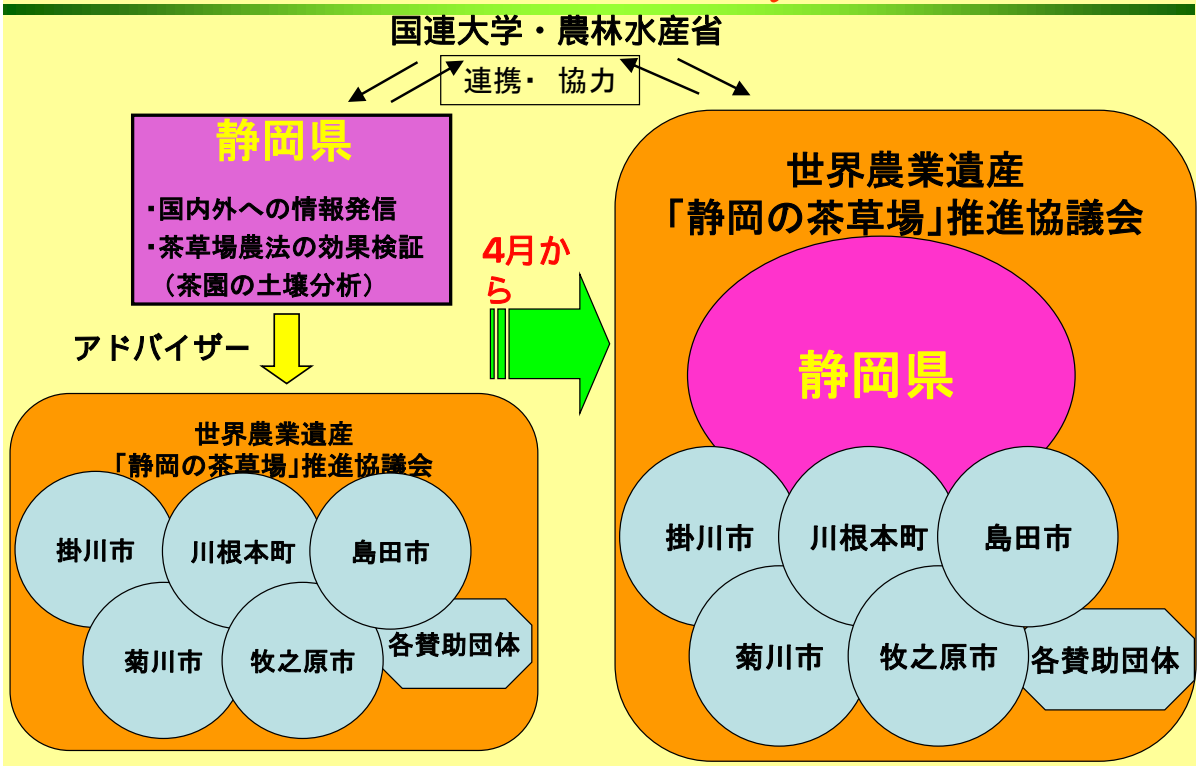
課　題
- 実践者の高齢化、減少
- 作業意欲の低下

対応策
- ボランティアの活用
- 企業との協働

応援制度
- 受け入れ態勢の整備
- 資金確保
- 人手の確保
- マッチング協力

支援委員会で検討

新しくなった推進体制
Reformed Promotion System



静岡サイトで見られる景観
The Scenery in Shizuoka Site








世界お茶まつり【秋の祭典】
World O-CHA (Tea) Festival【FALL FESTIVAL】
2016年 10月27日（木）～10月30日（日）
Thursday,October 27 to Sunday, October 30,2016



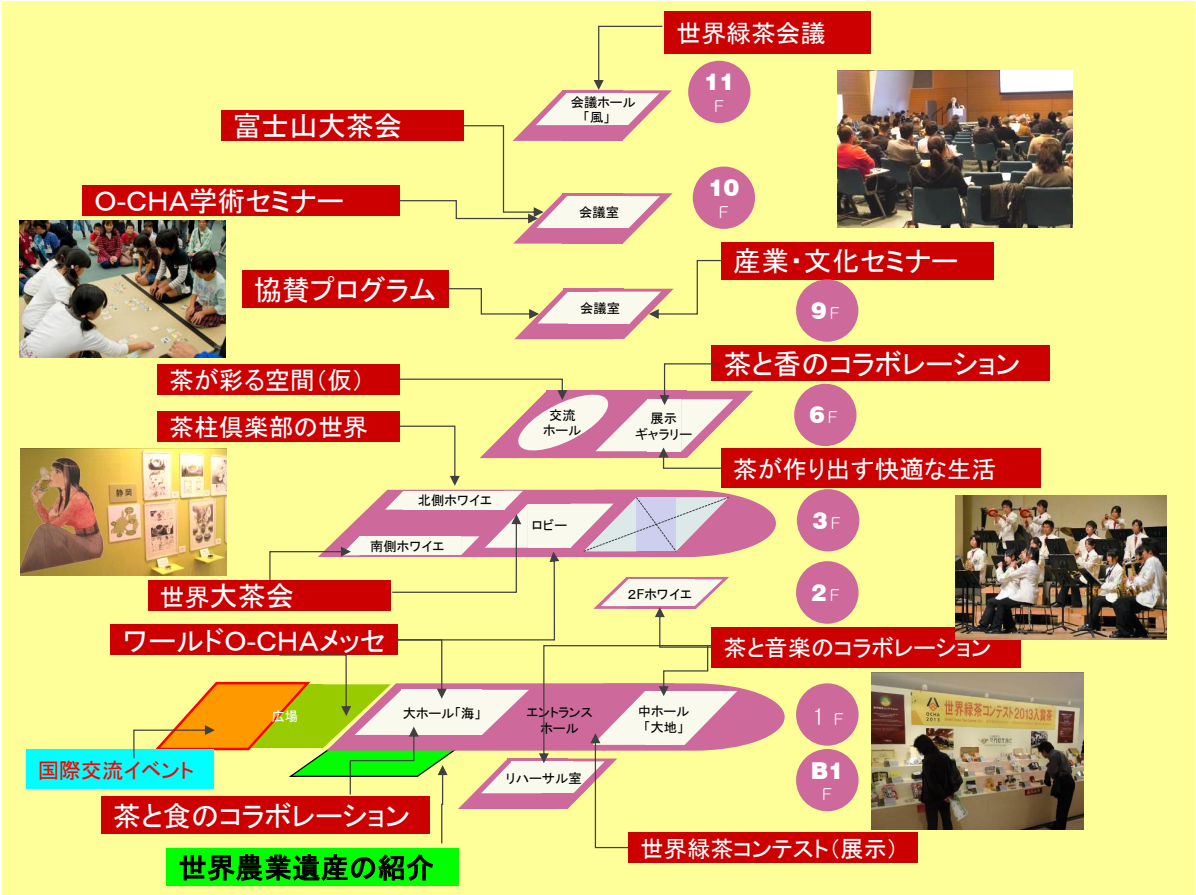


Experience O-CHA (Tea) with the Five



Granship
(Shizuoka Convention & Arts Center)





Forum on Tea and GIAHS

期間：2016年10月25日（火）
会場：掛川グランドホテル
対象：実践者（生産農家）、
目的：「茶」によるシステム
交換により、各サイト

スケジュール

日程	内　容
10月25日 13：00～	Forum on Tea and GIAHS
26日	
27日 ～30日	第6回世界お茶まつり



Session II -6

『Research on Soil Quality Variation of Forest-Ginseng System in Northeast China』

Mr. Liu, Weiwei (Researcher, IGSNRR, CAS)

东北地区林参复合经营土壤质量变化研究

Research on Soil Quality Variation of Forest-Ginseng System in Northeast China

Liu Weiwei
Institute of Geographical Sciences and Natural Resources Research, Beijing, China



汇报提纲 Outline

1. 绪论 Intorduction
2. 研究区概况和方法 Study area and method
3. 研究结果 Results
4. 结论与展望 Conclusion and progress

1.1 Background

1. As one of the ancient and multiple benefits of land use, agroforestry has been widely adopted by the whole world.
2. During the process of deepen forestry reform and transform of forestry development mode, under-forestry economy has been considered as an effective way.
3. The forest-ginseng system is one of the typical under-forestry economic modes in the northeast of China.
4. Soil quality is still an important factor restricting the development of ginseng cultivation.

1.2 Research progress

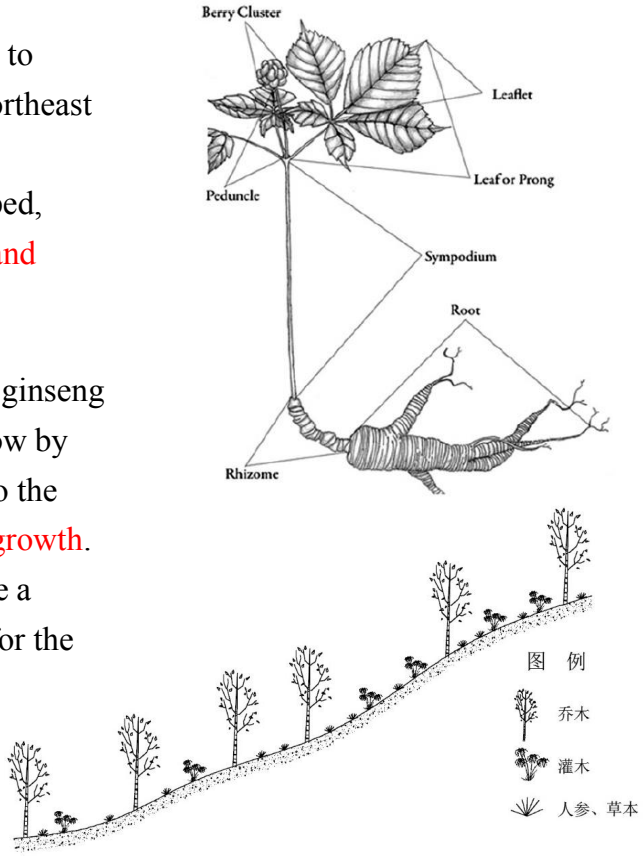
- The mode of ginseng cultivated under forest is still scarce in the world.
- In view of the precious medicinal value of ginseng, research on its pharmacology has been studied in detail. Especially the Journal of Ginseng Research.
- Currently, disseminated and physiological diseases, continuous cropping obstacles, are still not well resolved in ginseng cultivation.





Ginseng is a perennial herb, belongs to *Araliaceae Panax*, known as the “northeast Sanbao”.
Ginseng pays attention to five - shaped, which is root, rhizome, skin, grain, and body.

Forest-ginseng system is a mode of ginseng cultivation, which ginseng seed is sow by human under the forests according to the different sow patterns, with natural growth. Meanwhile, arbor vegetation provide a suitable microclimate environment for the growth of ginseng.



汇报提纲 Outline

1. 绪论 Intorduction
2. 研究区概况和方法 Study area and method
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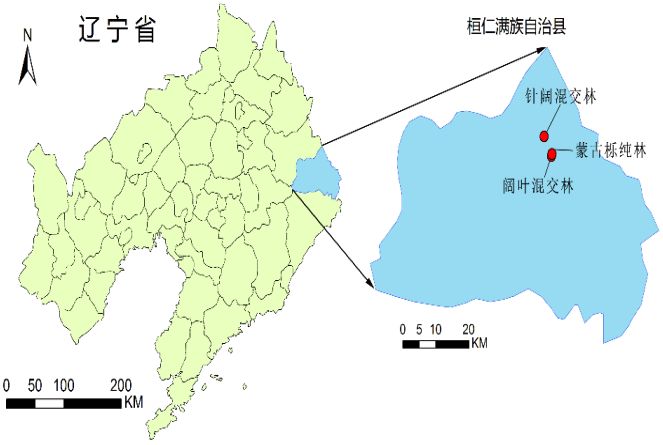
4. 结论与展望 Conclusion and progress

2.1 Study area

Location： The study area is located in Huanren Manchu Autonomous County of eastern Liaoning Province, Northeast China, which belongs to the southeast continuation of the Changbai Mountain range. The location is 124° 27′-125° 40′east longitudes，40° 54′-41° 32′north latitudes.

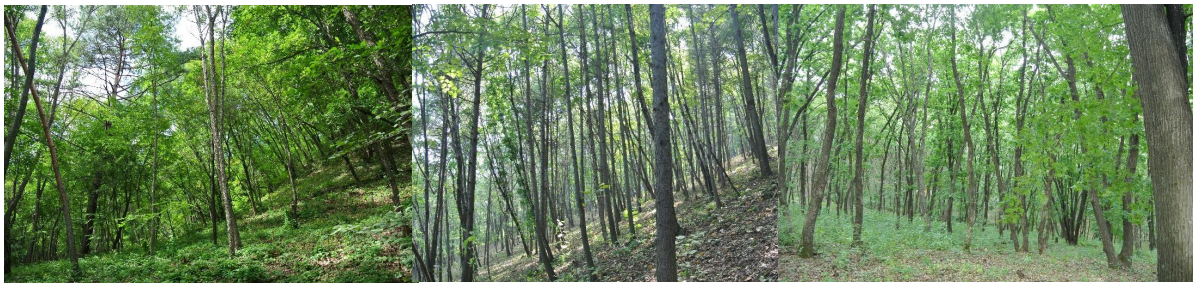
Climate and soil： The study area has a humid mid-temperate climate with strong continental monsoon features including four distinct seasons. The mean annual air temperature is 6° C -8° C, and annual precipitation ranges is 800 - 1000 mm. The parent material is granite bedrock and the soil is Haplumbrepts.



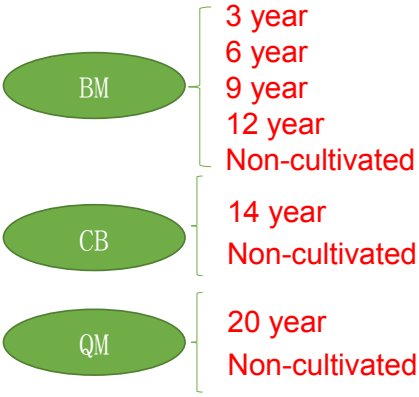
2.2 Plot characteristics

Currently, broad-leaved mixed forest (BM), conifer and broad-leaved mixed forest (CB), and Quercus mongolica forest (QM) are widely distributed forest-ginseng agroforestry stand types.

Forest types	Slope	Aspect(°)	Slope(°)	Alt. (m)	WPD (trees/hm²)	DBH(cm)	Height(m)	Plant coverage
BM	Upper	East	24	442	765	17.37	18.64	0.75
CB	Middle	Northeast26	20	534	585	20.82	19.85	0.70
QM	Upper	East	20	529	495	24.26	22.55	0.70



2.3 Soil sampling





We randomly selected three pieces of ginseng at a certain distance in the three kinds of forest types with different ages of ginseng. Then, we collected the surrounding soil of ginseng roots along the growth direction. Part of soil stored in the -4 C portable refrigerator for soil microbial and soil enzyme determination, part of soil stored in the normal temperature preservation for soil nutrient determination, and 100cm^3 ring knife used to collect soil for the determination of soil physical properties. In addition, we collected the non-cultivated ginseng soil in the three kinds of forest types, and the depth of soil sampling is similar to the depth of ginseng growth.

2.4 Soil analysis

In this study, physical, chemical, and biological indicators were measured to reveal the variation characteristics of soil quality in forest-ginseng system.

	Indicators
Physical properties	BD(Bulk density)、BP(Bulk porosity)、NCP(Non-capillary porosity)、MMC(Maximum moisture capacity)
Chemical properties	pH、OM(Organic matter)、TN(Total N)、TP(Total P)、AP(Available P)、TK(Total K)、AK(Available K)
Microbial activity	MBC(Microbial biomass carbon)、MBN(Microbial biomass nitrogen)
Soil enzyme activities	POD(Peroxidase)、βG(β-1，4-glucosidase)、NAG(β-1，4-N-acetylglucosaminidase)、AP(acid phosphatase)
Soil microorganism	B(Bacteria)、F(Fungi)、A(Actinomycetes)

汇报提纲 Outline

1. 绪论 Intorduction

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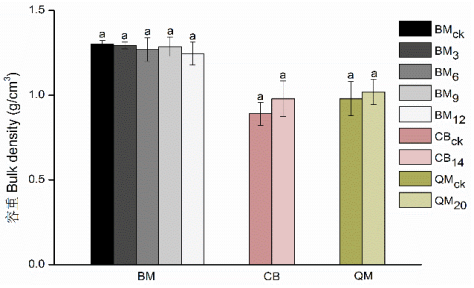
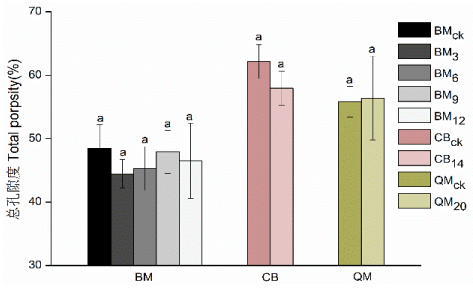
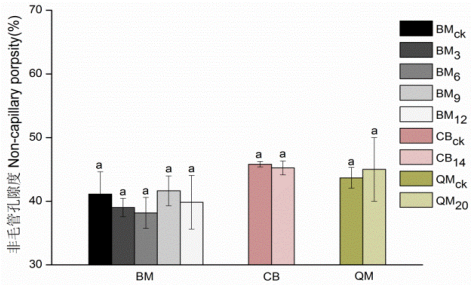
4. 结论与展望 Conclusion and progress

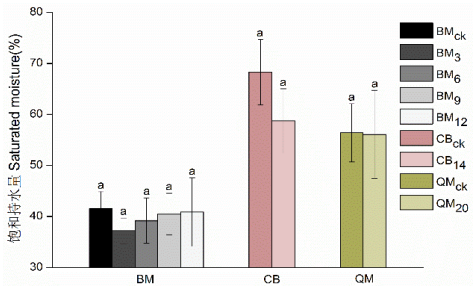
3.1 Physical properties

In terms of physical properties, ginseng cultivation with different ages has no obvious difference.



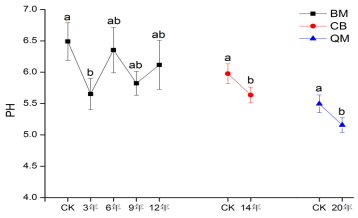


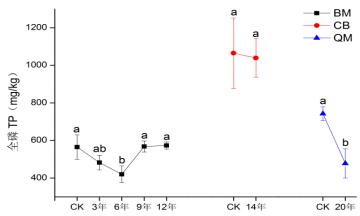


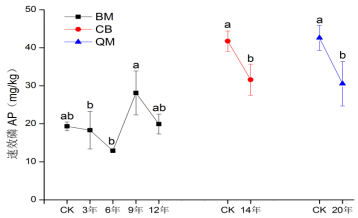


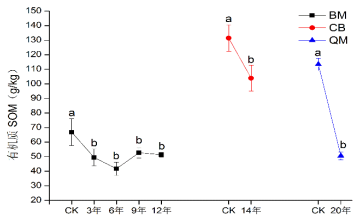
3.2 Chemical properties

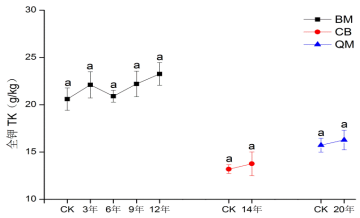
In terms of nutrients, in addition to total K, the other nutrients show a downtrend of fluctuation from 3 to 12 years in BM, and 6 year ginseng soil is an obvious turning point; however, the other nutrients decreased significantly in CB and QM.

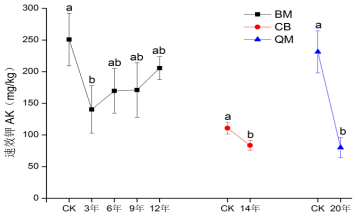


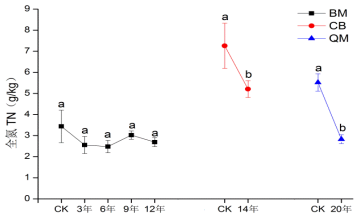






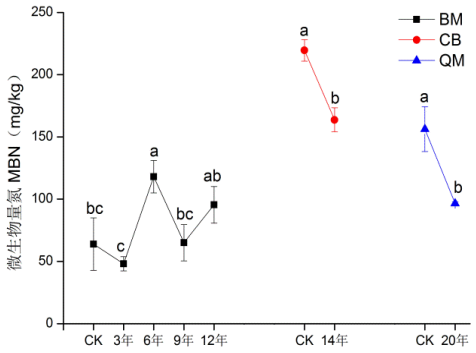


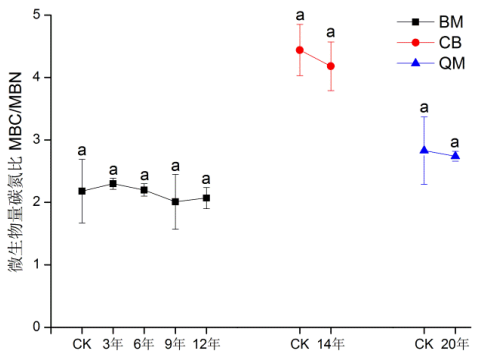


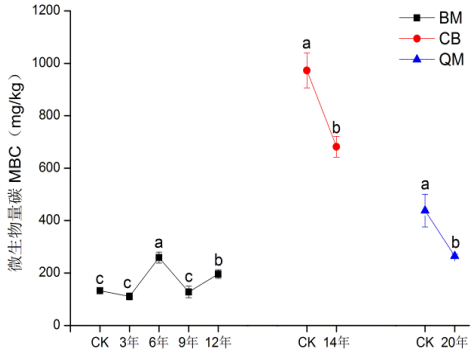


3.3 Microbial activity

In terms of microbial biomass, microbial biomass C and N show a fluctuation from 3 to 12 years, and microbial biomass C and N contents are the highest in 6 year ginseng soil; in CB and QM, the microbial biomass C and N contents decrease significantly in 14 year ginseng and in 20 year ginseng separately.





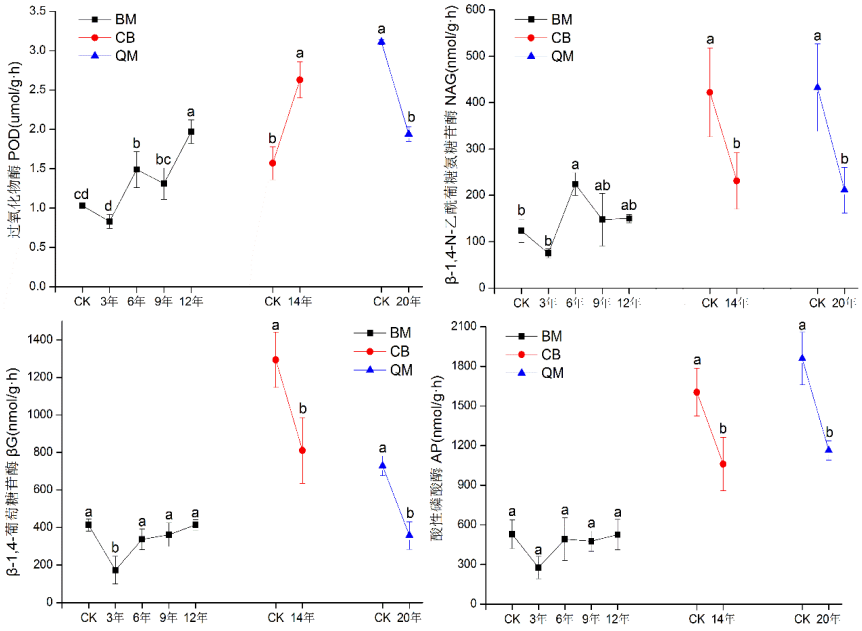


3.4 Soil enzyme activities

In terms of enzyme activity, in BM, POD presents an upward trend of fluctuation; NAG drops to the lowest in 3 year, then rises to the highest in 6 year, thereafter decreases a little until 12 year; βG and AP also drop to the lowest in 3 year, then rise to the highest in 6 year, thereafter remain stable until 12 year.

In CB, NAG、βG and AP in 14 year ginseng decrease significantly, but POD increases significantly.

In QM, all the enzymes have a significant drop.

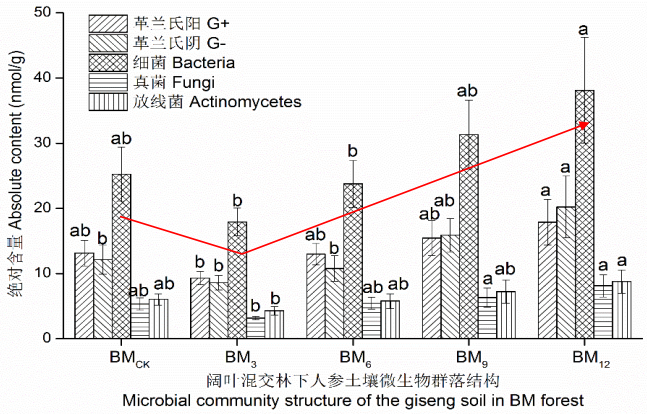


3. 5 Soil microorganism

3.5.1 BM（阔叶混交林）

In BM, the microbial quantity and species present fluctuating changes; soil microbial community and diversity also show fluctuating changes. but the difference is not significant compared with non-cultivated ginseng soil.

In addition, 6 year ginseng is a turn point.

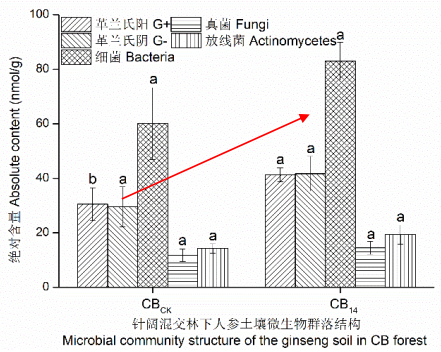


处理	多样性指数 (H')	均匀度指数 (J)	丰富度指数 (R)
BM_{CK}	3.12±0.05a	0.91±0.01ab	2.68±0.09a
BM_3	3.17±0.08a	0.91±0.01ab	2.89±0.27a
BM_6	3.21±0.03a	0.92±0.01a	2.88±0.17a
BM_9	3.03±0.12a	0.88±0.02b	2.75±0.11a
BM_{12}	3.14±0.03a	0.89±0.02ab	2.87±0.24a

处理	Microbial community structure			
	G+/G-	A/B	A/F	F/B
BM_{CK}	1.0869	0.2402	1.1505	0.2122
BM_3	1.0852	0.2397	1.3571	0.1767
BM_6	1.2170	0.2427	1.0589	0.2294
BM_9	0.9708	0.2291	1.1443	0.2006
BM_{12}	0.8891	0.2303	1.0800	0.2133

3.5.2 CB（针阔混交林）

In CB, compared with the non-cultivated ginseng soil, the microbial quantity and species of 14 year ginseng soil has no obvious changes, soil microbial biomass has a increase, but not significantly; soil microbial community and diversity also have no obvious changes, which may indicate that the microbial community is stable and the soil environment is still in the state of being suitable for the growth of ginseng based on the state of ginseng.



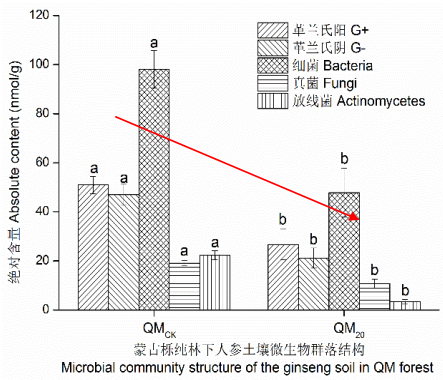
针阔混交林下人参土壤微生物群落结构
Microbial community structure of the ginseng soil in CB forest

处理	Microbial community structure			
	G+/G-	放线菌/细菌	放线菌/真菌	真菌/细菌
CB_{CK}	1.0382	0.2421	1.2227	0.1980
CB_{14}	1.0049	0.2315	1.3330	0.1735

处理	多样性指数 (H')	均匀度指数 (J)	丰富度指数 (R)
CB_{CK}	3.32±0.02a	0.91±0.01a	3.17±0.16a
CB_{14}	3.30±0.04a	0.89±0.02a	3.22±0.13a

3.5.3 QB（蒙古栎纯林）

In QM, compared with the non-cultivated ginseng soil, the microbial quantity and species of 20 year ginseng soil has obvious reduction; soil microbial biomass decreases significantly; the proportion of actinomycetes decreases significantly, the proportion of fungi、G+/G- and evenness index have a increase, which may indicate that the microbial flora tends to be stable equilibrium state.



蒙古栎纯林下人参土壤微生物群落结构
Microbial community structure of the ginseng soil in QM forest

处理	Microbial community structure			
	G+/G-	A/B	A/F	F/B
QM_{CK}	1.0873	0.2273	1.1639	0.1954
QM_{20}	1.2550	0.0715	0.3185	0.2254

处理	多样性指数 (H')	均匀度指数 (J)	丰富度指数 (R)
QM_{CK}	3.31±0.06a	0.90±0.01b	3.21±0.10a
QM_{20}	3.30±0.01a	0.92±0.00a	3.01±0.05b

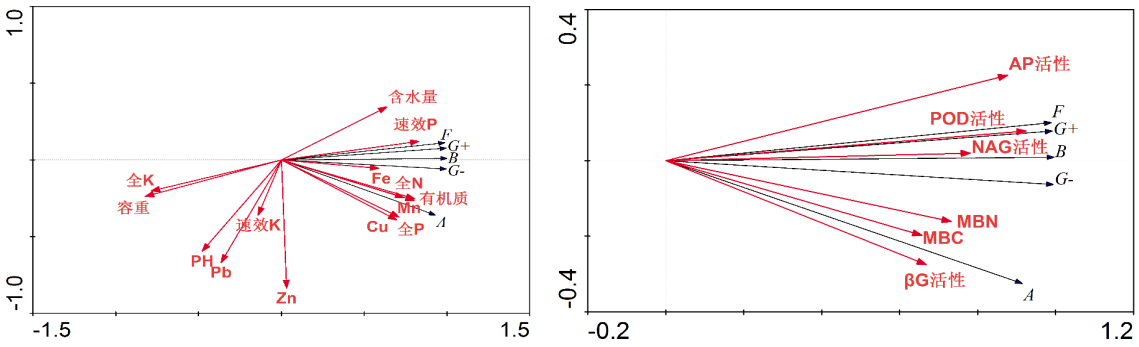
3.2.3 Influence of environmental factors

Microbial biomass has a negative correlation with bulk density and pH, and a positive correlation with nutrients and enzymes.

In the physical and chemical factors, AP、TN、OM、T Mn have a lager impact on the microbial community, but T Zn、T Fe、AK have a low impact.

In the biological factors, AP、POD、NAG have a great influence on B、F，and MBC、MBN、βG have a great influence on A.

In addition, four kinds of soil enzymes and microbial activities have positive effect on the microbial community.



汇报提纲 Outline

1. 绪论 Intorduction
2. 研究区概况和方法 Study area and method
3. 研究结果 Results
4. 结论与展望 Conclusion and progress

Conclusions

The study concludes that 6 year is a turning point during the growth of ginseng that the growth is very active at this time, 14 year may be another turning point that the growth begin to slow down obviously at this time, and 20 year has been basically stable.

The characteristics of forest stand types and ginseng cultivation years had different influences on soil quality. From the perspective of stand types, the suitable degree of ginseng cultivation decrease in order of CB, QM and BM. From the perspective of ages, the soil quality decreases gradually with the increase of ginseng cultivation age.

However, the soil quality value present a fluctuation in BM, which may be related to the variable activity of ginseng growth in 12 years, and the poor stand site of BM influencing the ginseng growth that indirectly influence the variation of soil quality in return.

Deficiency

- At present, the planting of ginseng under forest is a piece of land. It is very difficult to find the similar site characteristics with different age of ginseng. In addition, Farmers are excluded from soil sampling in ginseng yard.
- The lack of analysis on the quality of ginseng and other aspects for the different types.

Expectation

- Actively establish forest-ginseng system operation of production and research base, strengthen the monitoring and evaluation of ginseng soil in different conditions.
- Strengthen the soil quality management of forest-ginseng system.
- Actively adopt molecular biology and other biological technologies to strengthen the experimental research on soil microorganisms.


谢谢！
Thanks！
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Session II -7

『"Na" Culture of the Zhuang Nationality: A Case Study of Long-an』

Ms. Gong, Tingting (Ph.D Candidate, College of Life and Environmental Science, Minzu University of China)

“Na” culture of Zhuang

A case study of Long-an

Gong Ting-ting

Contents

1 “Na” culture of Zhuang

2 “Na” culture has a long history.

3 Colorful and exuberant ”Na” culture

4 The protection and development of “Na” culture

“Na” culture

- Zhuang， as one of first groups to grow rice, has a long history of rice cultivation. Rich rice culture with national characteristics has been formed in the long rice-growing process.
- Zhuang people call Paddy field as “Na”， so the rice culture was also called “Na” culture.

The place name of “Na”

- Zhuang people depend on rice and their houses were usually constructed near paddy field.
- There is a traditional naming method of place name.
- The place name of “Na” is also an important part to reflect the rice culture of Zhuang.

More than 23 thousands place name that named after “Na” in Guangxi.(广西壮族自治区地名委员会开展地名普查，1982)
Almost 138 among 1232 natural villages with “Na” place name in Long-an (Annals of Long-an, 1982)



The great stone spade



- Large number of ruins of the great stone spade in the new stone implements era were found in Long-an.
- arranged in order
- agricultural sacrificial utensils

Diet custom

The Zhuang people depend on rice as their main food and create all kinds of rice products.

Up to 100 kinds of rice products according to statistics.

The series of rice porridge, rice noodle, rice cakes, rice flakes, rice dumplings, rice wine…








The five-colored sticky rice



It is named by five colors, black, red, yellow, white, purple.

The Zhuang people must steam colored sticky rice every major holiday.

Bumper Giain Harvest

Residential building

Stilt house



Drying grains

People live in the upper part.

Storage grains and farming tools, captive domestic animals.

Life customs

birth

Seven days after birth, the baby' s lip was coated by rice milk.

young

When the daughter get married, her family strew rice flowers on the bride.

old

Add rice to extend lifespan

death

When people pass away, putting some rice grain in their mouth and a bowl of rice on the altar.

Traditional farming festivals



- The traditional festival of Zhuang was developed from agricultural worship initially.
- Until now, the sacrifice rites are also an important part of various festivals.
- Glutinous rice is used to offer sacrifices to gods and ancestors.

Traditional farming festivals

Preparatory stage ▪ plow the field; manure collection	**Lunar February-March** ▪ Songs Fair Festival
Seedling stage ▪ fertilization; soaking seed; scatter grain; transplant seedlings	**Lunar April** •Farm implements Festival •Buffalo Festival
Field management stage ▪ cultivated scarification; fertilizer irrigation; control of insect and disease	**Lunar May-July** ▪ Mangna Festival ▪ Ghost Festival ▪ Ya queen Festival
Harvest and storage stage ▪ harvest; drying in the sun; go to barn	**Lunar August-December** ▪ Changxin Festival ▪ Warehouse God Festival

Mangna Festival

Lunar June 6th; at the critical stage of earing, flowering, grain-filling; offer sacrifices to rice to pray for a good harvest.



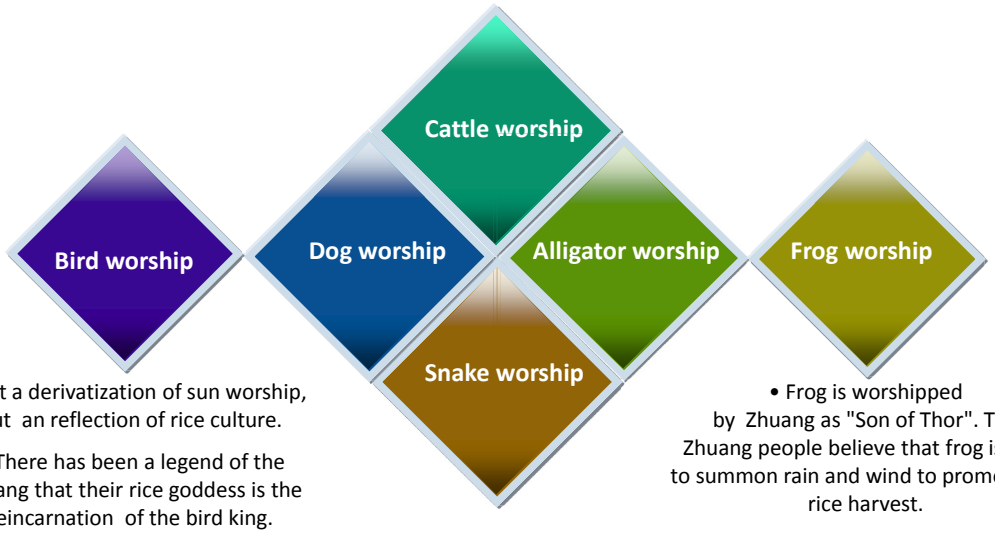
The Frog Festival

- Frog is worshipped by Zhuang as "Son of Thor". The Zhuang people believe that frog is able to summon rain and wind. Zhuang people celebrate a "frog festival" every year.



Totem Worship

Main totem related to rice culture



• Not a derivatization of sun worship, but an reflection of rice culture.

• There has been a legend of the Zhuang that their rice goddess is the reincarnation of the bird king.

• Frog is worshipped by Zhuang as "Son of Thor". The Zhuang people believe that frog is able to summon rain and wind to promote the rice harvest.



The protection and development of “Na” culture of Long-an

- “Na”culture system of Zhuang in Long-an has elected to the third batch of Nationally Important Agricultural Heritage Systems in China.
- Build ecological agriculture tourism and leisure livable village with “Na” cultural characteristics.（2013）
- Finish”Na”culture trademark registration
- Declare the village of “Na” culture of China successfully.
- Hold “Na” cultural tourism festival

“Na” cultural tourism festival









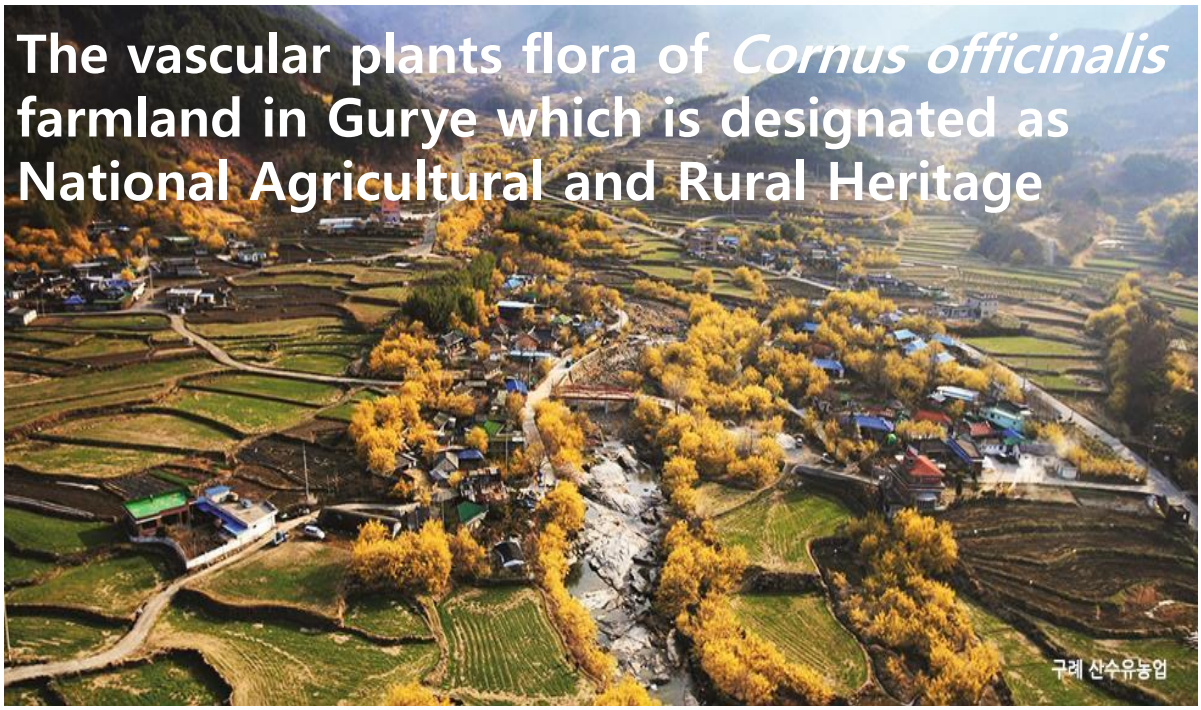
Thank you for your attention !

Session II -8

『The vascular plants flora of *Cornus officinalis* farmland in Gurye which is designated as National Agricultural and Rural Heritage』

Ms. Kim, Jin-won and Prof. Oh, Choong-Hyeon (Dongguk University)

The vascular plants flora of *Cornus officinalis* farmland in Gurye which is designated as National Agricultural and Rural Heritage



Jin Won Kim[1], Choong Hyeon Oh[2]

[1] Graduate School, Department of Biological and Environmental Science, Dongguk University

[2] Department of Biological and Environmental Science, Dongguk University

Contents

1. Background and purpose
2. Method
3. Results
4. Conclusion
5. References

Ⅰ. Background and purpose

1. Background

- With the increase in interest and awareness of the importance of agricultural resources, there are domestic and global efforts to preserve and manage such resources
- National Agricultural and Rural Heritage Areas are places in which local residents have wisely utilized their natural environments to sustain agriculture, making it possible to maintain their rich natural environments
- In order to reflect on such characteristics, domestic and overseas policies on the subject consider the harmony with nature and ecological characteristics of the local agricultural practices









*Reference: GIAHS Traditional Gudeuljang Irrigated rice terraces(http://gudeuljangnon.co.kr/)

Ⅰ. Background and purpose

1. Background

- Gurye, in which *Cornus officinalis* farmlands are situated, has a terrain consisting of 77.28% forests, which are unsuitable for farming. In order to overcome such terrain characteristics, people of Gurye began cultivating *Cornus officinalis* to make a living
- The history of the plant is long in Gurye, with Sandong-myeon playing host to Korea's first *Cornus officinalis* plant that is approximately one thousand years old
- *Cornus officinalis* farming area in Sandong-myeon produces 63.37% of all such plants grown in Korea, with the plant being cultivated and harvested in traditional methods to this day
- Also the agricultural districts are protected by stone fences which also act as habitats for various animals and plants







*Reference: Gurye-gun(2013). National Agricultural and Rural Heritage Application for Cornus officinalis Trees and Habitat

Ⅰ. Background and purpose

- *Cornus officinalis* cultivation is a major source of income for the local residents, and because of its scenic and ecological value, the national government designated the area as a National Agricultural and Rural Heritage
- Furthermore, Guyre is preparing to register the *Cornus officinalis* farmlands as a Globally Important Agricultural Heritage, and so for this the ecological survey is needed

2. Purpose

- The current study aims to investigate and analyze flora features of vascular plants at the *Cornus officinalis* farmlands in Sandong-myeon, Gurye, in order to identify the flora features of the farmlands and utilize the information as a basis for registering the area as a Globally Important Agricultural Heritage


<Pray ritual for rich year>


<Special product market>


<Peel the Cornus officinalis fruit>

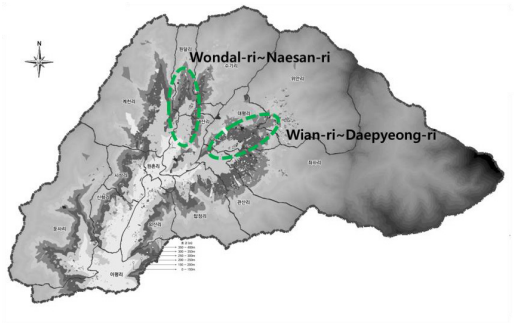
*Reference: gurye-sansuyu.com

Ⅱ. Method

1. Scope of the survey

- Temporal range :
  September 15 ~ 18, 2015

- Spatial range :
  The study selected two districts in Sandong (Wian-ri to Daepyeong-ri; Wondal-ri to Naesan-ri) that maintained *Cornus officinalis* farming for a long time and therefore thought to represent the characteristics of such farmlands well
  - ✓ Wian-ri to Daepyeong-ri : hosts many old *Cornus officinalis* trees, along with 157 main *Cornus officinalis* trees
  - ✓ Wondal-ri to Naesan-ri : has a relatively small number compared to Wian-ri to Daepyeong-ri





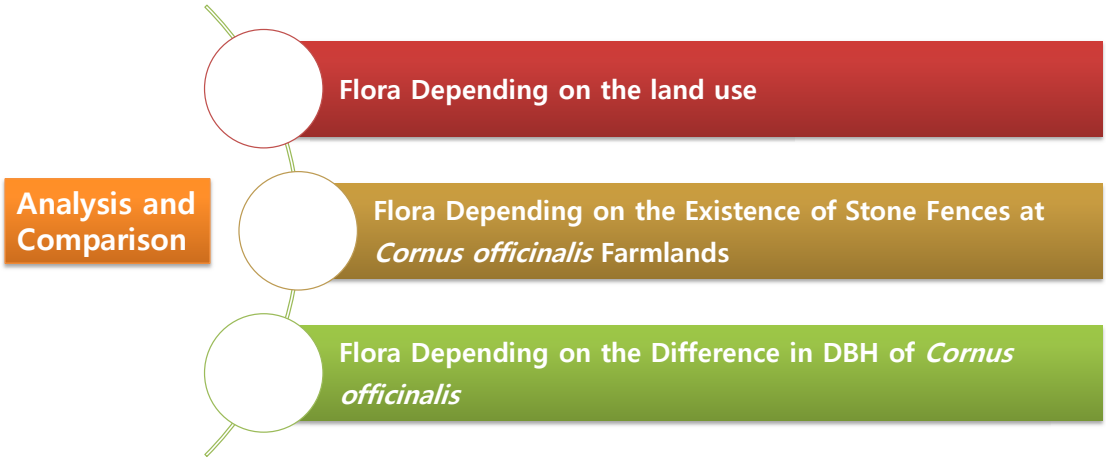
Ⅱ. Method

2. Method of researching Flora

- The land use at the studied areas were classified into: forests (bamboo forests and pine forests) adjacent to villages, general farmlands (rice paddies or fields), *Cornus officinalis* farmlands, villages, streams, and cemeteries
- The flora in the districts were studied by researchers walking the designated path, who investigated accessible areas from the path
- The investigation was conducted using Braun-Blanquet Method (Braun-Blanquet, 1913)
- When possible, plants were identified on site, and those that could not be identified were collected and later identified using literature by Lee Wu-cheol (1996), Lee Chang-bok (2003), and Lee Yeong-no (2006)
- The arrangement of the plants and the publishing of their academic names were done so in accordance with Korea Plant Names Index by the Korea National Arboretum and the Korean Society of Plant Taxonomists, as well as Engler System of Classification (Melchior, 1964)
- Naturalized plants were identified 321 Classification by Lee Yu-mi et al (2011), and naturalization rate (NR) was calculated by dividing the number of naturalized plant species by the number of total plant species found in the studied area
- Life form was analyzed with Numata and Asano (1969), which is a detailed expression of Raunkiaer (1934)'s life form

Ⅱ. Method

2. Method of researching Flora









Ⅲ. Results

1. Flora depending on Land use

1) Wian-ri to Daepyeong-ri District

- **According this order, *Cornus officinalis* farmlands>streams>villages>pine tree forests>fields>cemeteries>rice paddies>bamboo forests, many plants appeared**
- ***Cornus officinalis* farmlands had Compositae(14.4%), Polygonaceae (8.7%), and Leguminosae (5.8%), in descending frequency**
- **NR(the rate of naturalization) by land use was the highest in fields (19.0%), streams (17.0%), villages (15.9%), rice paddies (14.3%), cemeteries (11.9%), *Cornus officinalis* farmlands (10.6%), and pine forests (1.3%), with a relatively lower naturalization shown in *Cornus officinalis* farmlands**

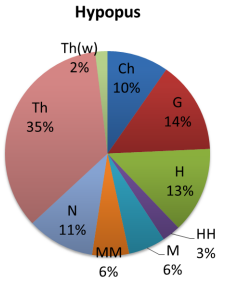
Land Use	Results
Streams	49 Families 78 Genus 76 Species 1 Subspecies 16 Varieties 1 Forma 94 Taxa
Rice Paddies	21 Families 61 Genus 31 Species 3 Varieties 1 Forma 35 Taxa
Bamboo Forests	18 Families 27 Genus 25 Species 5 Varieties 1 Forma 31 Taxa
Villages	47 Families 79 Genus 74 Species 14 Varieties 88 Taxa
Cemeteries	22 Families 40 Genus 34 Species 7 Varieties 1 Forma 42 Taxa
Fields	36 Families 53 Genus 53 Species 5 Varieties 58 Taxa
Cornus officinalis Farmlands	**46 Families 86 Genus 87 Species 1 Subspecies 15 Varieties 1 Forma 104 Taxa**
Pine Tree Forests	42 Families 59 Genus 57 Species 1 Subspecies 16 Varieties 3 Forma 77 Taxa

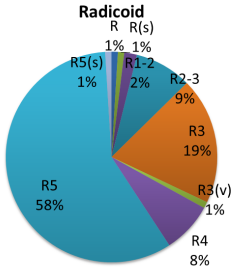
Ⅲ. Results

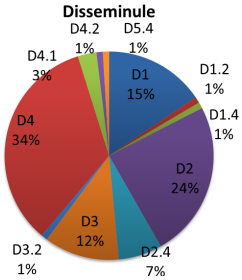
1. Flora depending on Land use

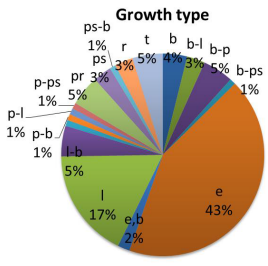
1) Wian-ri to Daepyeong-ri District

- ***Cornus officinalis* showed similar results in rates of every types of life forms with other land uses except bamboo forests and pine tree forests**









Ⅲ. Results

1. Flora depending on Land use

2) Wondal-ri to Naesan-ri District

- **According this order, *Cornus officinalis* farmlands>villages>pine tree forests>rice paddies>streams>cemeteries>fields>bamboo forests, many plants appeared**
- ***Cornus officinalis* farmlands had Compositae(9.6%), Polygonaceae (6.8%), in descending frequency**
- **NR(the rate of naturalization) by land use was the highest in fields(25.0%), villages(19.0%), rice paddies(18.0%), cemeteries(12.9%), *Cornus officinalis* farmlands(6.9%), streams(5.7%), and pine forests(3.6%), with a relatively lower naturalization shown in *Cornus officinalis* farmlands**

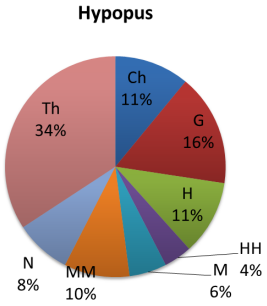
Land Use	Results
Streams	23 Families 229 Genus 23 Species 10 Varieties 2 Forma 35 Taxa
Rice Paddies	21 Families 37 Genus 35 Species 3 Varieties 1 Forma 39 Taxa
Bamboo Forests	18 Families 25 Genus 21 Species 4 Varieties 1 Forma 26 Taxa
Villages	32 Families 55 Genus 51 Species 6 Varieties 1 Forma 58 Taxa
Cemeteries	17 Families 28 Genus 28 Species 2 Varieties 1 Forma 31 Taxa
Fields	16 Families 27 Genus 26 Species 1 Varieties 1 Forma 28 Taxa
Cornus officinalis Farmlands	**41 Families 62 Genus 56 Species 16 Varieties 1 Forma 73 Taxa**
Pine Tree Forests	32 Families 47 Genus 44 Species 7 Varieties 4 Forma 55 Taxa

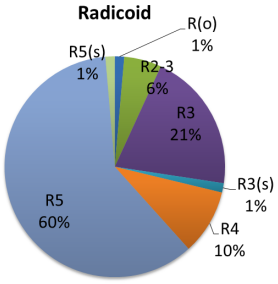
Ⅲ. Results

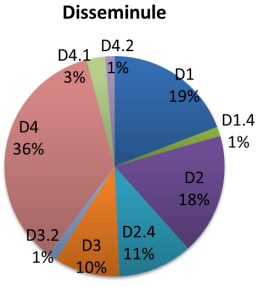
1. Flora depending on Land use

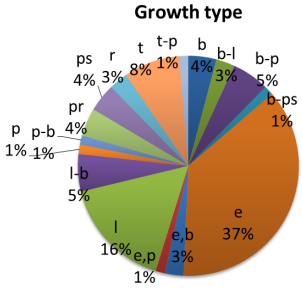
2) Wondal-ri to Naesan-ri District

- ***Cornus officinalis* showed similar results in rates of every types of life forms with other land uses except bamboo forests and pine tree forests**









Ⅲ. Results

1. Flora depending on Land use

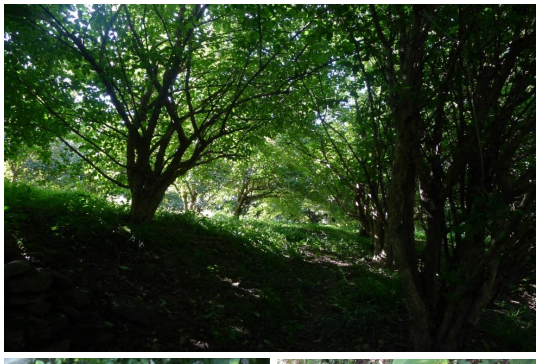
3) Comprehensive Comparison of the Districts

- Wian-ri to Daepyeong-ri district with more *Cornus officinalis* trees and older trees were shown to have more plant species compared to the district encompassing Wondal-ri to Naesan-ri
- Both districts, however, had the most number of plants at their *Cornus officinalis* farmlands
- In case of *Cornus officinalis* farmlands adjacent to forests, both districts had xylophytes such as *Aralia elata*, *Morus bombycis*, and such farmlands surrounded by stone fences had vine plants such as *Paederia scandens* var. *scandens*, *Parthenocissus tricuspidata*
- Overall, *Cornus officinalis* farmlands were host to more plant species encroaching from forests, rice paddies, and fields
- This is a reflection of the *Cornus officinalis* characteristics, in which the sub-tree *Cornus officinalis* can host other plants on its base, thereby playing a role as a habitat for other species
- In addition, the crown of *Cornus officinalis* creates a lack of light on the ground below, making the environment similar to a deeper forest. This obstructs the introduction of naturalized plants, driving down the NR than other types of land researched

Ⅲ. Results

1. Flora depending on Land use

< *Cornus officinalis* farmlands adjacent to forests >





[*Morus bombycis*]



[*Aralia elata*]

< *Cornus officinalis* farmlands surrounded by stone fences >





[*Paederia scandens* var. *scandens*]



[*Parthenocissus tricuspidata*]

Ⅲ. Results

2. Flora Depending on the Existence of Stone Fences at *Cornus officinalis* Farmlands

- Stone fences not only mark the borders of farmlands, but also inhibit the evaporation of water in land as well as providing habitat for various animals and plants
- The study investigated the difference in flora depending on the existence of stone fences at *Cornus officinalis* farmlands; many species were found at sites with stone fences, but there were no tendencies
- However, that the stone fences can host *Ampelopsis heterophylla, Paederia scandens* var. *scandens, Celastrus orbiculatus, Parthenocissus tricuspidata, Cocculus trilobus, Metaplexis japonica, Clematis apiifolia*, and other various types of vine plants
- Vine plants can prevent the stone fences from collapsing and host various pollinating insects, ultimately helping *Cornus officinalis* cultivation





Ⅲ. Results

3. Flora Depending on the Difference in DBH of *Cornus officinalis*

- Through on-site observation, the study defined more recent farmlands having plants with less than 8cm of DBH on average, and older ones as having plants with more than 15cm of DBH on average
- In case the average DBH was more than 15cm, the distance between the plants were wider and the plants were generally adjacent to forests, with more cases of stone fences being present at the farmlands
- But in case the average DBH was lower than 8cm, in contrast, the distance between the plants were shorter and the plants were adjacent to villages, rice paddies, and fields, with farmlands being rarely surrounded by stone fences



< *Cornus officinalis* farmlands with the average DBH > 15cm>



< *Cornus officinalis* farmlands with the average DBH < 8cm>

Ⅲ. Results

3. Flora Depending on the Difference in DBH of *Cornus officinalis*

- **Wian-ri to Daepyeong-ri and Wondal-ri to Naesan-ri both hosted more plant species in *Cornus officinalis* farmlands with plants that had an average DBH larger than 15cm**
- **This was determined to be caused by the fact that *Cornus officinalis* with DBHs larger than 15cm are mostly located near forests, where more plants can be introduced from**
- **In addition, because the distance between individual trees are wider for larger trees, there is more room for other species to take root**

Classification		Results
Wian-ri to Daepyeong-ri	Average DBH > 15cm	41 Families 74 Genus 73 Species 1 Subspecies 13 Varieties 1 Forma 88 Taxa
	Average DBH < 8cm	25 Families 33 Genus 33 Species 3 Varieties 36 Taxa
Wondal-ri to Naesan-ri	Average DBH > 15cm	36 Families 53 Species 47 Species 14 Varieties 1 Forma 62 Taxa
	Average DBH < 8cm	21 Families 24 Genus 23 Species 4 Varieties 27 Taxa

<Xylophytes in *Cornus officinalis* farmlands where show the average DBH > 15cm>



[*Cudrania tricuspidata*]



[*Zelkova serrata*]



[*Kalopanax septemlobus*]

Ⅳ. Conclusion

- **The current study was conducted in order to understand the flora of the *Cornus officinalis* farmlands in Sandong-myeon at Gurye, which is registered as a National Agricultural and Rural Heritage**
- **In order to conduct the study, the flora characteristics were compared and analyzed in terms of land use, existence of fence at the farmlands, and the average DBH of *Cornus officinalis* trees**
- **The results showed that the *Cornus officinalis* farmlands hosted more types of plants compared to other land use types, but had lower rate of naturalization(NR)**
- **As for the existence of stone fences at the farmlands, it did not affect the number of plant species present greatly, but farmlands with average DBH larger than 15cm was found to host more types of plant species than those with average DBH lower than 8cm**
- **It is thought that the most important factor in such results is the characteristics of *Cornus officinalis*. Because it is a sub-tree species, it creates conditions in which plants introduced from nearby patches(mountains, villages, streams, and rice paddies) can take habitation at the lower part of the plant**
- **In addition, the thicker crown of *Cornus officinalis* creates an environment adverse to the naturalized plants, driving down NR and encouraging the robust habitation of indigenous species**

Ⅳ. 결론 및 고찰

- Furthermore, the existence of xylophytes and various other plant species at older farmlands showed that *Cornus officinalis* trees there are able to grow in harmony with their surrounding environment, despite them being located at a cultivating area
- In conclusion, *Cornus officinalis* farmlands provide habitat for various plant species, thereby playing a role as ecological axes that connect forests and villages, which in turn is expected to enhance biodiversity
- In order to retain such characteristics of *Cornus officinalis* farmlands, lower-level vegetation under the trees should not be removed, and preserved as they have been growing in the past





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감사합니다
Thank you

Session II -9

『Application of Story-Doing for Sustainable of Agricultural Heritage』

Mr. Kang, Dong-Wan · Mr. Jung, Nam-Su · Mr. You, Hag-yeol
(Kongju National University/ChungNam Institute)

Application of Story-doing for Sustainable Agricultural Heritage

Kang, DongWan, Jung, NamSu, You, Hagyeol
Kongju National University, ChungNam Institute

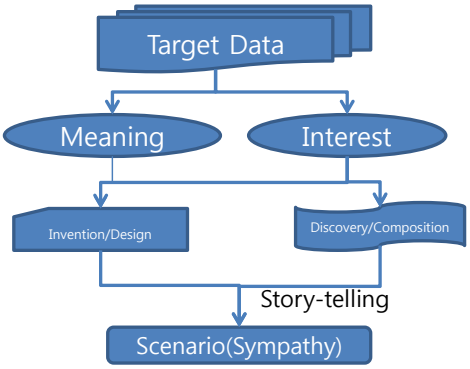
List of Contents

- Introduction
- Development of Model
- Application to TGIRT
- Conclusion
- Reference

Introduction

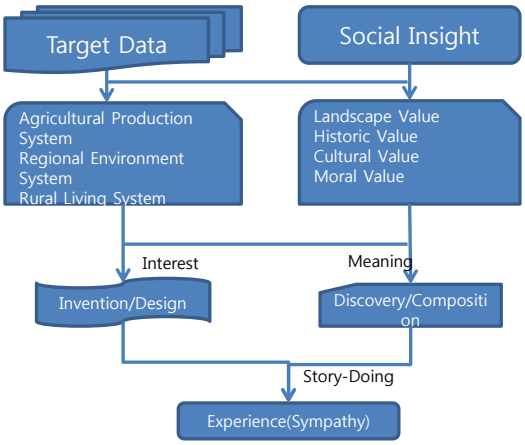
- Traditional Gudeuljang Irrigated rice terraces in Cheongsando and Batdam in Jeju island have been listed in world important agricultural heritage.
- There is the lack of a effective communication way in spite of various values of rural resources and the developed experience program consisted with unusual element even for the locals also not to sustain it except experts or not to combine with other elements of the village.
- In this study, we adapt story-doing suggested as a new marketing techniques for sustainable agricultural heritage.
- Working principle and structure of story-doing are formulated for developing application model. Developed model is applied to Traditional Gudeuljang Irrigated rice terraces in Cheongsando.
- Experience programs are suggested for agriculture heritage site to expand the base of the participants and sustainable system building.

Algorithm of Story-telling



- Kim(2014) defined in the algorithm storytelling, as shown in Figure to illustrate the algorithm in the story-doing.
- Analyze the data to determine components that can give meaning and fun, such as history, literature or the environment. To take advantage of this initiative to take advantage of the material or the material of the invention is configured sympathy of the audience through storytelling.

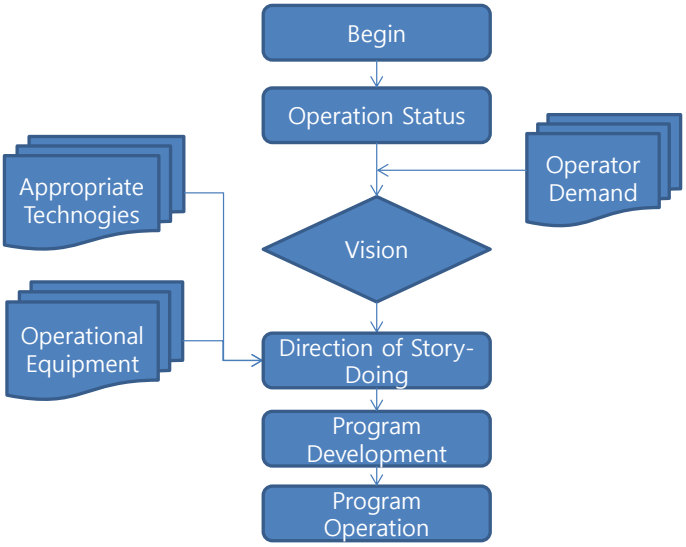
Algorithm of Story-Doing



- Unlike storytelling story-doing has an algorithm. Through the target material and social insight (1) to analysis system elements of agricultural production, the rural environment, rural life, rural economy, (2) to grasp the scenic, historic, cultural and moral values, (3) to make the invention a experience program through the initiative can feel the fun in the modern world, and (4) find meaning and understanding of the subject with fun in the experience process can relate to its value in experience.

Characteristics for story-doing

- **agricultural production, the rural environment, rural life, system elements of the rural economy**
- **The public function of agriculture and rural area**
- **Appropriate technology for invention and initiative**



Application to TGIRT in cheongsando I

System Elements

- Paddy is a product of nature and human relational (relational) activities to transform the natural environment through labor created by the state.
- Cheongsando original soil was developed this year to build a stone wall in the process of barren stony overcome many skills. Water scarcity in the natural environment-friendly agricultural development approach applied irrigation technology using the concept of the furnace heat transfer.
- Cheongsando residents were operational irrigation management through cooperative labor system.

Public Function

- The water flow to the exposed outer edges of cultivated land is situated in a unique landscape that can be seen only cheongsando gudeuljang rice fields.
- TGIRT is continuously sloping agricultural landscape and surrounding natural scenery formed by terraces in the slopes as the 'composition to form a complex landscape.
- Combined with the surrounding villages, coastal, living and has formed a diverse cultural landscape. Also in ecological terms cheongsando gudeuljang rice products that are artificially modified by introducing the natural terrain slope in the labor force for a long time.

Application to TGIRT in cheongsando I

Appropriate technical factors

- TGIRT is stacked stones readily available from local to create a non-maximized land use. For irrigation farming has been applied to the continuous irrigation drainage system that reuses the water used in the above discussed in the bottom paddy fields.
- In particular, several farm implements, including plows in order to adapt to discuss gudeuljang structure with shallow soil than normal rice are made to suit the environment such as thickness depending on the application, the weight, the shape.

Conjunction TGIRT and Story-doing

- Gudeuljangnon design competition which compose paddy field with minimal deformation.
- Irrgation and drainage simulation game which compose agricultural production with minimal water use.
- Gudeuljangnonjengi competition depending on the depth of the plow tillage are suggested alternative of simple supporting programs of agricultural production such as gudeuljangnon owner system, eco-friendly farm materials support, local food project.
- Suggested experience program could offer various mathematical, physical and functional training chances in experience process.

Conclusion

- In this study, we adapt story-doing suggested as a new marketing techniques for sustainable agricultural heritage. Working principle and structure of story-doing are formulated for developing application model.
- Gudeuljangnon design competition which compose paddy field with minimal deformation.
- Irrgation and drainage simulation game which compose agricultural production with minimal water use.
- Gudeuljangnonjengi competition depending on the depth of the plow tillage are suggested alternative of simple supporting programs of agricultural production such as gudeuljangnon owner system, eco-friendly farm materials support, local food project.
- If we can build a system that can create story-doer in application process of story-doing, sustainable ways of maintaining and developing agricultural heritage more effectively are expected.

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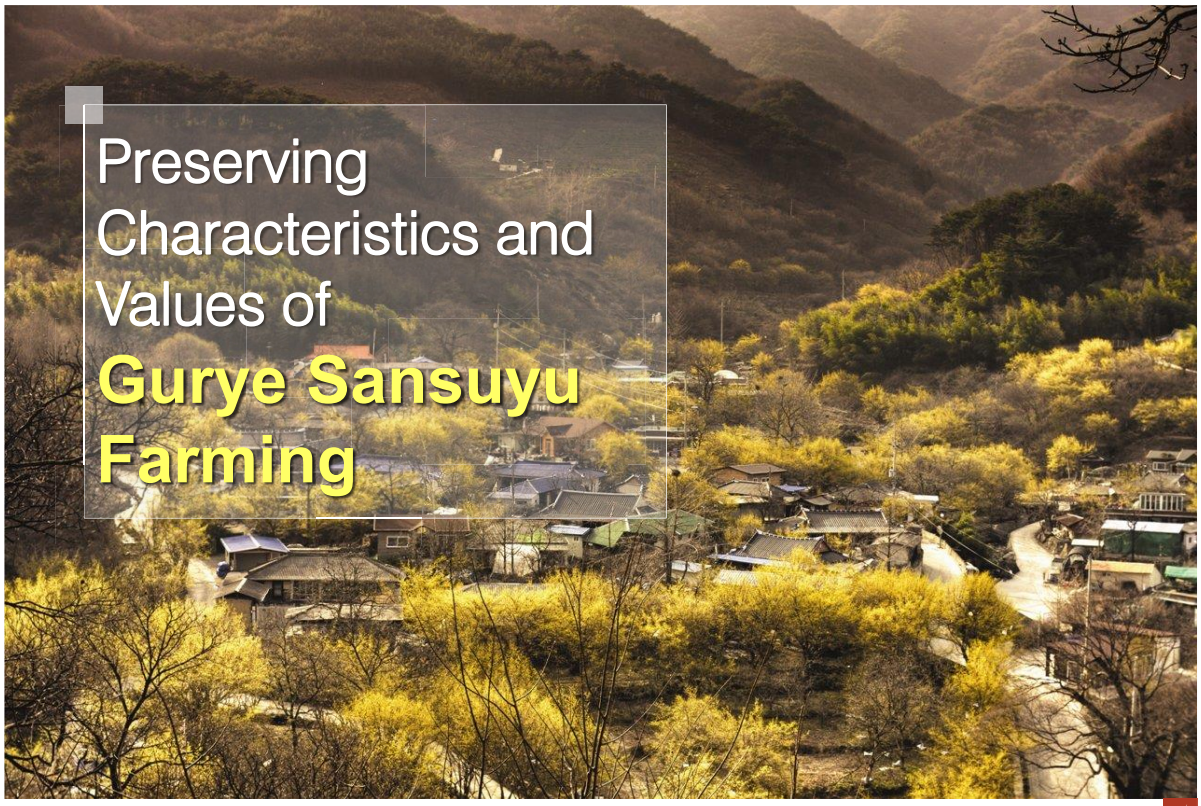
Session III-1

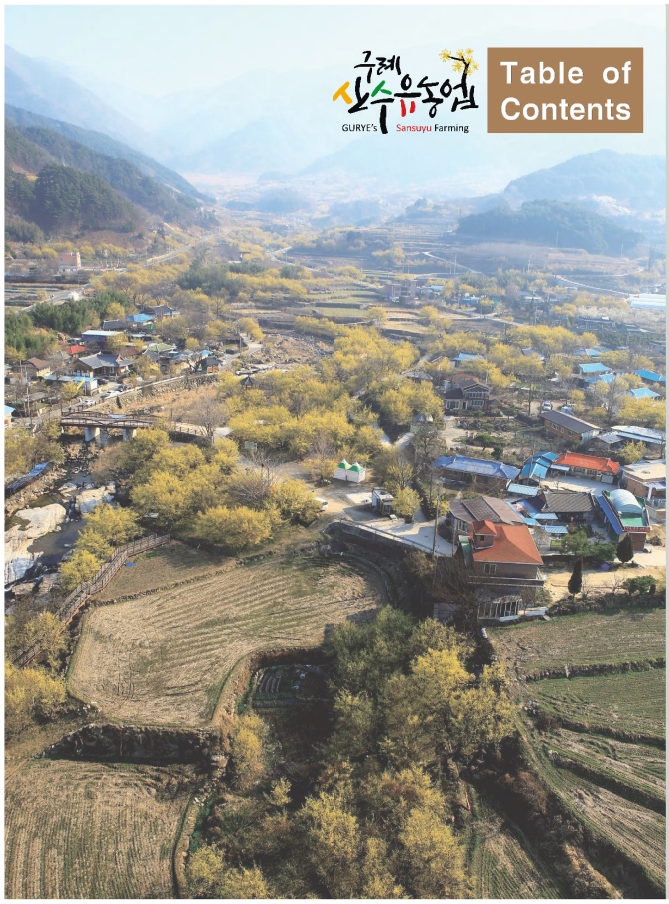
『Preserving Characteristics and Values of Gurye Sansuyu Farming』

Mr. Yu, Yong Un(Director, Gurye-gun County)



Preserving Characteristics and Values of **Gurye Sansuyu Farming**

Yu, Yong Un
Dept. Eco-friendly agriculture administration / Manager
(yooyw2@korea.kr)



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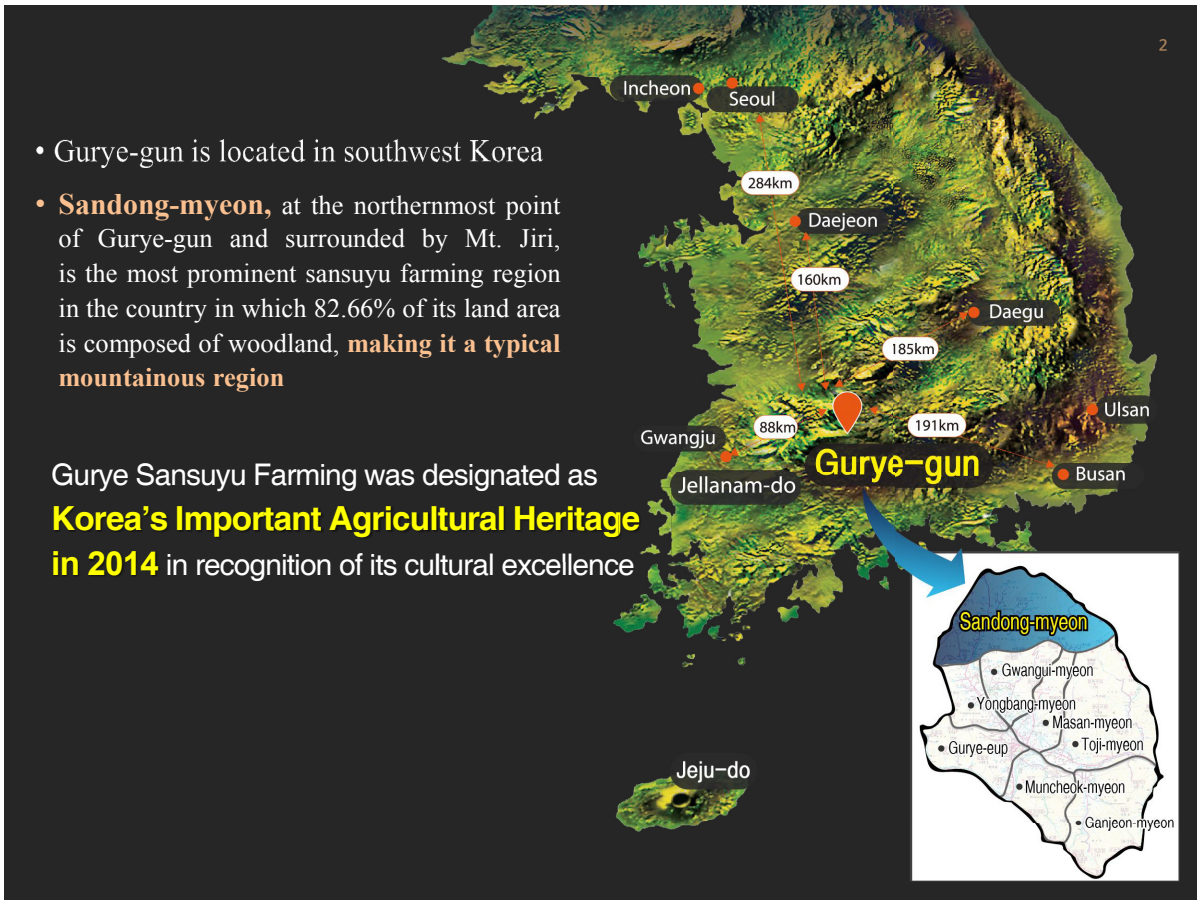
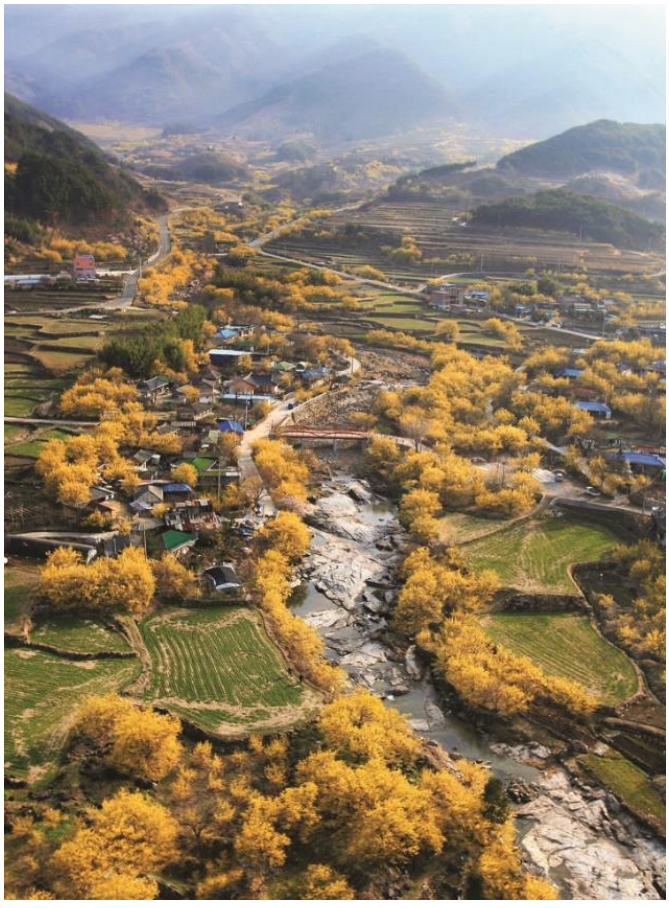
01 General Status of Sansuyu Farming

02 Characteristics of Sansuyu Farming

03 Preserving Values of Sansuyu Farming





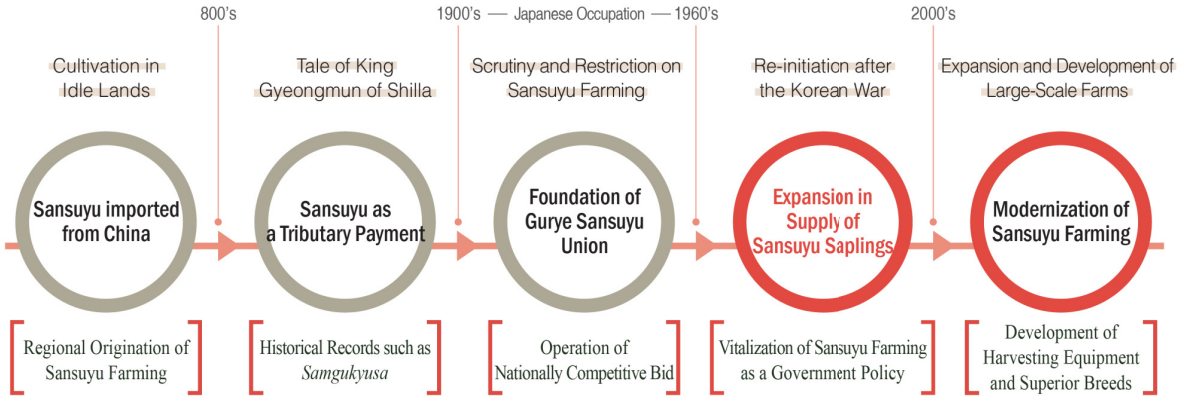
01 General Status of Sansuyu Farming

A Thousand-Year History of Sansuyu Farming Entrenched in Sandong

01. Historical Significance of Gurye Sansuyu Farming



- About a thousand years ago, a maiden from Shandong Province, China came to Mt. Jiri to get married, and brought a sansuyu tree not to forget about her hometown
- **A 1000-year-old sansuyu** tree is found in Gyecheok Village, Sandong-myeon, designated and managed as **the First Sansuyu Tree in Gurye-gun**

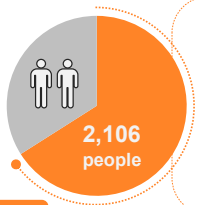


02. Cultivation Status of Gurye Sansuyu Farming

269ha

Land Area under Sansuyu Cultivation

68.98% of the total national production; 269ha of Sandong-myeon's land area used for sansuyu production



66%

Sansuyu-Cultivating Households

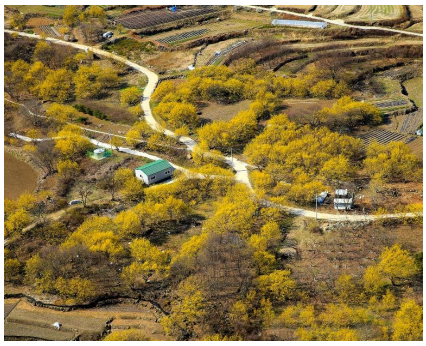
2,106 (713 households) out of the total Sandong-myeon population of 3,190 grow sansuyu

Annual Sansuyu Production by Region

(unit : kg, 1,000won)

Region	Output	Percentage	Output	Percentage
Nationwide	335,740	100	6,269,210	100
Gurye-gun	231,590	68.98	4,310,350	68.75
Uiseong-gun	27,590	8.22	513,500	8.19
Namwon-si	20,630	6.14	383,960	6.12

03. Distribution of Gurye Sansuyu Farming



- To maintain livelihood in a harsh environment with a lack of farmlands, Sansuyu habitats were **artificially created between the rocks, at the entrance of the village, and along the mountain ridges**
- Sansuyu habitats expanded across the entire Sandong-myeon **by making use of idle lands**



Around the Houses and Village Entrances

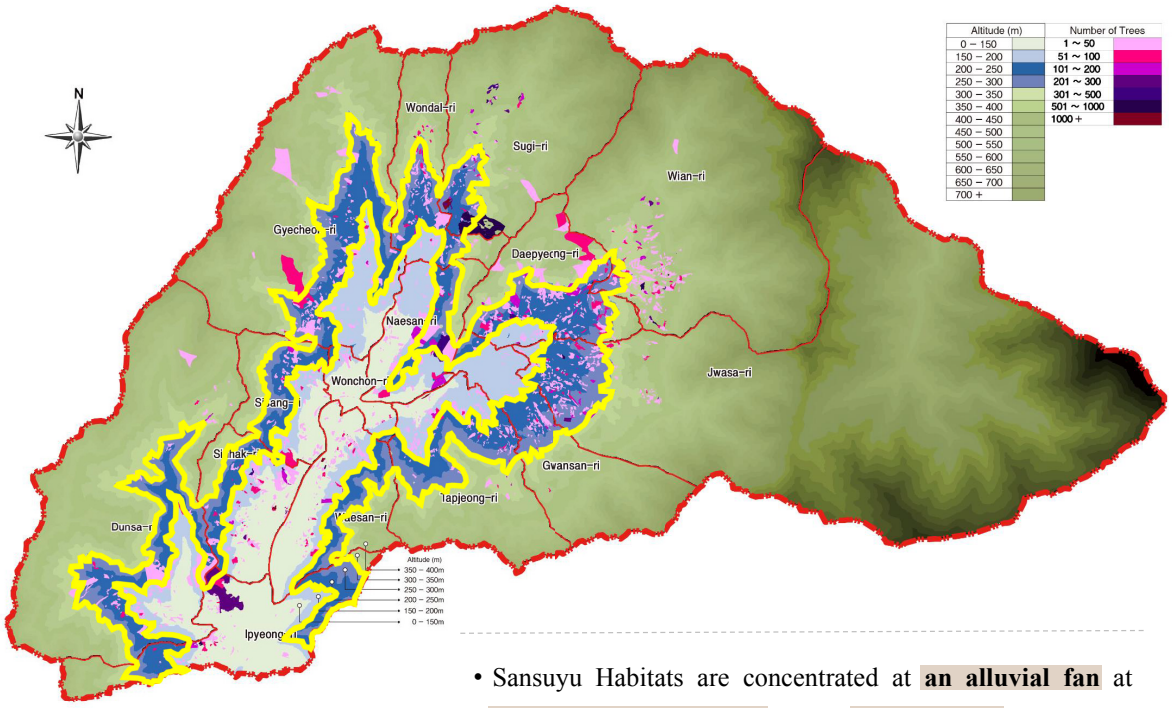


Idle Lands along a Stream



Mountains and Ridges

Altitudinal Distribution of Sansuyu Habitats



- Sansuyu Habitats are concentrated at **an alluvial fan** at **an altitude of 200~300m** around **Seosi Stream**



02 Characteristics of Sansuyu Farming

Sansuyu Farming within Villagers' Lives

9

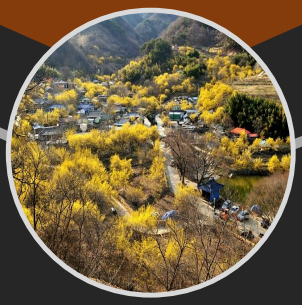
Gurye Sansuyu Farming is …

- Any agricultural activity held in less-favored areas is **the product of farmers' adaptation to nature**
- Sansuyu farming, passed on from generation to generation for a thousand years, is **a valuable product of traditional agricultural knowledge that Sandong residents** have shaped with their unique sense of life and culture in **understanding** and **adapting** to the natural environment, and it is also **an agricultural legacy to be handed down to our descendants**



Product of Adaptation to Natural Surroundings
(Tangible · Intangible Agricultural Knowledge System)

Scenic Value
(Natural and Cultural Scenery)





Function as an Ecosystem
(Contribution to Biodiversity)

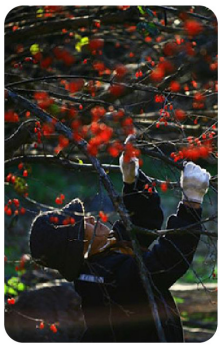
01. Traditional Methods used in Gurye Sansuyu Farming

- **Villagers begin sansuyu farming without a break** as soon as barley farming from spring to autumn is completed

Harvest of Sansuyu

[October 20th ~ late November]

Climbing the trees and **handpicking**



1 Picking Sansuyu

Removal of Impurities and Cleansing

Using winnows and *punggo* Soaking in water to remove impurities



2 Boiling down (3~4 days)

Natural and Ondol Dehydration

No flesh to be left on the removed seeds Keeping moisture level at 30~40%



3 Removal of Seeds

Removal of Seeds Using Mouths and Hands

Seeds should be clean without residual flesh Communal sharing of labor



4 Dehydration (2 days or more)

Complete Dehydration in the Sun

Keeping moisture level at 15~19%



01. Traditional Methods used in Gurye Sansuyu Farming

Picking Sansuyu Fruits



- Traditionally, one would spread a straw mat below, **climb the tree and handpick the fruit**
- The Fruits would be **dehydrated for 3~4 days in the sun or in a heated *Ondol*** (Korean floor heating system)





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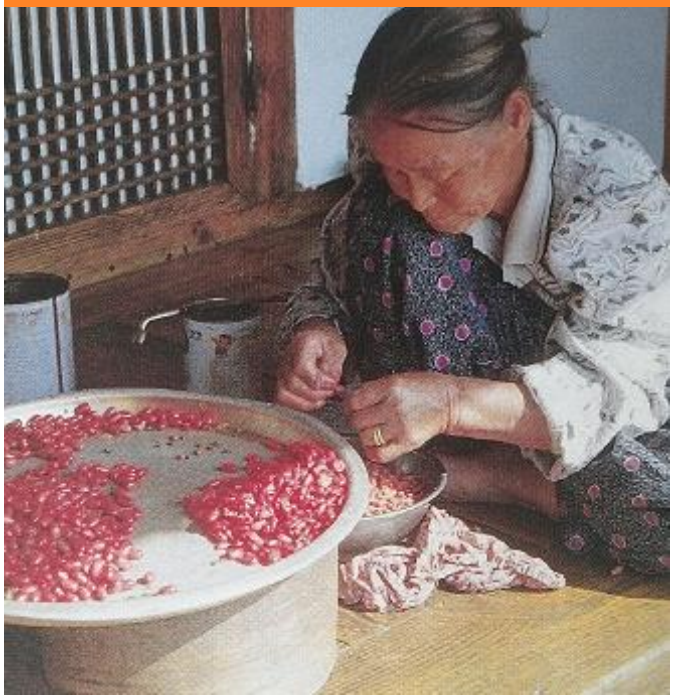
01. Traditional Methods used in Gurye Sansuyu Farming

Removal of Seeds from Sansuyu Fruits



- Once boiled down, seeds were separated from flesh **using hands and teeth**
- Removal of seeds was usually done in winter **mainly by Children and Women**





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01. Traditional Methods used in Gurye Sansuyu Farming

Smoking to Prevent Frost Damage



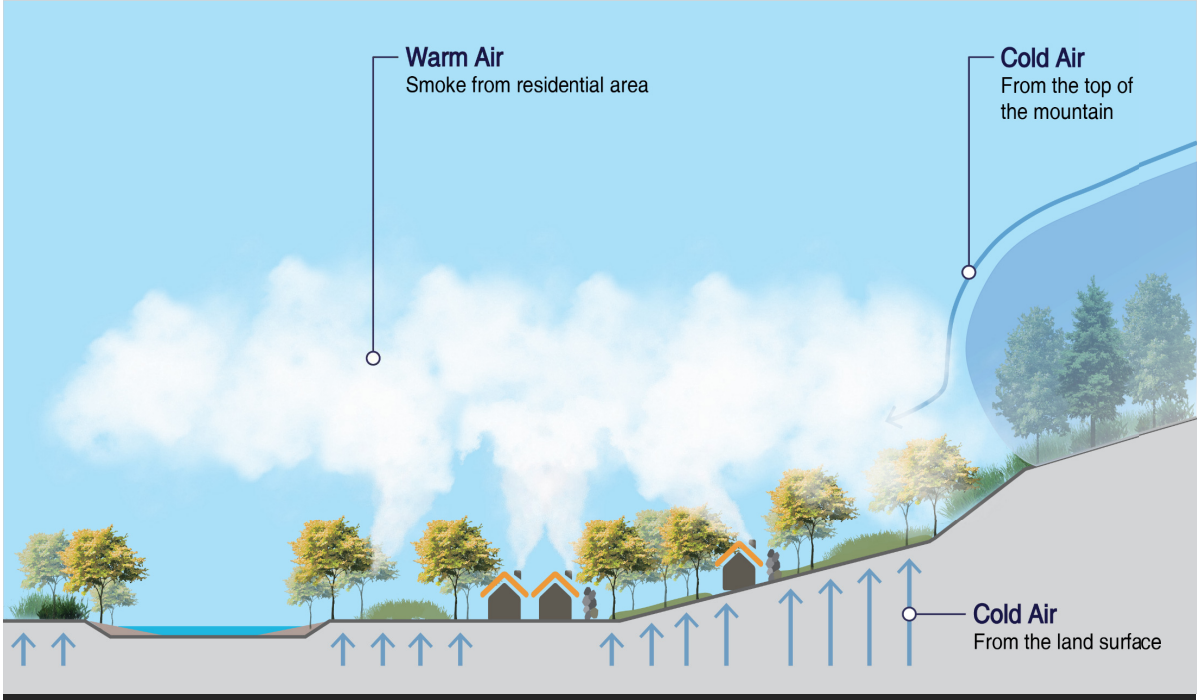
- **Smoke** released from the village would cover the trees and **prevent frost damage caused by cold surface current**
- Our ancestors **planted the trees closer to the village** so that the smoke would reach them





Using Smoke: How It Works and Its Effects

14

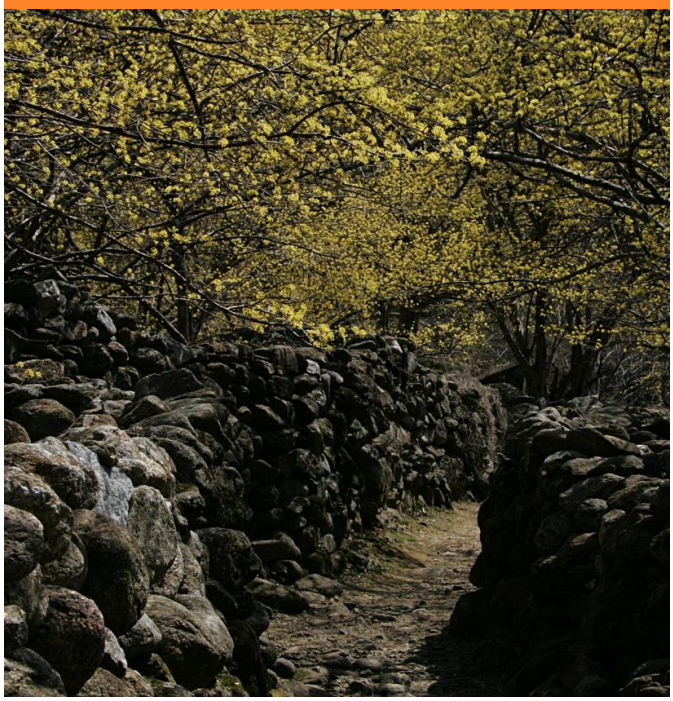


- Residential smoke covers the habitats and **create a protective coat for sansuyu trees against cold currents from the ground surface and mountains**

15

01. Traditional Methods used in Gurye Sansuyu Farming

Stone Walls in Sansuyu habitats



- Stone walls in sansuyu habitats were built up during the cultivation of the farmlands to **mark the boundary between the paddy fields and dry farmlands**
- The stone walls **control loss of soil moisture** and **act as a support to withstand typhoons**



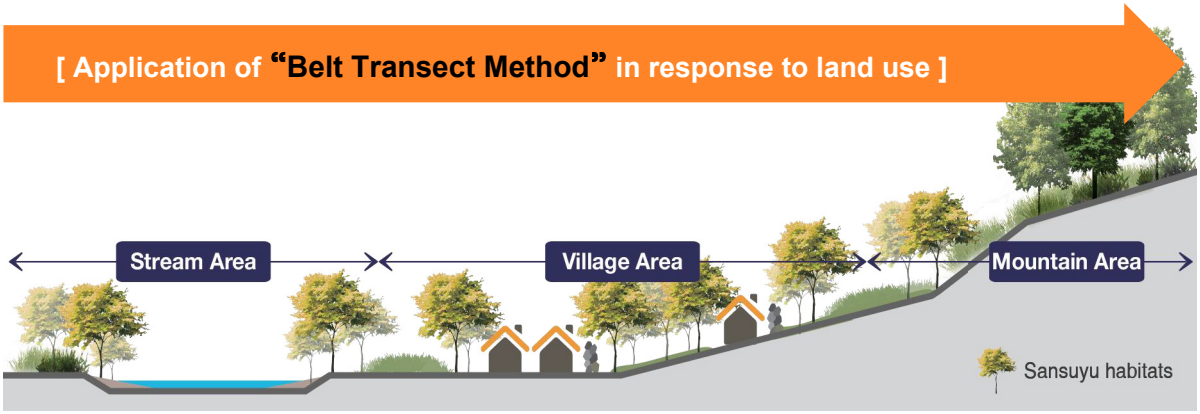


02. Ecological Environment and Scenery

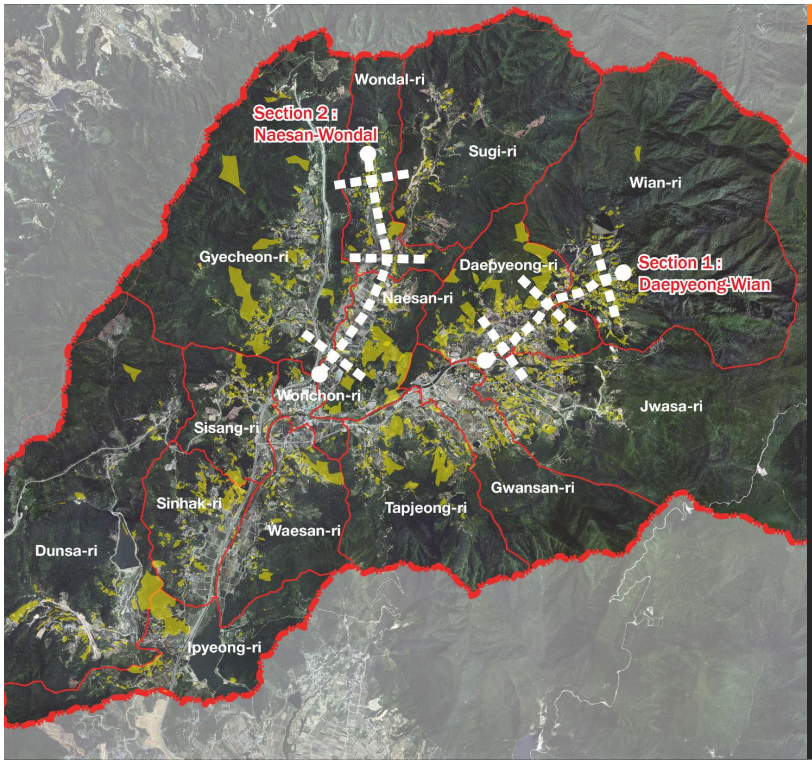


- Survey was conducted on the ecosystem along the Seosi stream, **classified into sansuyu colonies, riverbed, farmlands, villages, forests, according to the land use**

[Application of "Belt Transect Method" in response to land use]

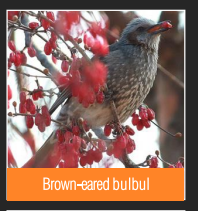


Ecological Status of Sansuyu Habitats



- The prominence of streams and mountains has resulted in **the diverse fauna and flora observed**
- The colonies act as **an ecological axis** that connects the village and the mountains


Korean-clawed salamander


Brown-eared bulbul


Spiderwort


Skunk vine

Sceneries of Gurye Sansuyu Farming



03. Utilizing Sceneries of Sansuyu Farming as Tourism Resources



- **Sansuyu Flower Festival** (in March) and **Sansuyu Fruit Festival** (in November) are held, mainly in villages that display harmony between the scenery and culture of sansuyu farming
- Offering opportunities for first-hand experience of the culture of sansuyu farming, the agricultural heritage is utilized as **an agent to vitalize cultural exchange between the urban and the rural areas**

Tourist Arrivals by Year

(Unit : 1,000people)

Classification	1995	2000	2005	2010	2011	2012	2013
Gurye-gun	2,330	5,238	6,157	6,262	5,932	6,547	6,890
Sandong-myeon	497	1,251	3,357	3,088	3,304	3,763	4,200
Change in Number	-	▲754	▲ 2,106	▼ 269	▲ 216	▲ 459	▲ 437



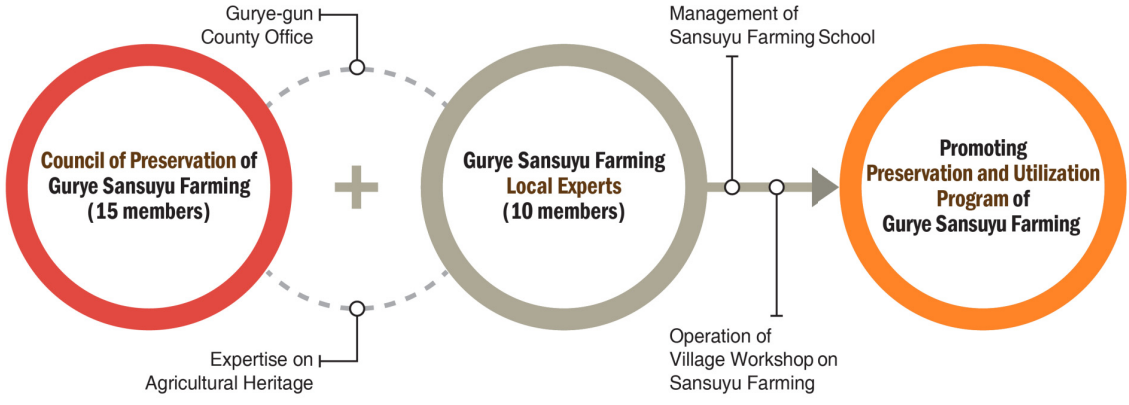
03 Preserving Values of Sansuyu Farming

Sharing the Values of Agricultural Heritage in Sandong-myeon

01. Preservation and Utilization of Sansuyu Farming by Regional Effort

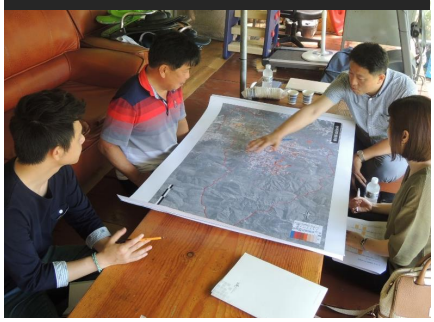


- **Forming an expert group of residents** with long experience and professional knowledge in sansuyu farming
- **Establishment of Gurye Sansuyu Preservation Council** to launch preservation projects on agricultural heritage with Gurye Sansuyu Farming Residential experts

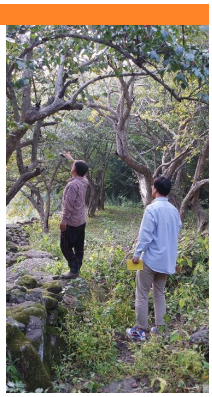


01. Preservation and Utilization of Sansuyu Farming by Regional Effort

Sansuyu Farming School







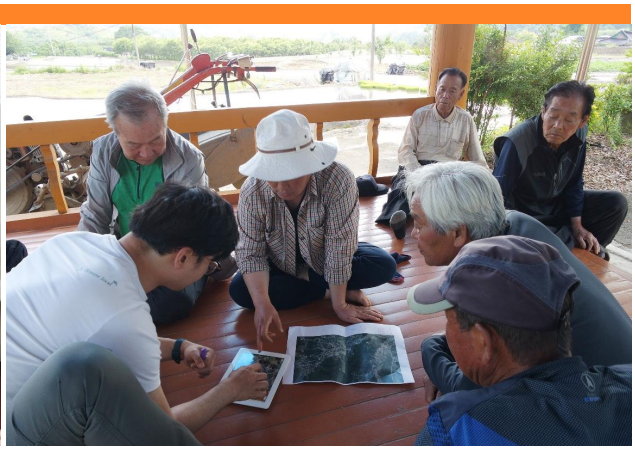




01. Preservation and Utilization of Sansuyu Farming by Regional Effort

Survey on Resources in Agricultural Heritage Region











01. Preservation and Utilization of Sansuyu Farming by Regional Effort

Demonstrative Operation of Exchange Program













02. Action Plan for Preservation and Utilization

「Preservation · Management」 Action Plan for Enhancement and Transmission of Agricultural Heritage Values

1 Institutional Framework for Protection and Preservation

Preservation Management and Support System

1. Support for Formation of Cultural Scenery
2. Codification of Agricultural Information and its Management for Heritage Preservation
3. Demonstrative Areas for Sansuyu Farming
4. Modification of "Ordinance for Protection and Preservation of Gurye Sansuyu"

2 Applicative Framework for Maintenance and Management

Action Plan for Preservation and Management

Development and Maintenance of Sansuyu Habitats

1. Tourist Route and Environmental Design of Sansuyu Habitats
2. Reinforcing and Activating Contents for Sansuyu Cultural Center

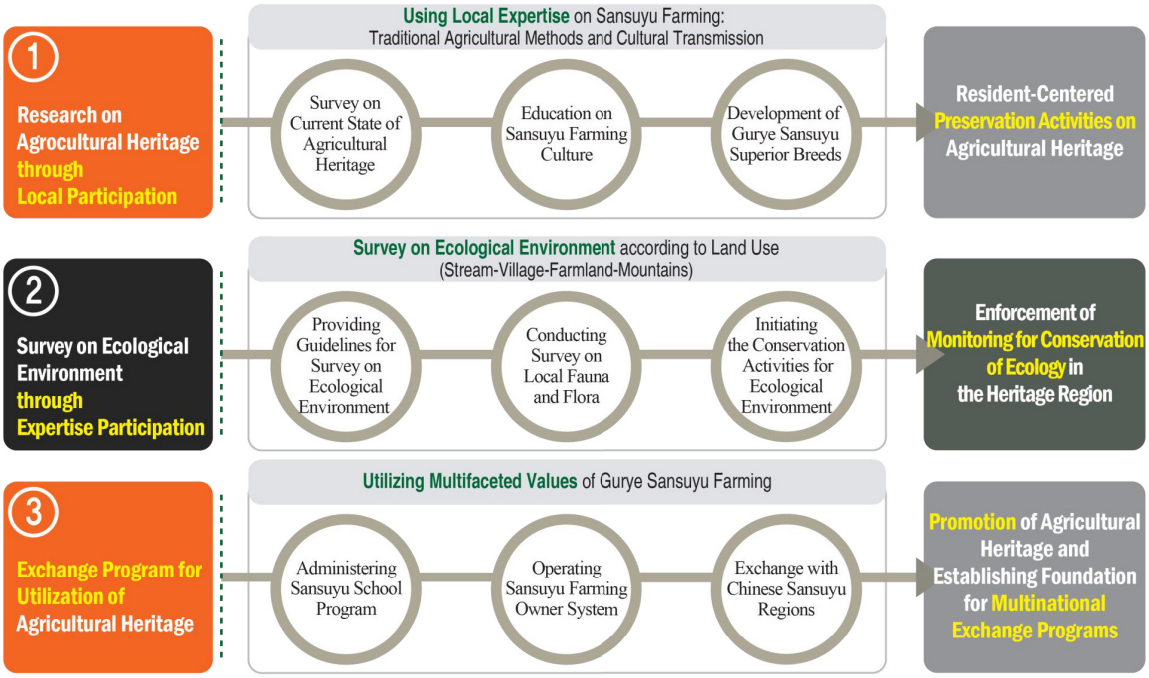
Establishment of Management and Operation

8. Council for Preservation of Gurye Sansuyu Farming
9. Reinforcement of Regional Capability for Gurye Sansuyu Farming

Program for Utilizing Multifaceted Values of Sansuyu Farming

3. Establishing Online Database System
4. Exchange and Promotion Program;
   - One Business, One Heritage Campaign
   - Owner Program for Gurye Sansuyu Framing
5. Re-enactment of Traditional Farming Methods
6. Development and Propagation of Superior Performance Breeds
7. Exchange Program with Sansuyu Farming Regions in China

03. Actions on Preservation and Utilization Plan for Agricultural Heritage



03. Actions on Preservation and Utilization Plan for Agricultural Heritage



Tourist Route and Environmental Design

[Site Investigation on Tourist Routes]



Establishment of Online DB System

[Survey on Current Cultivation Status]



Operation of Owner Program

[Promotional Events]



Development of Superior Performance Breeds

[Tech Research on Superior Species]




A thousand-year history of sansuyu farming
will be upheld while securing the potential for utilizing
the agricultural heritage with concerted efforts of
residents, administrative officials and experts
Now aiming for gaining status as a GIAHS
following its designation as
a Korea's Important Agricultural Heritage,
efforts to raise awareness of the values attached to
Gurye Sansuyu Framing will be made


Thank you for
your Attention

Session III-2

『Traditional Tea Agrosystem and Tea Culture in Hadong Indigenous Tea Habitats』

Mr. Yun, Seung Cheol(Director, Hadong-gun County)



The 3rd ERAHS International Conference

Traditional Tea Agrosystem and Tea Culture in Hadong Indigenous Tea Habitats

Hadong-gun Agricultural Tech Center / Manager
YOON Seung Cheol
(E-mail : goang@korea.kr)

/ Table of Contents

1 General Status of Hadong Traditional Tea

2 Characteristics and Values of Hadong Traditional Tea

3 Preservation, Management and Utilization of Hadong Traditional Tea

4 Conclusion

The 3rd ERAHS International Conference
Traditional Tea Agrosystem and Tea Culture in Hadong Indigenous Tea Habitats





※ Source : A Thousand-Year Fame of Hadong Wild Tea / Travels in Korea, EBS

1. General Status of Hadong Traditional Tea

4

Hadong Traditional Tea Agrosystem is a traditional agricultural system upheld by the villagers of *Hwagae* to maintain their livelihood for the past 1,200 years in a harsh environment of *Mt. Jiri* Range

Its value was recognized in 2015 designation of

Korea's Important Agricultural Heritage



1. General Status of Hadong Traditional Tea

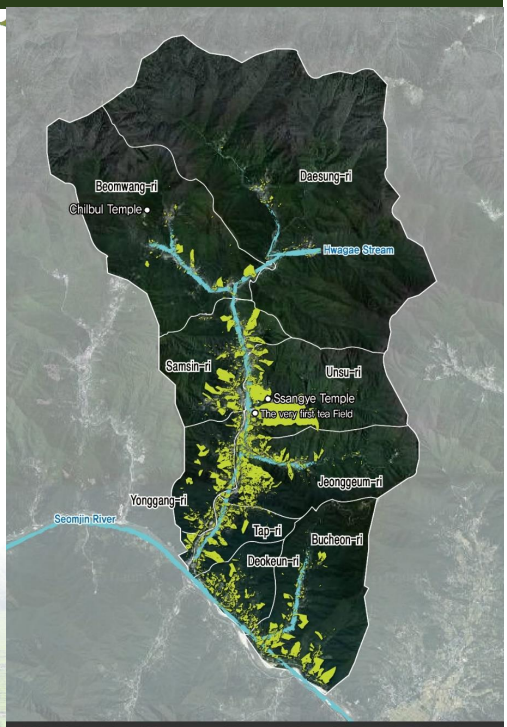
5

Location
- Hwagae-myeon, Hadong-gun, Gyeongsangnam-do

Area
- Total : 13,436ha
- **Under Tea Cultivation : 597.8ha**

Households
- Total : 951 Households
- **Tea-Producing : 801 Households**

Land Use
- 93% of Hwagae-myeon's total surface is mountainous (Mt. Jiri)
- Less Favored Area in which formation of residential and farm lands is difficult



Distribution Status of Traditional Tea in Hadong

2. Characteristics and Values of Hadong Traditional Tea

6



Value of Hadong Traditional Tea as an Agricultural Heritage


History


Technology


Culture


Scenery/Ecology

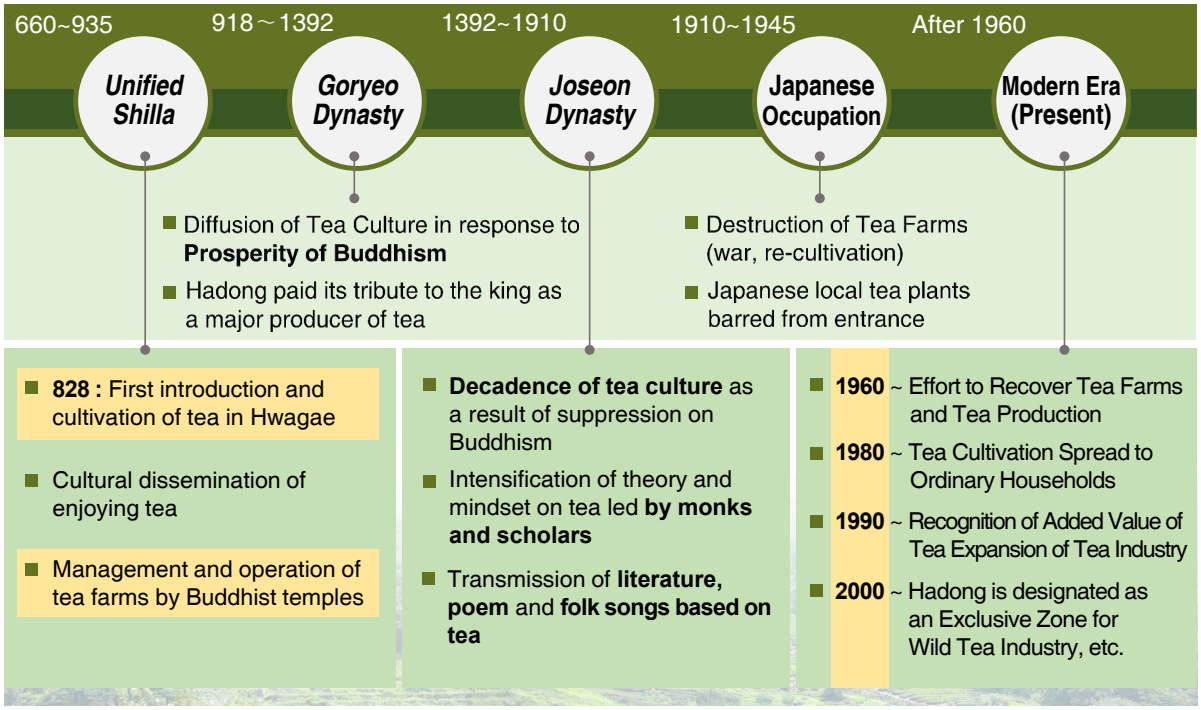
① History

A 1000-Year History Embedded in Hadong Traditional Tea



The History of Hadong Traditional Tea

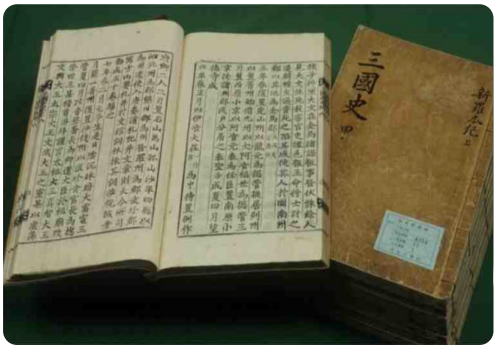
8



Hwagae-myeon as the 'First Tea Farm of Korea'

9

- According to an account in「*Samguksagi*」***King Heungdeok* of *Shilla* in his third year of reign** ordered the tea seeds that were brought by ***KIM Dae Ryeom*, who was sent as an envoy to Tang, to be planted in Hwagae region of Mt. Jiri**
- According to a survey conducted by Korea Record Institute and the Korean Tea Society on current status of wild tea plants nationwide In July of 2008, **Hwagae-myeon was officially recognized as the First Tea Farm of the Korean Peninsula**



Samguksagi (Historical Record of the Three Kingdoms)



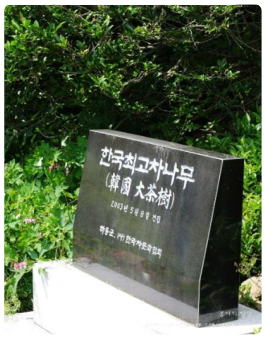
The First Tea Farm in Hwagae-myeon

The Oldest Tea Plant in Korea

10

- The tea plant, which has been growing naturally in *Dosim Tea Garden* in *Jeonggeum-ri*, *Hwagae-myeon*, is called the **'Oldest Tea Plant' found in Korea**, and it has been designated as a Gyeongsangnam-do Provincial Monument 264.
- The Oldest Tea Plant is **the living evidence of the tea history not only in Hadong Region but also in Korea,** as a tea plant's age symbolizes the long history of tea and its culture.





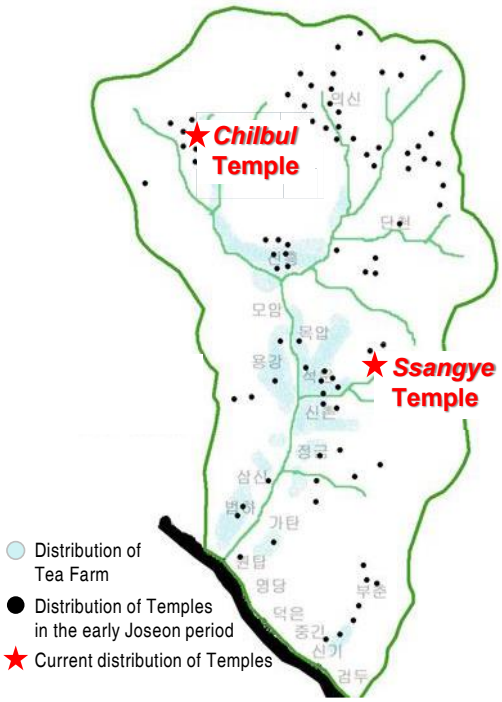
The Oldest Tea Plant in *Dosim Tea Garden*



Bidding Event on the Oldest Tea Plant's product, "Thousand-year Tea"

The Tea Culture and Buddhism in Hwagae Region

11



- Hwagae-myeon was historically a village with a great number of Buddhist temples, which experienced such **a great prosperity of Buddhist culture that it was called the 'Buddhism of Jiri Mountain'**
- Before the modern era, **the tea farms were managed and operated by the temples, and propagated by the monks**



***Ssangye* Temple and the First Tea Farm**

The Tea Culture and Buddhism in Hwagae Region

12

- Monks and Residents of Hwagae cultivate the tea farm together, and **share and transmit the knowledge system of tea production exclusively held by the Hwagae region**
- The regional structure, in which **the Buddhist culture** was able to prosper, is **a significant factor in continuation of Hwagae tea farm and the tradition of producing hand-made tea**



Buddhist Ceremony in *Ajabang of Chilmul* Temple





Master *HONG So Sul* and the monks

② Technology

Human Effort and Proprieties

Hadong Traditional Hand-Made Tea



As Given by Nature : 'Natural Agricultural Methods'

- **Hwagae is suitable for cultivating tea plants with geographic properties** that result in a perfect natural environment for growth of tea plant
- **Natural agricultural techniques,** such as handpicking and grass fertilization, which **minimize artificial management of tea farms** and intervention.



Handpicking



Grass Fertilization

"Hadong Tea nourished by Jiri Mountains and Hwagae Stream"

Traditional Tea Method in Hadong : 'Handmade Roasted Tea'

- **The tea leaves**, hand picked one-by-one, are **roasted in a *Sot* (Korean cauldron)** to boast its rich flavor and scent
- Hwagae-myeon's tea production method of hand-roast is **the same as the one described in *Dongdasong*** (Praise of Eastern Tea) written by the Venerable *Cho-ui*



① Picking and Choosing Leaves ② Roasting ③ Rubbing ④ Dehydrating ⑤ Final Roasting

③ Culture

From generation to generation

Daily Customs of Hadong Tea



Hadong's Traditional Folk Tea : 'Jaeksul Cha'

17

- Historically, superior-quality tea from Hadong was paid as a tribute. Commoners produced **'*Jaeksul Cha*,'** a fermented tea using left over tea leaves or those harvested in July and August with rough texture
- Both as **a beverage and household medicine** from old times, **it has been registered as the Ark of Taste** by Slow Food Foundation for Biodiversity in 2016, in appreciation of its historic value and excellence in flavor



A local resident producing *Jaeksul Cha*



Hadong Jaeksul Cha – Certificate of the Ark of Taste

Local Cooperative Community : 'Sharing Group of Labor'

18

- Traditional tea agrosystem of Hadong employs **a handpicking method for tea harvest**
- It seeks to maintain the traditional method of tea harvest **by forming a local cooperative community**



Tea Harvest in the 1980's



Tea Harvest in 2016

People Keep Together ‘the Culture of Tea Ritual’

- Every year, the First Tea Farm becomes a site for two Tea Rituals: ***Pungdaje*** in April, wishing for an abundant harvest; ***Hundarye*** in May, offering to Buddha the first tea harvested before *Gokoo* (one of the 24 division points of the year; usually on April 20th or 21st)
- **In Hwagae Elementary School, tea classes on values of tea and etiquettes** have been held for more than 20 years in **an effort to sustain Hadong’s tea culture**



Hundarye



Tea Class held in Hwagae Elementary School

④ Scenery / Ecology

Embracing Jiri Mountains and Seomjin River

Scenic Values of Indigenous Tea Habitats

Indigenous Tea Habitats and Biodiversity

21

- The tea habitats in Hwagae-myeon can be utilized as **a habitat for fauna and flora within the Jiri Mountain range,** with fresh air running down from Jiri Mountain and moisture from Hwagae Stream(Seomjin River)
- **Natural agricultural techniques** used to maintain and manage the tea habitats avoid damage to the ecosystem and **contribute to biodiversity**



Hadong's Natural and Cultural Scenery

22

- Tea habitats of Hwagae-myeon are mainly distributed along the Seomjin river bank of Jiri Mountain Range, located in between rocks to bring harmony with the mountains and **displaying the unrefined beauty of the wild nature**
- Moist fog along the Seomjin River, scent of soil across the tea farms, sound of women picking tea leaves and traditional harvest creates **a cultural scenery of Hadong's traditional tea farming**



3. Preservation Management and Utilization of Hadong Traditional Tea Agrosystem

23

Strategies for Preservation and Management of Hadong Traditional Tea Agrosystem		Details
1 Hadong Traditional Tea Agrosystem [Maintenance · Preservation]	1-1 Environmental Preservation Management of the Tea Farmlands	Subsidization of Hadong traditional tea sceneries Establishment of preservation management plan for scenic values and biodiversity of Hadong traditional tea farms
	1-2 Support for Sustenance of Traditional Agricultural Methods	Operation of communal sharing of labor Designation of Hwagae-myeon as a Region of Traditional Agricultural Technology and support thereafter
	1-3 Yielding High Added-Value from Hadong Traditional Tea	Authentication System for tea produced by Hadong traditional methods Discovery and operation of action plans for multi-faceted utilization of Hadong tea production
2 Hadong Traditional Tea Agriculture Knowledge System [Understanding · Transmission]	2-1 Transmission of Traditional Agricultural Techniques	Courses on transmission of traditional agricultural techniques Programs re-enacting traditional agricultural techniques
	2-2 Internal Vitalization of Traditional Hadong Tea Culture	Cultural Adaptation of Hadong Traditional Tea Etiquettes Extended Learning Program for Hadong Traditional Tea Etiquettes
	2-3 Reinforcement of Capabilities of Local Expertise	Fostering and Designation System for Tea Mastery Fostering System for Local Expertise
3 Hadong Traditional Tea Agriculture Values [Exchange · Vitalization]	3-1 Exchange and Promotion Programs for Cultural Heritage	Hadong Traditional Tea Production Owner System
	3-2 Formation of Internal and External Cooperative System for Tea Production	Creating Ties and Cooperative Structure within Tea Production regions around Mt. Jiri Initiation of cooperative organizations in external and internal production of traditional tea

3. Preservation Management and Utilization of Hadong Traditional Tea Agrosystem

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◑ Traditional Tea Knowledge System and Research on Related Cultural Aspects of Hadong



Interview with Residents on Hadong Tea Production in Dosim Tea Garden

3. Preservation Management and Utilization of Hadong Traditional Tea Agrosystem

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◑ Traditional Tea Knowledge System and Research on Related Cultural Aspects of Hadong



Interview with Residents on Hadong Tea Production in *Cheongsok-gol*

3. Preservation Management and Utilization of Hadong Traditional Tea Agrosystem

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◑ Traditional Tea Knowledge System and Research on Related Cultural Aspects of Hadong



Interveiw with a Monk (Chief Monk of *Ssanggye* Temple)

3. Preservation Management and Utilization of Hadong Traditional Tea Agrosystem

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◑ Initiation and Practice of Cooperative Research Group on Hadong Traditional Tea through Local Participation



3. Preservation Management and Utilization of Hadong Traditional Tea Agrosystem

28

◑ Initiation and Practice of Cooperative Research Group on Hadong Traditional Tea through Local Participation



3. Preservation Management and Utilization of Hadong Traditional Tea Agrosystem

29

◑ Reinforcement of Local Capability·Operation of Academy for Fostering Commentators



3. Preservation Management and Utilization of Hadong Traditional Tea Agrosystem

30

◑ Partaking in World O-Cha Festival in Shizuokashi, Japan:
Promotion of Hadong Traditional Tea Production as an Agricultural Heritage





4. Conclusion

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Traditional Tea Agrosystem of Hadong

Is the human effort and propriety through Picking, Roasting and Serving tea

It is the human Is the environment for tea production created by the hands of

the Hadong residents for the past 1,200 years - a product of wisdom

In response, Hadong-gun plans to launch a systematic preservation, management and utilization plan for continuous transmission of traditional tea agrosystem



Thank You for Listening

하동군 Hadong-gun

국가중요농업유산

The 3rd ERAHS International Conference

Traditional Tea Agrosystem and Tea Culture in Hadong Indigenous Tea Habitats



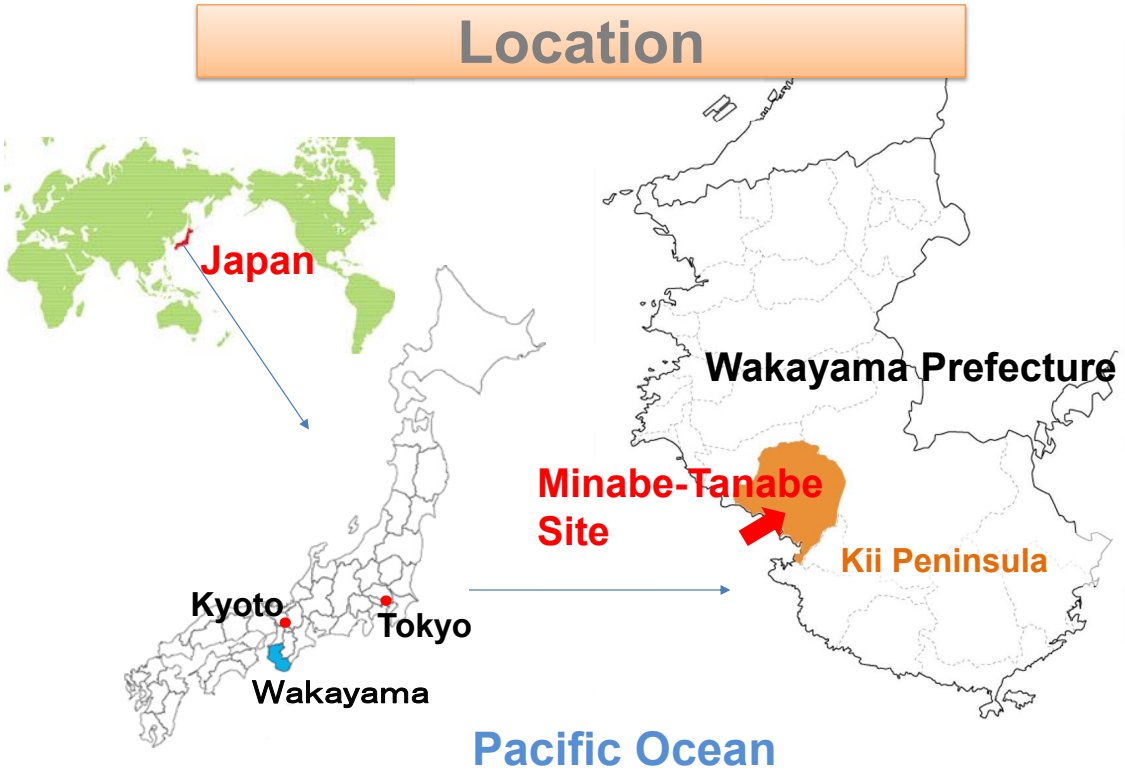
Session III-3

『Minabe-Tanabe Ume System』

- Mr. Ryota Nakahaya (Public officer, Minabe town)


3rd Conference of East Asia Research Association for Agricultural Heritage
Minabe-Tanabe Ume System
Ryota Nakahaya
Minabe town,Wakayama Prefecture

Location


Japan
Wakayama Prefecture
Minabe-Tanabe Site
Kii Peninsula
Kyoto
Tokyo
Wakayama
Pacific Ocean

2

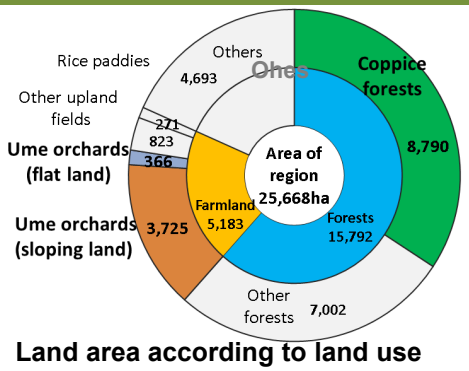
Minabe-Tanabe Site







The Site Data



Land area according to land use

3

Global Importance

Ume, a crop of worldwide significance



Ume
(*Prunus mume*, Japanese apricot)

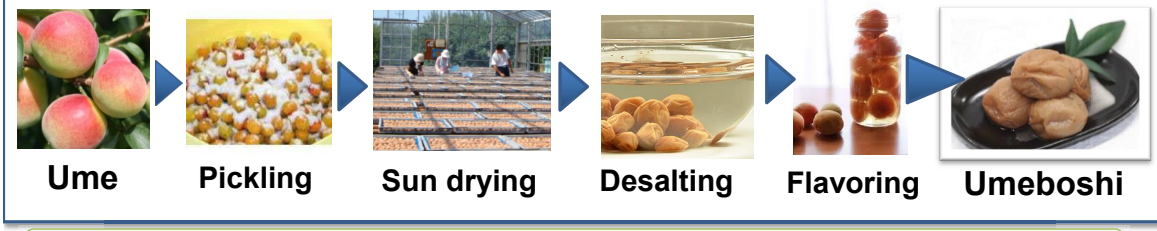
Processing



Umeboshi
(Pickled Ume)



Ume: Daily Japanese side dish

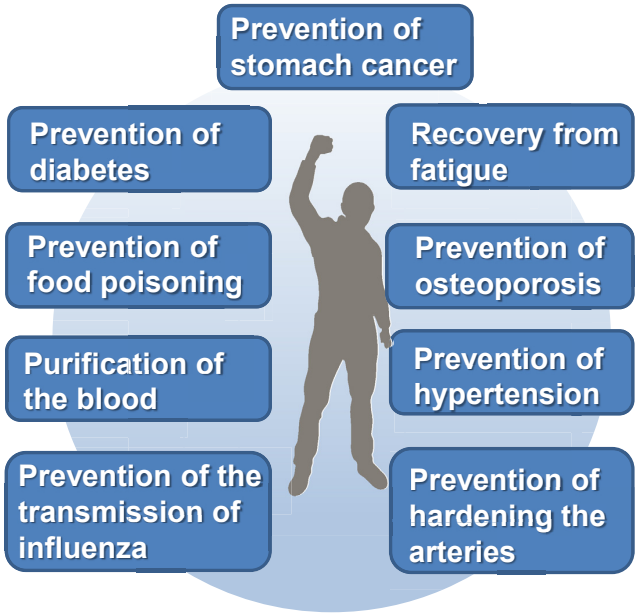


A unique Japanese processed food, Umeboshi

4

Health Food “Ume”

Functionality of Ume



Various of ume products



Processing


Ume juice


Umeshu liqueur


Ume jam

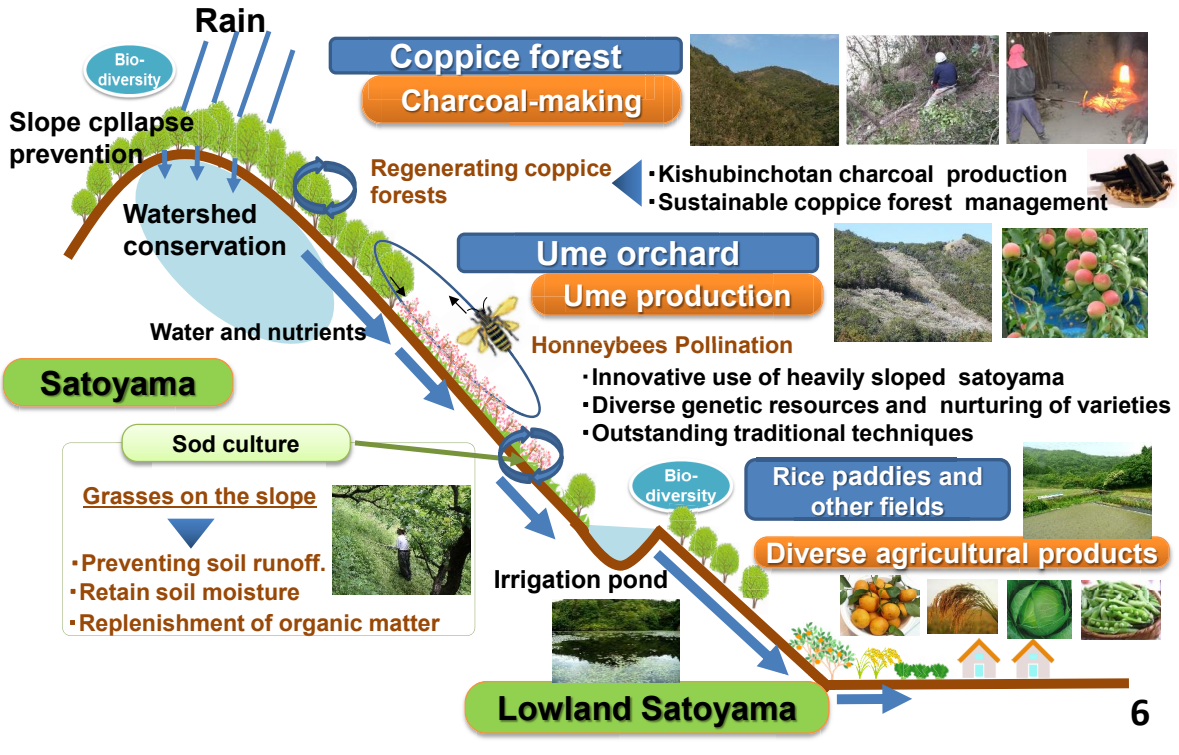

Ume dressing

.etc

5

Global Importance

"Circulation" in Minabe-Tanabe Ume System



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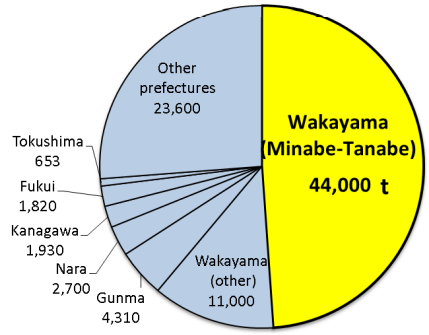
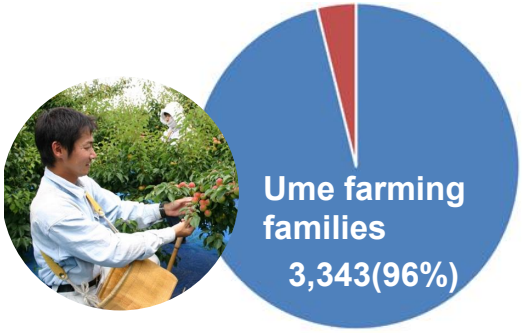
1. Food and Livelihood Security



Japan's ume production by prefecture (t,2012)



Number of farming families (2010)



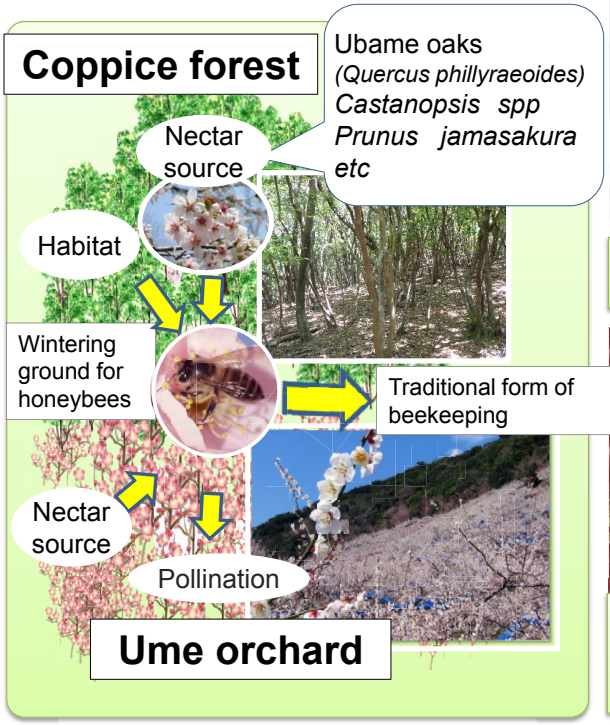


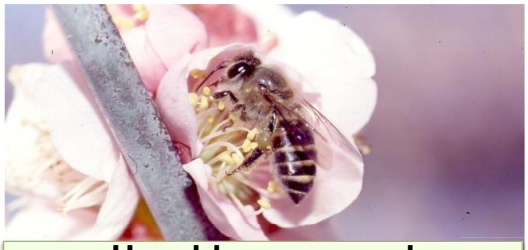
Farmers' market featuring a more variety of agricultural produce (Store by farmers)

7

2. Biodiversity and Ecosystem Function

Mutualism of ume trees and honeybees





Ume blossoms and Japanese honeybee

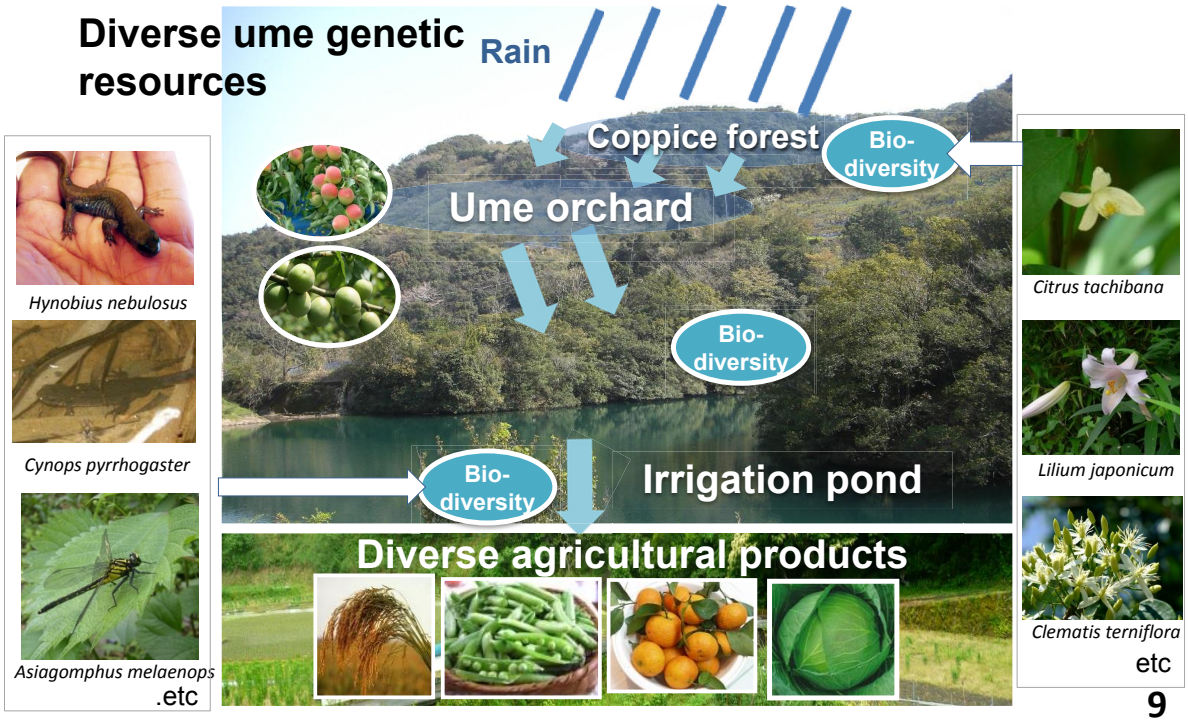


A gora, a traditional beehive unique to the site, which is made by hollowing out a log, capitalizing on the Japanese honeybee's habit of building nests in tree hollows.

8

2. Biodiversity and Ecosystem Function

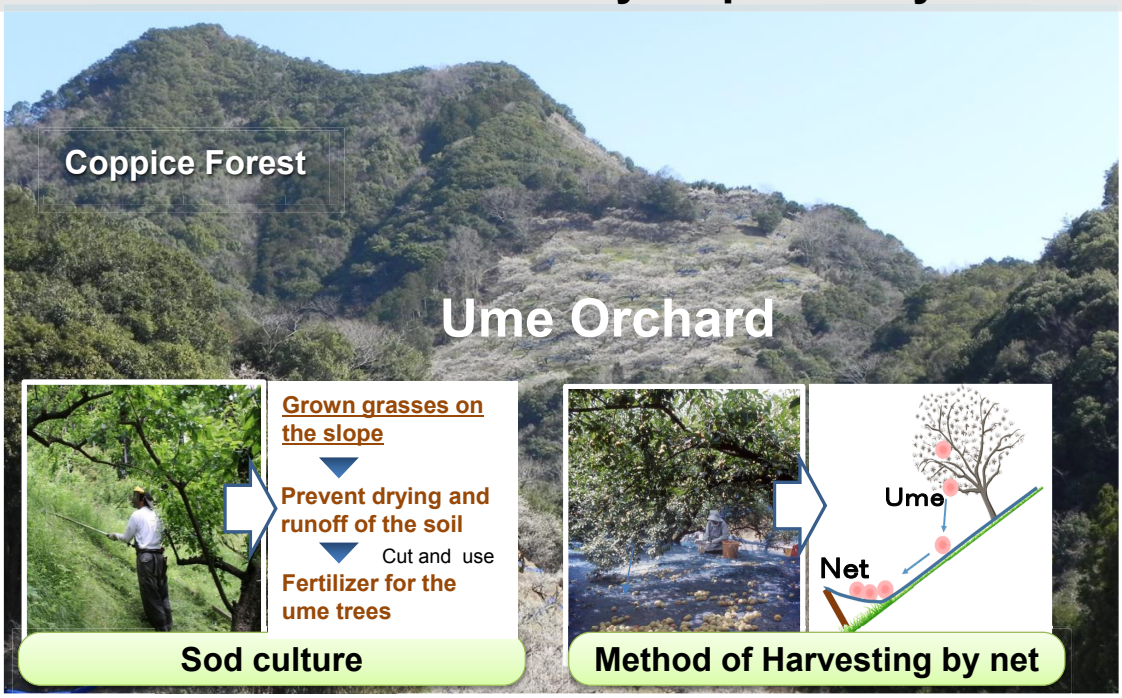
Biodiversity and Ecosystems Conserved by Multiple Land Uses



9

3. Knowledge Systems and Adapted technologies

Innovative use of heavily sloped satoyama



10

3. Knowledge Systems and Adapted Technologies

Coppice forest management



Coppice forest

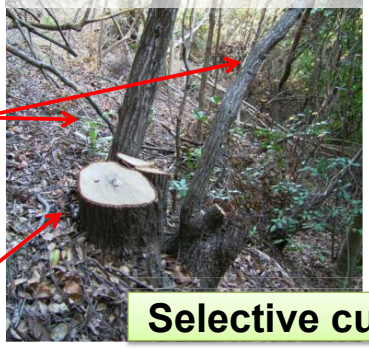


Removal of charcoal from the kiln



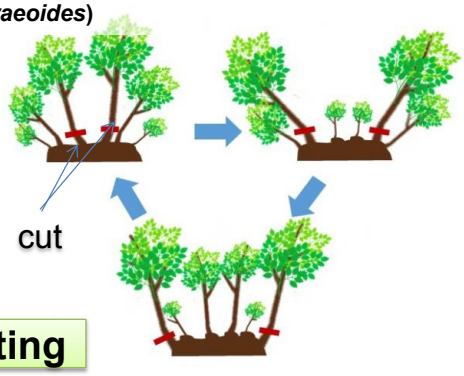
Kishubinchotan charcoal

Ubame oaks (*Quercus phillyraeoides*)



Thin trunks are left

Thick trunks are cut



Selective cutting

11

4. Cultures, Value Systems and Social Organizations



Dedicated to thank for harvest

Traditional lion dance



Ceremony to appreciation the pioneer of ume cultivation



Festival of offering ume to the shrine

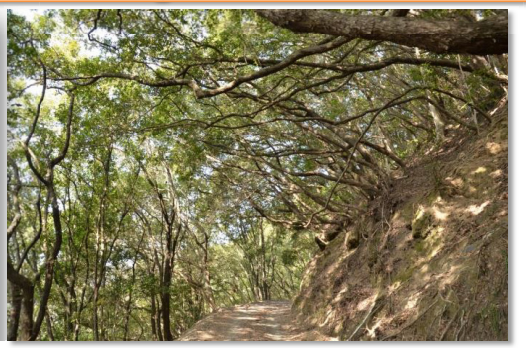


Ume rice

Handing-down of traditional cuisine using ume

12

5. Remarkable Landscapes, Land and Water Resources Management Features



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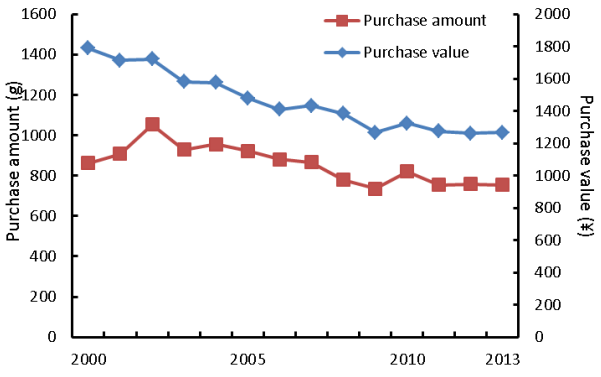
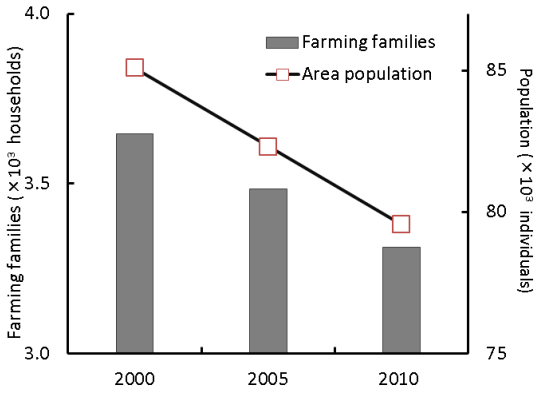
Threats and Challenges

1. Fewer farming families and advancing age
2. Declining ume consumption
3. Coppice forest management techniques being lost



Amount of Umeboshi purchased, and purchase value per Japanese household



Population and number of farming families in the Minabe-Tanabe area

14

Minabe-Tanabe Ume System
Outline of GIAHS Action Plan

Ⅰ. Promoting ume and charcoal production and expanding sales channels

1. Improving ume productivity and nurturing successors.
2. Adding value to ume
3. Sustainable charcoal production and nurturing human resources

Ⅱ. Preserving biodiversity and local landscapes

1. Preserving the biodiversity of ume orchards
2. Initiatives to eliminate abandoned farmland and preserve local landscapes

Ⅲ. Passing on traditional techniques and culture

1. Passing on traditional techniques
2. Nurturing cultural stewards

Ⅳ. Generating synergy domestically and internationally

1. Disseminating information on local industry through urban-rural exchanges
2. Contributing to society both domestically and overseas through local industries

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GIAHS Action Plan for 5 Key Criteria

1. Food and livelihood security



Promoting ume production and expandung sales channels .etc.

2. Biodiversity and ecosystem function



Conserve honeybees .etc

3. Knowledge systems and adapted technologies



Pass on ume production technique .etc

4. Cultures, value systems and social organizations



Pass on ume cuisine .etc

5. Remarkable landscapes, land and water resources management features



Cooperative farmland conservation .etc

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Nurturing Successors

Inheritance of traditional technology and culture



Inheritance of traditional culture



Field class in ume cultivation technique at highschool.

Farming experience of students and Urban-rural exchanges



Farming experience by students



Excahange of people between urban rural areas

17







Fostering local power bonds by ume system

Thank you







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Session III-4

『Mountainous Agriculture and Forestry System』

Mr. Tomonori Tasaki (Public officer, Takachiho town)

Takachihogo-Shiibayama

Mountainous Agriculture and Forestry System



Today's Presentation

The valuable points of Takachihogo-Shiibayama site

I. Location
II. Mountainous Agriculture and Forestry System
III. Strong Local Communities
IV. For the Future (Action Plan)

I. Location of Takachihogo-Shiibayama Site



The Site Data	
Total Area	1,411km^2
Forest area	92%
Farmland area	3%
Population	Approx. 27,000



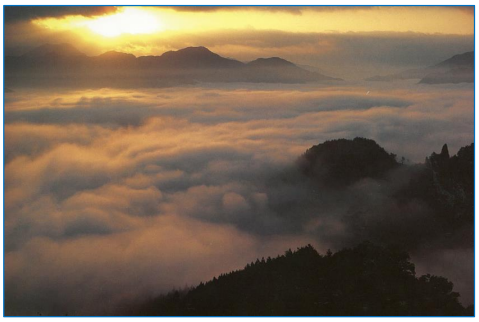
2

Steep Mountainous Area



3

A Cradle of Japanese Mythology






4

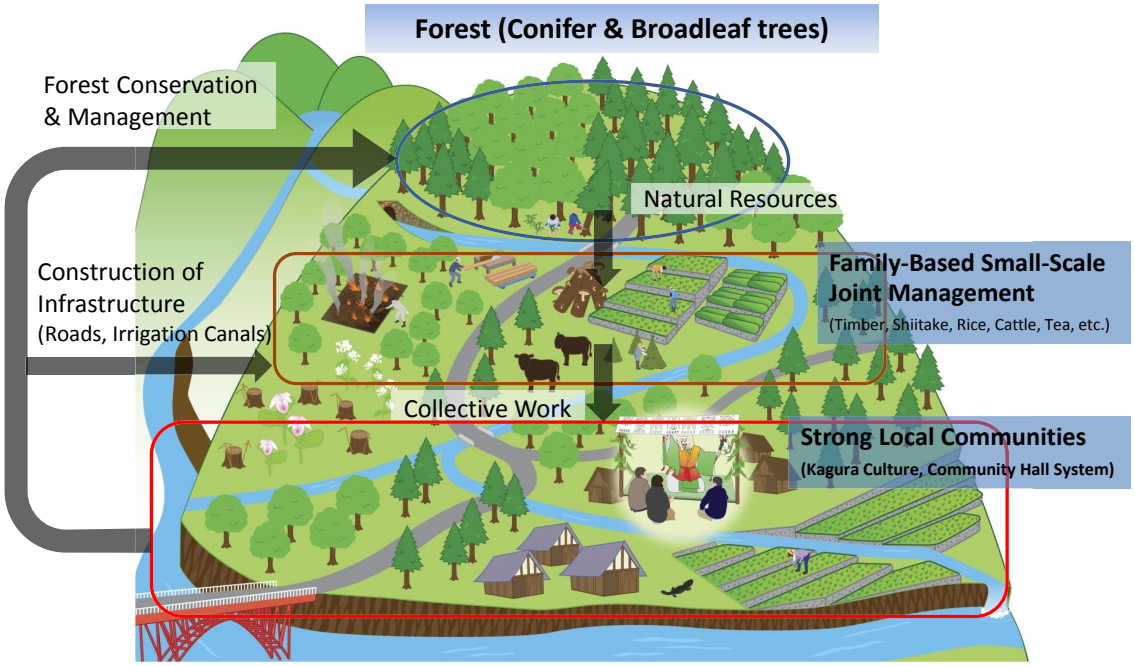
Farmers in the Site





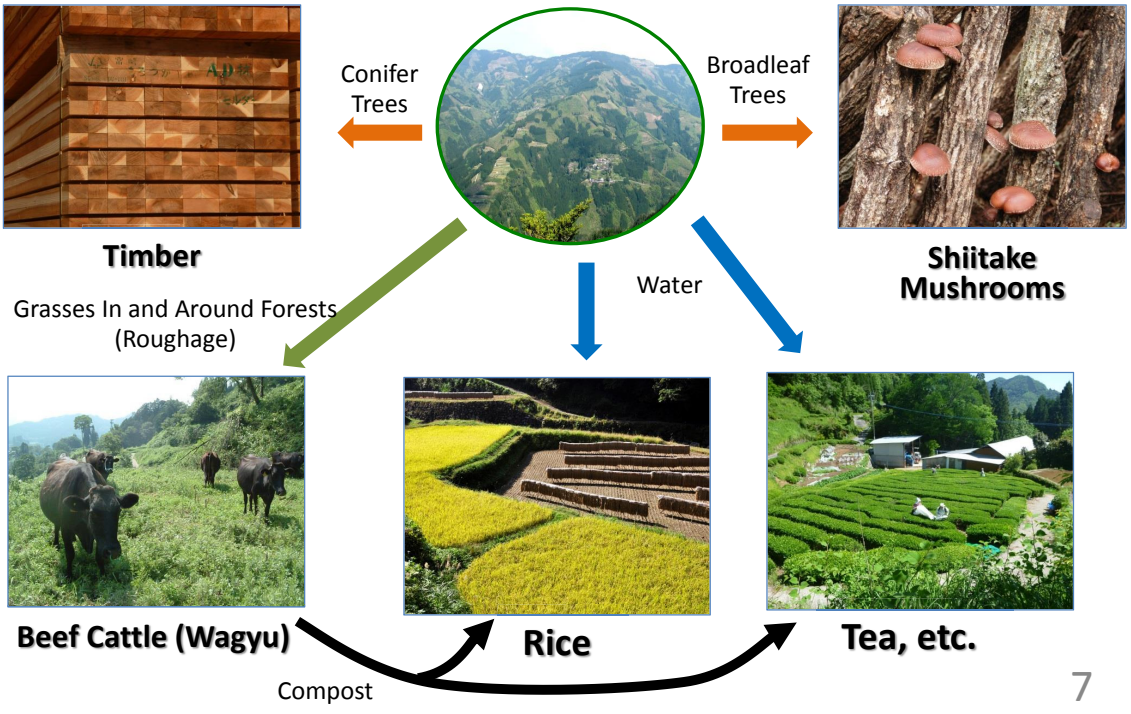

5

II. Mountainous Agriculture and Forestry System



6

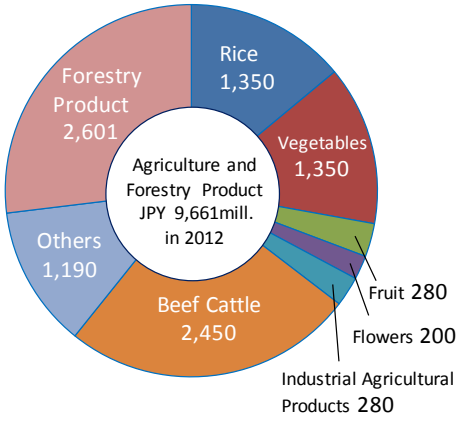
Family-Scale Joint Management to Use Natural Resources Effectively



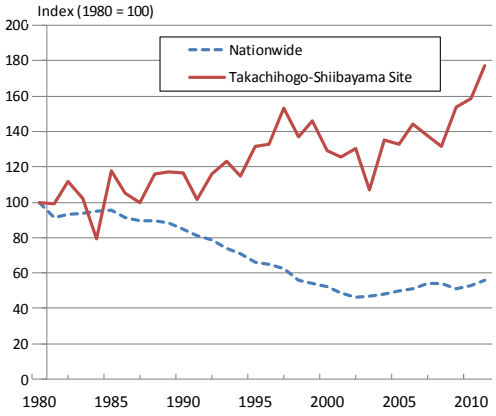
7

Excellent Production Activities

Various Agriculture Products



Increasing Timber Production



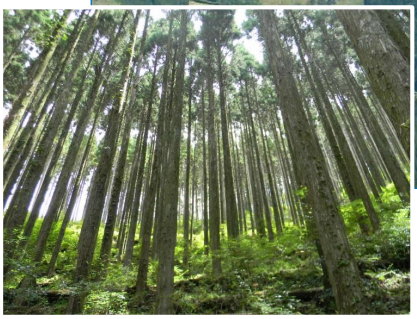


8

Unique Landscape: Mosaic Forest

(forests of conifer trees and broadleaf trees)





Conifer Forest
(dark green color)



Broadleaf Forest
(light green color) 9

Sustainable Agriculture

FSC (Forest Stewardship Council) Certification



The entire Mosaic Forest
(17,000 ha)



Shiitake mushrooms
produced by woods of the Mosaic Forest

The only place in the world!

10

Biodiversity

Secondary nature nurtured by the agriculture system





Maculinea teleius
daisensis



Adonis



Japanese
Cypripedium

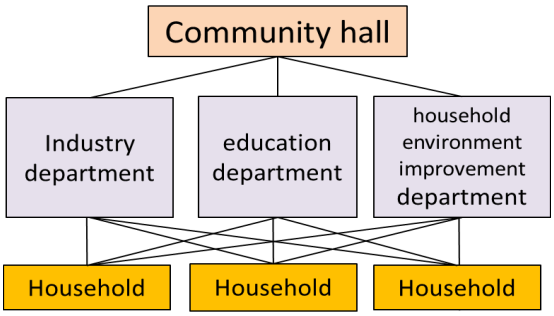


Star lilies

11

III. Strong Local Communities

Community Hall System (organization of one local community)



- All residents belong to it
- It is independent of government
- It has departments to improve agriculture, living standards, education, etc.
- When it comes to decision-making by community halls, all residents have an equal right to speak, and decisions are made following thorough discussions



Residents of a community hall having a discussion

12

Activities by Strong Local Communities

A. Road development with cooperation of community residents



Road network of Morotsuka Village in the eastern part of the Site.

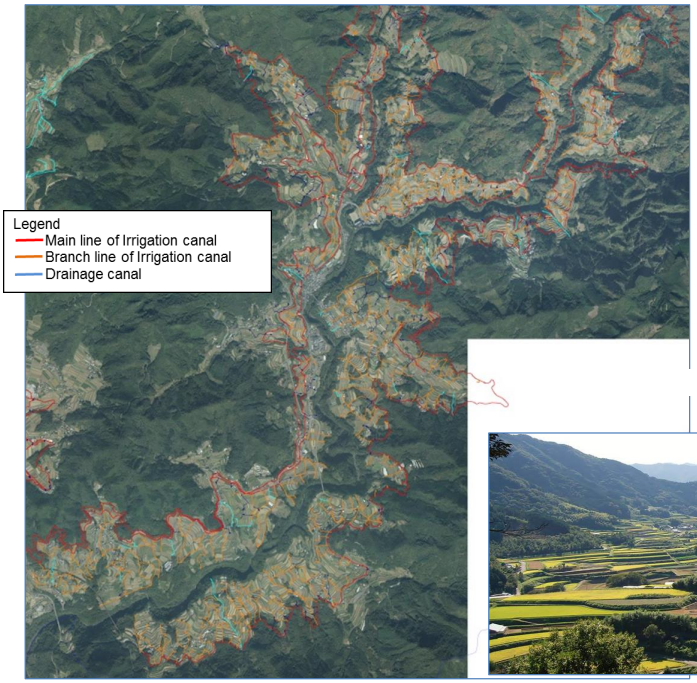
- Community residents supplied land and labor to actively develop a road network In the case of Morotsuka Village in the eastern part of the Site
- Morotsuka Village has a **road density of 62 m/ha—the highest in Japan**.



Community residents constructing a local road by themselves

13

B. Irrigation Canal Networks (total of **over 500km**)





Handmade canal tunnel



Canal on a steep mountain side



A sample of Irrigation Canal Networks in the Site (Takachiho Town)

14

Culture: Kagura Dance (Ritual Shinto Dance)



- Expresses gratitude to the gods for their blessings and prays for a bountiful harvest
- Almost every community holds them and every person in the community participates
- Symbolizes the bonds of local communities in the Site







15

IV. For the Future (Action Plan)

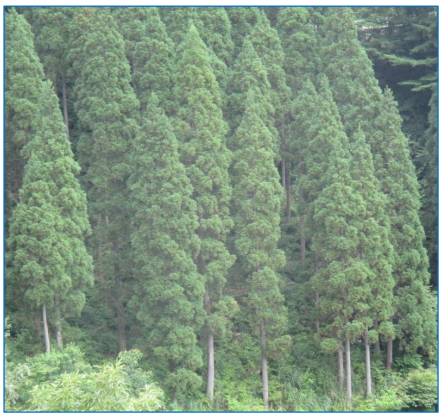
Our GIAHS promotion association will

A) Conserve the agriculture system and forest
B) Conserve traditional culture
C) Provide experiences of agriculture and the forest
D) Develop human resources
E) Contribute to mountainous areas around the world as a GIAHS site

For realizing Forestopia (Forest-Utopia)

16

A. Conservation of the Agriculture System and Forest





Members of the incorporated foundation “Wood Pia Morotsuka”

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B. Conservation of Traditional Culture





Local elementary school children practice traditional shifting cultivation with elders.

18

C. Providing Experiences of Agriculture and the Forest



Farmhouse accommodation



Forest therapy

19

D. Development of Human Resources



Forestopia Learning Forest
Miyazaki Prefectural Gokase
Secondary School



20

Contribution to Mountainous Areas Around the World as a GIAHS Site

FAO FIAT PANIS GIAHS Globally Important Agricultural Heritage Systems

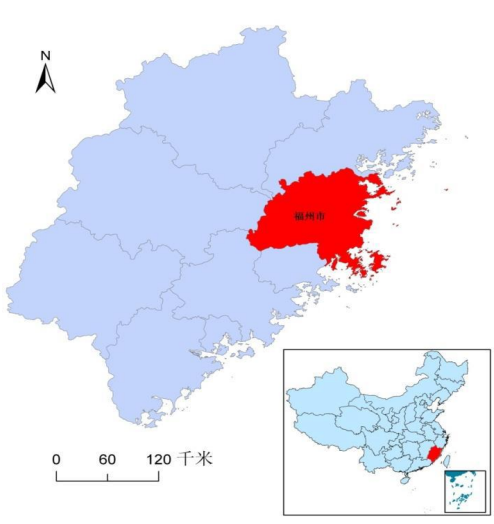
21

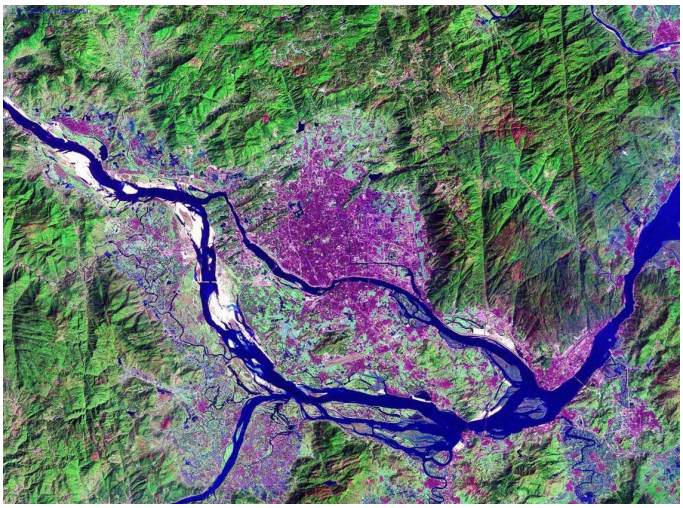
Session III-5

『Conservation and Development of Fuzhou Jasmine and Tea Culture System』

Mr. Wang, Zhenfeng (Deputy Director, Agriculture Bureau of Fuzhou City, Fujian Province)





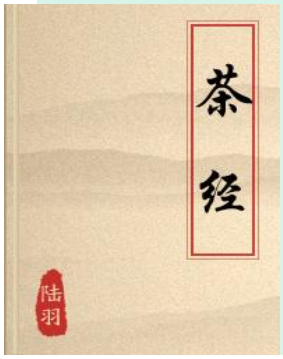


福州为四面环山的盆地，闽江贯穿全城，四周高山山腰适宜种植茶树，冲积的平原沙洲种植茉莉花，发达的水系便于运输，逐渐形成独特的福州茉莉花与茶文化系统。Fuzhou city (a prefectural-level city), the capital of Fujian Province, is located in the southeast coastal region of China. It is also an important port city in China. Warm and humid climate and mountainous terrain of Fuzhou City provides an excellent environment for tea trees and jasmine bushes.

悠久的福州茉莉花茶发展历史

绿茶Tea Planting History

◆ 福州最早种植茶树的文字记载是晋朝(公元317-420).距今1700年。 Tea planting began in Fuzhou before the Eastern Jin Dynasty (317-420).



◆ 唐朝 （618-907）.福州就出产两大贡茶方山露芽和鼓山柏岩茶。According to the *"Classic of Tea"*, the Dew Buds of Fangshan Mountain and Half-Rock Tea of Gushan Mountain had been royal tributes in the Tang Dynasty （618-907）.

茉莉花Planting History of Jasmine

◆汉朝时茉莉花从古罗马--波斯--印度随佛教传入中国福州(公元前206 - 9).距今2200年。According to *"Flora of China"*, jasmine was introduced into China from India and planted in Fuzhou in the Western Han Dynasty (206 BC - 9 AD).



◆宋朝 (960-1127), 福州茉莉花茶制作方法诞生。In the Northern Song Dynasty (960-1127), Fuzhou became the Capital of Jasmine in China.

悠久的福州茉莉花茶发展历史

◆ 茉莉花茶发展史 北宋时茉莉花茶在福州诞生。

◆ 明代 (1368-1644)时，茉莉花茶窨制技艺成熟。

◆清代(1636-1912)时，茉莉花茶受到国内、欧、美、东南亚人的广泛喜爱。

◆ 20世纪至21世纪茉莉花茶呈现兴衰交替的变化。

独特的茉莉花品种

◆ 由于制作茉莉花茶需要清香幽雅的茉莉花，古人通过长期实践选育出最适合制作茉莉花茶的福州种单瓣茉莉花和双瓣茉莉花，福州种只产于福州。In China alone there are over 60 varieties of jasmines，but single-petaled jasmine is the Endemic Species of Fuzhou.



单瓣single-petaled jasmines



双瓣double-petaled jasmines

生态保护功能

保护生物多样性与水土保持The Protection of Biodiversity and Water and Soil Conservation





◆茉莉花生态系统——为鸟类、水生动物：单脚蛏、蚬子、鱼类等提供栖息地和食物。

◆茶生态系统——为多种益虫提供栖息地。

◆茉莉花种在河岸平地和浅滩上，可防止河岸遭侵蚀。

◆ 茶树种植在山坡梯田上，可以降低坡面水流速度，减少水土流失。

生态的种植传统

茉莉花种植技术Knowledge of Jasmine Cultivation





1、**施肥技术Fertilizing：**生产茉莉花茶的花渣喂奶牛，奶牛的牛粪与稻草作为种植蘑菇的原料，废弃的蘑菇培养料作为种植茉莉花的肥料。形成“三白一绿”循环农业，即生产茉莉花、蘑菇、牛奶和茉莉花茶。

2、**修剪技术Trimming：**根据密度采用高茬和低茬修剪法，可以错开采花季节，科学安排劳动力。同时可以减少虫害。修剪的枝条可以选壮枝用于扦插。





生态的种植传统



茉莉花种植技术

3. **采摘Plucking：**严格控制采摘时期，要求采摘含苞待放的花蕾，采摘后一小时内要送到加工地，否则会变味。只有当晚开放的花蕾才可以用于窨制茉莉花茶。



右图中，只有中间的花蕾可以采摘，最左边的茉莉花可以马上用于花茶窨制

生态的种植传统

茶种植技术Knowledge of Tea Cultivation





◆ 1、海拔200米以上的环境适合种茶。东坡和北坡较好。

2、一年采摘两季，春季（3-5月）采摘为好茶。叶厚、嫩，鲜甜，适合制作绿茶及茶坯。其次是秋茶，叶薄、长、味道浓厚，适合制作红茶。

3、入冬前修剪，去除病虫害枝条，减少病虫害。

精湛的传统技艺

独一无二的福州茉莉花茶制作工艺
Processing of Jasmine Tea



茶坯制作（3-5月）
Baked Green Tea Base for Scenting



（伺花）
Flower Preparation: aeration



窨花（6月末-9月）
Blending of Tea and Flowers



通花散热
Spreading, Cooling, and Re-piling



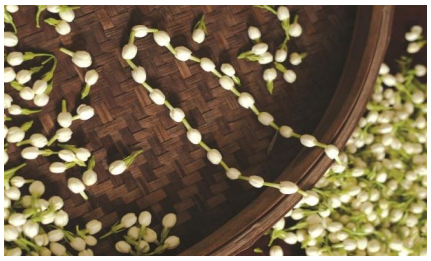
起花Removing the Flowers

美妙的文化



◆1、祈福文化：在中国情人节七夕，福州姑娘抛花祈福，寓意祈求纯洁的爱情





◆2. 簪饰文化：茉莉花是佛教圣花，作为簪饰已经2000多年，是中国的“天香”之花





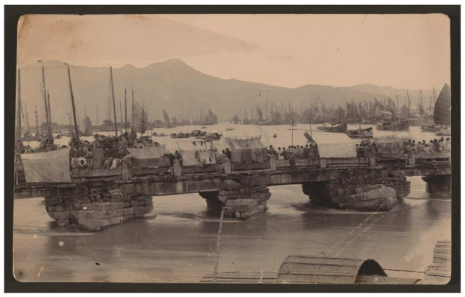
◆3、民俗文化：在婚礼里，茉莉花象征永不分离。作为敬茶礼，长辈祝愿夫妻不离不弃，是爱情的象征。

美妙的文化

4.茶是中国的象征



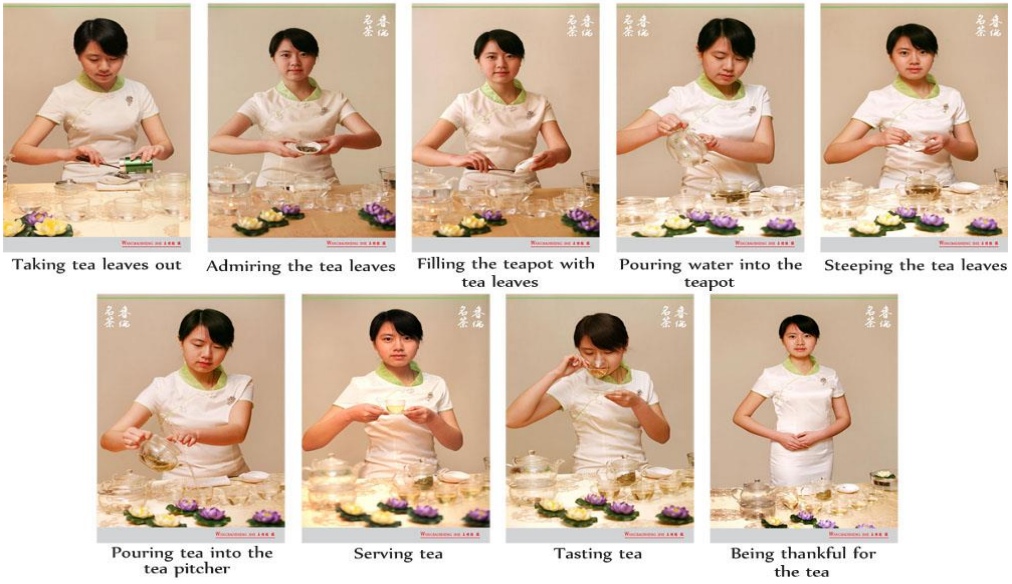




1895年，世界上第一张体育邮票——福州龙舟赛，背景是茶山---鼓山、茶码头--番船浦、福船，代表西方人眼中的中国---茶叶、龙舟。

美妙的文化

茉莉花茶茶艺



创新于今

唯一获三大地理标志保护的茶

2008年1月，国家工商总局商标局对福州茉莉花茶核发地理标志证明商标，2009年9月，国家质检总局通过对福州茉莉花茶地理标志产品保护，11月，农业部通过对福州茉莉花茶实施国家农产品地理标志保护。



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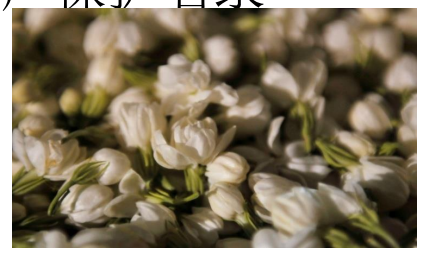
2014年“福州茉莉花茶”传统加工工艺被列入中国国家非物质文化遗产保护名录



采花



伺花



伺花 开放度60%



筛花



窨花



盖面



通花

15

世界名茶——福州茉莉花茶

2012年，国际茶叶委员会授予福州茉莉花茶“世界名茶”称号。



16

- “海丝路.功勋茶”
- 品牌价值达到26.77亿元，位列全国第八，最具经营力品牌



- 全国茶叶标准化技术委员会花茶工作组在福州成立



■ 品牌价值评估

- 中国茶叶区域公共品牌价值评估第7位
  - 中国最具品牌资源力的茶叶品牌首位



■主要措施

- 茉莉花种植保护基地实行分级保护

◆ 实施《福州市茉莉花茶保护规定》2014年8月1日起施行

◆ 划定福州茉莉花种植分级保护基地范围

◆ 在核心保护区树立保护标志和全球重要农业文化遗产标牌



■ 主要措施

● 茉莉花茶科技创新研发和成果转化

- ◆ 成立福州茉莉花茶科技与全球重要农业文化遗产联合研究中心
- ◆ 建设福州市茉莉花茶行业技术创新中心
- ◆ 建立全球茉莉花种质资源圃
- ◆ 市农业局开展福州茉莉花茶产业提升项目

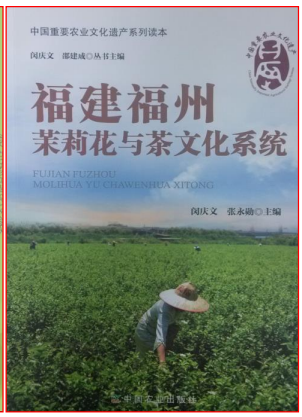


■ 主要措施

- ●编制福州茉莉花茶保护专项规划
- ●福州成立全国茶叶标准化技术委员会花茶工作组
- ●编纂出版专题书籍，加强对保护工作的宣传

●2015年《茉莉韵》、《福建福州茉莉花与茶文化系统》、《茉莉窨城》纪录片、世界遗产《天香九窨》、《千年茶韵》、人民论坛、中国新闻福州茉莉花茶专辑





■ 主要措施

- 开展品牌创建

◆ 做好文化宣传

◆ 重视产品品质，建立优胜劣汰机制

◆ 开展福州茉莉花茶中国行活动

◆ 品牌价值凸显

■ 主要措施

- 建设文化展示平台
- 对发展茉莉花与茶基地进行补助
- 开拓遗产的多功能，发展一二三产业融合



拟开展的工作计划

- 做好保护工作
- 做好科技创新工作
- 制定国家标准
- 做好技艺传承工作
- 开展品牌升级工作
- 拓展国内外交流
- 大力发展一二三产业融合



Session III-6

『Using GIAHS Brand to Promote the Development of Characteristic Industry』

Mr. Jiang, Zhengcai (Deputy Chief, People's Government of Congjiang County, Guizhou Province)

利用全球重要农业文化遗产品牌 推动特色产业发展

Using GIAHS brand to promote the development of characteristic industry

➢贵州从江侗乡稻鱼鸭复合系统

➢Congjiang Dong's Rice-Fish-Duck System

蒋正才

JIANG Zhengcai

中国贵州省黔东南州从江县

(Qiandongnan Congjiang County,Guizhou,China)

2016年6月

June,2016

尊敬的联合国粮农组织官员、各位领导、专家、学者：

Distinguished FAO officials, leaders, experts and scholars:

首先，感谢联合国粮农组织、韩国忠清南道锦山郡政府、韩国乡村遗产研究会（KRHA）给予“贵州从江侗乡稻鱼鸭系统”提供难得的交流学习机会。参加本次研讨会，让我们开阔视野，见识世界，对推进我县“全球重要农业文化遗产”的保护与发展具有重要意义。

First of all, I would like to extend my gratefulness to FAO, Gueumsan government and KRHA for giving us this precious opportunity to exchange and study. We' ll take this opportunity to broaden our horizons and conduct extensive exchanges. Also, this seminar will certainly have great significance for promoting the protection and development of Global Important Cultural Heritage in our county.

汇报提纲 Outline

一、从江县基本情况 Introduction of Congjiang County

二、保护与发展措施 Conservation and Development Measures

三、保护与发展实践 Conservation and Development Practices

四、取得的主要成效 Main Achievements Obtained

五、下一步工作计划 Future Plan

一、从江县基本情况
Ⅰ. Introduction of Congjiang County

从江县位于中国贵州省东南部，全县国土面积3244平方公里，辖19个乡镇，总人口35.2万人，世居有苗、侗、壮等少数民族，人口占总人口的94%。县境内地势起伏较大，沟河发育密集，森林覆盖率达67.47%，是一个以种养殖业为主的山区农业县。

Located in the southeast of Guizhou provinc of China, Congjiang covers the land area of 3244 square kilometers, with 19 villages and towns under the it's jurisdiction and it has a total population of 0.35 million, including Miao, Dong, Zhuang and other ethnic minorities, which account for 94.7% of the total population. Among these permanent residents, the Miao, Dong and Zhuang people take up over 94%. The terrain in the county varies much, and ditch rivers develop intensively. Also, the forest coverage rate reaches 67.47 %. All of these make the county fit for agriculture.

从江县地理位置
Congjiang's Location



从江稻田养鱼历史悠久，将鱼、鸭引入稻田，形成稻鱼鸭系统。现有稻田总面积17.5万亩，其中适于发展养鱼养鸭的有12万亩。独特的生态环境，孕育了多种动、植物地方品种和丰富多彩的民族文化，被誉为“养心圣地·神秘从江”。

With a long history of fishing, Congjiang paddy forms the Rice-fish-duck System by leading fish and duck into it. The total area of existing paddy is 45 square miles, among which 31 square miles is suitable for the development of fish and duck. The unique ecological environment breeds a variety of animals, plants and colorful ethnic culture, which make it known as A Sacred Place for Nourishing the Mind--Mystery Congjiang.





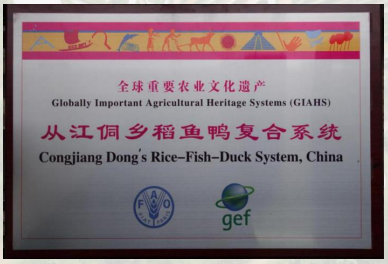
二、保护与发展措施
Ⅱ.Conservation and Development Measures

（一）珍惜荣誉，开发利用。我县“侗乡稻鱼鸭系统”不仅为当地百姓提供了必要的食品来源，还具有重要的生态服务功能。自2011年6月“贵州从江侗乡稻鱼鸭系统”被联合国粮农组织授予“全球重要农业文化遗产”后，从江成为全球第十六个，中国第四个获此殊荣的县份。我县充分利用这块金字招牌，致力于开发当地资源，发展特色农业、乡村旅游业，为老百姓开辟了脱贫门路。

1.Cherish the honor and make full use of it.

Congjiang Dong's Rice-fish-duck System does not only offer the food to the native, but also has important functions to serve the ecology. Congjiang Dong's Rice-fish-duck System was awarded the Globally Important Agricultural Heritage System (GIAHS) by FAO in June, 2011. It is the 16th county in the world and 4th in China to gain this special honor. Our county makes full use of this honor to put enough efforts to exploit local resources, agriculture and tourism, which help the people there out of poverty.







（二）建立机构，强化管理。我县高度重视和支持农业文化遗产保护工作。几年来，从不因为人事变动削弱对农业文化遗产保护与发展工作的领导。同时，为加强文化遗产的管理和协调工作，2015年单独挂牌设立“从江县农业文化遗产保护与发展管理办公室”，明确专人负责该项工作。

2. Set up institution and strengthen our management.

Our county highly values the protection of agricultural heritage. In recent years, it never happens that the protection and development of agricultural heritage is weakened because of the change of management. Meanwhile, to strengthen the management and coordination of the cultural heritage, a management office was specially set up in 2015 and specific persons were appointed to be responsible for the work.

从江县人民政府办公室文件

从府办发〔2010〕123号

从江县人民政府办公室
关于成立农业文化遗产保护与发展工作领导小组的通　知

各乡镇人民政府，县政府有关工作部门：

联合国千年发展目标基金中国文化与发展伙伴关系项目于2008年起在我县试点实施，共涉及文化绘图、博物馆提升、妇幼卫生、乡村旅游、稻鱼鸭共生等子项目。该项目实施以来，对我县挖掘保护文化遗产，引导民族地区发展起到很好促进作用。为加强对该工作的统筹领导，充分利用项目资源，确保项目效应最大化，经研究，决定成立农业文化遗产保护与发展工作领导小组，其组成人员如下：

组　长：杨　军（县委常委、县委副书记）
副组长：蒋正才（县政府副县长）
　　李大琼（县政府副县长）
成　员：石　德（县政府办副主任）
　　敖家辉（县民宗局局长）
　　王耀帮（县财政局局长）
　　刘华钧（县农业局局长）
　　杨代长（县林业局局长）
　　欧阳丽（县水利局局长）
　　吴佳理（县教育局局长）

（三）制定规划，助推发展。制定《从江农业文化遗产保护发展规划》、《从江农业文化遗产保护管理办法》、《从江县中国GIAHS保护试点标志使用管理规则》，规范企业使用“GIAHS”标识。

2015年，贵州省人民政府批准“从江侗乡稻鱼鸭生态产业示范园”为省级农业园区。我县及时编制了《从江侗乡稻鱼鸭系统生态农业产业示范园区建设规划》并将此规划纳入全县“十三五”大健康产业发展规划，为新时期助农增收奠定了基础。

3. Make plans to boost development.

Our county has made some regulations to normalize companies to use the logo of GIAHS.

In 2015, the People's Government of Guizhou Province approved of Congjiang Dong's Rice-fish-duck Eco-industrial Demonstration Park as provincial agricultural park. Also, our county timely prepared *the Congjiang Dong's rice-fish-duck system Ecological Agriculture Demonstration Park Construction Plan* and made this plan the county's "Thirteen-Five" Big healthy industry development that laid the foundation to help farmers in the new era.

全球重要农业文化遗产GIAHS(中国)
贵州从江侗乡稻鱼鸭复合系统保护管理办法

第一条　为了加强全球重要农业文化遗产 GiAHS(中国)贵州从江侗乡稻鱼鸭复合系（以下称农业文化遗产）保护管理和开发利用，促进经济社会协调发展，根据《中华人民共和国民族区域自治法》和有关法律法规，结合黔东南苗族侗族自治州从江县（以下简称从江县）实际，制定本办法。

第二条　在从江县行政区域内活动的单位和个人，应当遵守本办法。

第三条　本办法所称农业文化遗产，是指从江县境内以侗族为代表的各民族开垦、耕种、养鱼、养鸭的水稻田传统的农业文化遗产，以及相关的防护林、灌溉系统、民族村寨和其他自然、人文景观等构成的文化景观。

第四条　农业文化遗产的保护管理坚持保护优先、统一规划、科学管理、合理开发、永续利用的原则。

第五条　县人民政府加强农业文化遗产保护管理工作，将农业文化遗产保护管理经费列入本级财政预算。

第六条　县人民政府按照国家有关规定，科学编制农业文化遗产保护管理规划。农业文化遗产保护管理规划与国民经济和社会发展规划、土地利用总体规划、旅游发展规划以及其他相关专项规划相衔接。

农业文化遗产保护管理规划经批准后，要向社会公布。任何单位和个人不得擅自变更。确需调整和修改的，要按原审批程序办理批准手续。

第七条　下列范围内的农业文化遗产实行重点保护：

（一）丙妹镇“中国最后一个枪手部落”——岜沙片区；

（二）高增乡世界非物质文化遗产——“小黄侗族大歌”小黄片区；

（三）刚边乡稻田鱼种繁育平正片区；

（四）宰便镇从江香猪原种资源品种保护宰便片区。

GIAHS

从江县全球重要农业文化遗产保护试点标志使用管理规则

第一章　总则

第一条　为保持从江农业生物多样性与生态系统功能平衡，保护从江农业文化景观和水土资源合理利用管理，保证从江农业产品食物与生计安全性，保留从江农业传统知识和文化传承发展；保障传统与现代知识体系与技术应用。实现人与环境共荣共存、可持续发展，建立全球水平的农业景观及其有关的生物、文化多样性的保护体系，使之在世界范围内得到认可与保护，并使其成为从江可持续管理和经济发展的基础。

第二条　贵州从江侗乡稻鱼鸭复合农业系统，2011经年联合国粮农组织批准成为中国第四处全球重要农业文化遗产（GIAHS）保护试点地。获得从江县全球重要农业文化遗产（GIAHS）保护试点标志的使用权。

第三条　从江县全球重要农业文化遗产（GIAHS）保护试点标志（以下简称标志），用于证明从江县农业文化遗产宣传及农业文化遗产产品的原产地域和特定品质。标志图示和文字内容如图示。

农产品使用标识　Logo on Products







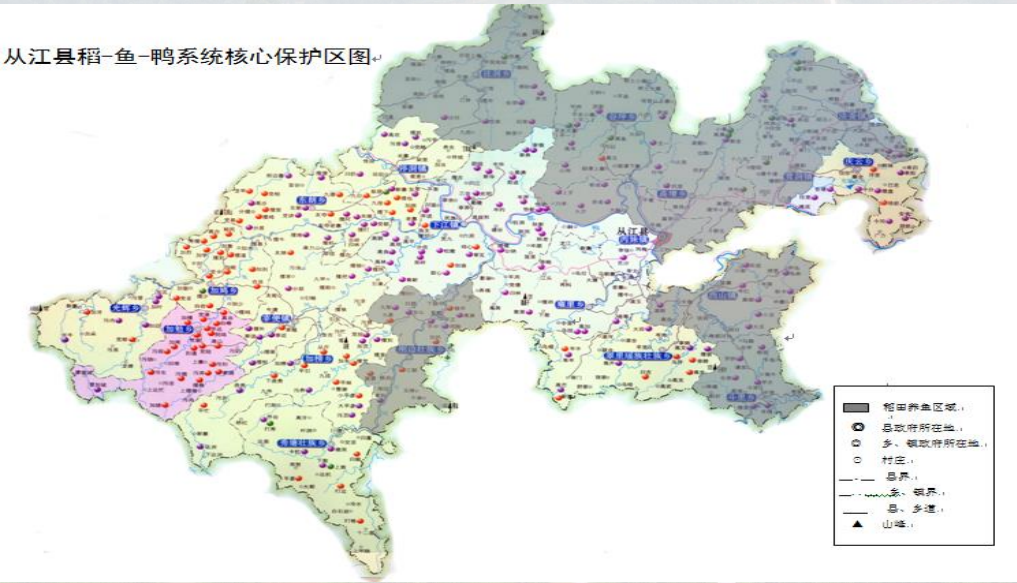


（四）明确保护范围，划定保护区域。“侗乡稻鱼鸭系统”是从江传统农耕文化。因此，我县把全县19个乡镇都列入保护范围。在此基础上划定6个乡镇15个行政村为核心保护区域。重点是把从江糯禾－鱼－鸭，稻－鱼－鸭和国家湿地公园－加榜梯田、小黄侗族大歌、岜沙苗寨等各个区域的功能、保护目标纳入定期评估和监测，充分调动群众参与农业文化遗产保护与发展的积极性。

4.Clear the ranges and zones of protection.

Dong ‘s rice-fish-duck system is the traditional farming culture in Congjiang county. So,we listed the whole 19 counties in Congjiang within the range of protection. Besides, we also listed 6 towns and 15 administrative villages as key protection zones. The main piont is to list the Congjiang Dong’ s rice-fish-duck system, National Wetland Park - Jiabang Terrace, the Dong Chorus of Xiaohuang, the Gunmen Tribal of Basha Miao village and other protection parts into regular assessment and monitoring, which will fully motivate the enthusiasm of the people to be involved in cultural heritage protection and agriculture development.

从江县稻-鱼-鸭系统核心保护区图
The Protection Zones of Congjiang Rice-fish-duck System



贵州从江加榜梯田风光
Jiabang Terrace in Congjiang, Guizhou



贵州从江仙境侗寨
A Dong Village in Congjiang Guizhou



国家级重点文物保护单位—增冲鼓楼
National Relic Protection Unit—Zengchong Drum Tower



中国最后一个枪手部落—岜沙
The Last Gunmen Tribal—Basha Miao Village



岜沙汉镰刀剃头
Hair Cut By Sickle In Basha Village



侗族大歌之乡—小黄

The Hometown of Dong Chorus—Xiaohuang







（五）纳入预算，强力保护。为加强农业文化遗产保护与发展，我县一方面积极争取部、省各级项目经费，支持农户发展稻鱼鸭产业。另一方面县政府将农业文化遗产保护经费纳入县级财政预算，每年安排300万元，专项用于稻-鱼-鸭种养殖的保护和发展。

5.Offer budget and guarantee strong protection.

To strengthen the protection and development of agricultural heritage, our county, on the one hand, actively seeks for provincial project funds to support farmers to develop rice-fish-duck industry, on the other hand, lists agricultural heritage protection funds into the county budget, which will ensure 3 million yuan every year to be specifically used for the protection and development of rice-fish-duck.

三、保护与发展实践
Ⅲ. Conservation and development practices

（一）创建示范点。在划定保护区内的乡镇创办“稻鱼鸭系统保护与发展技术示范点”。采取开挖鱼沟，搭建鱼窝、鸭舍，安装太阳能物理杀虫灯和技术培训等措施，每亩稻田放入田鱼150—200尾、从江土鸭20—25只。年发展示范面积3000亩，带动推广稻鱼鸭种养殖面积5万亩以上。

1.Establish model zones.

In the protected area, our county establishes technological model zones of Rice-Fish-Duck System protection and development and takes measures, such as building nests for fish and duck, installing solar insecticidal lamps and technical training, etc. to ensure that farmers can pour 150 to 200 fish and 20 to 25 ducks into every acre of the paddy. Every year, there will be about 200 hectares being developed into new model zones, which will yearly increase the area of rice-fish-duck system to more than 3300 hectares.





（二）培育重点户。充分利用传统田鱼苗培育资源，引导农户完善传统田鱼苗培育设施，增加科技含量，提高鱼苗的成活率。2014年以来，扶持并培育了本县刚边乡平正村龚青春、石候生等一批示范户，通过传统田鱼苗销售，户均增收3万元，人均增收6700元。既传承了前辈遗留下来的鱼苗繁殖技术，又带动了群众增收脱贫。

2. Develop key participants.

By making full use of traditional fry rearing resources, our country guides farmers to improve the traditional fry rearing facilities and increase the contents of technology, so as to improve the survival rate of the fry. Since 2014, we have supported and developed Gong Qingchun, Shi Housheng and other farmers to be the model family. The average income of each family increased 30,000 yuan and the capita income increased 6,700 yuan. This method not only makes fry breeding technology pass on, but also helps the farmers get rid of the poverty.

从江田鱼繁殖
Fish Reproduction







糯稻-鱼-鸭生产
Sticky rice-fish-duck production











（三）强化技术培训。利用“新型职业农民技能培训”和扶贫“雨露计划”等培训项目，举办稻田养鱼、养鸭、鱼种培育、水稻高产栽培技术等技术培训3000多人次，为项目推广提供了人才保障。

3. Strengthen technical training.

By strengthening training projects such as “new vocational skills training for farmers” and Dew Plan, our country held many technical trainings including Rice-fish-duck and high yielding rice cultivation technologies. The training covers more than 3000 people, which guarantees talents for these projects.



（四）抓好产品认证。2011年以来，我县紧紧围绕侗乡稻鱼鸭系统农产品“三品一标”认证，向国家农业部申报以“从江香禾”、“从江田鱼”、“从江香猪”为代表的农产品地理标志登记。着力打造生态农业品牌，提升农产品附加值，提高农户收入。

4.Keep doing well in product certification.

Since 2011, our county has made good use of Dong ‘s rice-fish-duck system certification to apply for the representative registration of geographical indications of agricultural products, such as the mini pig, Congjiang sticky rice, Ponkan, Fish raised in the paddy field and so on as, from the Ministry of Agriculture. Great efforts have been made to build eco-agriculture brand and enhance the value of agricultural products, which help to increase farmers’ income.





（五）抓好龙头企业引领。注册成立“黔东南聚龙潭生态渔业有限公司”，按照“公司+合作社+农户”生产模式，为广大养殖户提供鱼苗和生产、技术、管理以及产品回购等一系列服务，实现产、供、销一体化经营。

5.Supervise the leading role of Leading Enterprises.

"Southeast Julongtan Ecological Fishery Co., Ltd."was incorporated in our county . And by following the production pattern of "cooperative + farmer", we have provided series of services about fry, production, technology, management and others for the majority of farmers, which help to achieve production, supply, marketing integration business.





（六）发展农家乐餐厅。建立“稻-鱼-鸭主题餐厅”和“稻-鱼-鸭鲜活产品专卖店”，使养殖农户的产品走进餐厅，走上专卖店，为农户生产出的农产品拓宽销路，增加收入。

6.Develop farmhouse restaurants.

With the establishment of "rice-fish-duck theme restaurants" and "rice-fish-duck fresh products stores", farmers' products go into the restaurants and stores, which expands the sales and increases their revenues.





（七）开展传统村落保护。2012年起，我县积极开展从江传统村落的发掘和保护工作。经中国传统村落保护和发展专家委员会评审认定批准，从江县列入中国传统村落名录的共有32个村落，占贵州省传统村落的7.5%。

7.Promote traditional Villages Conservation.

Our county has actively explored and protected Congjiang traditional villages since 2012. With the approval of China's Committee of Experts on the protection and development of traditional villages accreditation, 32 villages in Congjiang, accounting for 7.5% of the traditional villages in Guangzhou Province, are listed in Chinese Traditional Villages.



（八）加强宣传和交流。自2011年6月,得到“全球重要农业文化遗产”授牌以来，我县积极参与国际、国内交流宣传。在国际上，2013—2015年，我县先后赴日本、意大利米兰参加研讨会并交流发言。2015年5月，韩国驻华农务参赞赵逸镐夫妇到从江考察“稻鱼鸭系统”；7月，日本稻鸭共生创始人，国际知名稻田养鸭专家古野隆雄一行6人赴从江考察“稻鱼鸭系统”，并给予肯定和积极评价。

8.Strengthen inter-advocacy and communication.

Sine getting the honor of GIAHS in June 2011, our county actively participates in international and domestic communications and advocacy. During 2013 to 2015, our county has been to Japan, Milan and Italy to attend seminars. In May 2015, Korean Embassy Councilor Chaos Bi-ho-farm couple came to Congjiang to study the “rice-fish-duck system”. In July, the internationally renowned expert in “rice-duck” Jataka Runoff and his partners came to Congjiang to investigate "rice-fish-duck system" and gave the affirmation and positive evaluation.

开展国际交流
international Communications







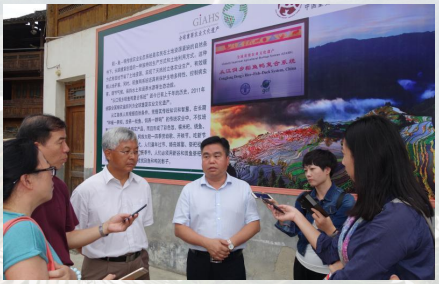



在国内，我县在世界非物质文化遗产地侗族大歌之乡—小黄村建立了“侗乡稻鱼鸭系统”博物馆。制作了“侗乡稻鱼鸭系统”系列宣传光碟。从江香禾糯米饭、腌鱼走进《舌尖上的中国》纪录片。2015年8月，贵州省电视台第二次走进从江拍摄“侗乡稻鱼鸭系统”专题纪录片进行跟踪报道。2015年9月“走进中国科学院·记者行”11家全国知名新闻媒体赴从江探访“稻鱼鸭系统”传统农耕文化，并专程到国家湿地公园—加榜梯田体验农家糯米饭和火烤田鱼，为广泛宣传报道从江农业文化遗产作出了积极贡献。

In China, our county has established "Dong's duck-rice-fish system" Museum in Xiaohuang village, the origin of Dong Choirs, which is in the list of the Intangible Cultural Heritage.We also have made series of promotional CDs of "Dong's duck-rice-fish system". Additionally, the TV show "Tongue of China" introduced Congjiang's glutinous rice and souse fish. In August 2015, the Guizhou TV station went to Congjiang,for the second time, to trace and report the "Dong's duck-rice-fish system". In November 2015, with the activity of " Entering Chinese Academy of Sciences-Reporter Tour", 11 well-known news media went to Congjiang to explore the traditional farming culture of "rice-fish duck-systems".This tour made a special trip to the National Wetland Park, and Jiabang's terraces to experience farmer's sticky rice and fire-grilled fish which made positive contribution to widely broadcasting Congjiang agricultural heritage.

国内交流
Internal communication







四、取得的主要成效
Ⅳ Main Achievements Obtained.

（一）稻田单产明显提高。全县推广稻鱼鸭种养殖面积5万亩，通过示范引领、规范养殖、标准化管理，亩产平均提高10%—15%，水稻平均亩产513.5公斤，田鱼产量35公斤，鸭产量37.5公斤，平均亩产值5600元以上。

1. The productivity in paddy fields has been improved significantly.

The total area used for fish and duck farming and rice growing is nearly 3.33 thousand hectares. Through the standardized management and process of farming and cultivation, the average productivity per 0.067 hectare has been increased by 10-15%. The average paddy rice yield per 0.067 hectare has risen to 513.5 kilograms, and the average output of fish farming and duck farming per 0.067 hectare has reached to 35 kilograms and 37.5 kilograms respectively. The average production value per 0.067 hectare is more than 5,600 RMB.





（二）龙头企业引领初见成效。除在传统鱼苗繁育上引进龙头企业外，在稻米精深加工上，也扶持龙头企业带动发展。目前，我县引进年加工生产3万吨大米的龙头企业一家，公司已研发有“九芑”贡米、“九芑”香禾糯等低、中、高端三大系列8个产品，有1KG—25KG不同规格包装30多个品种，中低产品4.4—5.6元/公斤，高端产品达40—76元/公斤。2015年，公司加工销售大米1.11万吨，实现产值5181万元，带动3000户贫困农户脱贫。

2. Leading enterprises begin to work.

In addition to introducing leading enterprises for traditional fry cultivation, we also introduce some enterprises to enhance the development of deep-processing. At present, we have introduced a leading enterprise which can process 30,000 tons of rice every year. It has developed 8 series of different levels such as Jiuxiang Gongmi and Jiuxiang Kam Sweet Rice with more 30 types of different specifications ranging from 1 KG to 25KG with price of 4.4-5.6 yuan/KG for normal rice and 40-76yuan/KG for high quality rice. The company processed 11,100 tons in 2015 with the output value of 5,1810,000 yuan, which helps 3000 families out of poverty.

九芑农业
Jiuxiang firm







（三）助推农旅融合发展。从江县民风淳朴、民俗文化丰富。世界非物质文化遗产侗族大歌之乡—小黄，枪手部落—岜沙苗寨，国家湿地公园—加榜梯田和先知侗寨—占里村等，这些村寨既是旅游景点，又是传统村落，同时是“侗乡稻鱼鸭系统”核心保护区。





3. It helps boost the agriculture and tourism develop harmoniously.

Congjiang is a county with honest and simple atmosphere and abundant folk culture. The villages and the core protection districts of “Dong’s Rice-Fish-Duck System” are not only traditional villages, but also tourist attractions. These villages are Xiaohuang--the origin of Dong Choirs which is in the list of the Intangible Cultural Heritage, the Basha Miao Village which is a tribe of guns, the Jiabang Terrace which is a National Wetland Park and Zhanli Village which is a Dong Village of the wise men.

近年来，我县充分利用全球重要农业文化遗产品牌宣传，由多彩贵州文化艺术有限公司、贵州省企业文化研究会、美国TVS传媒公司和杭州中闻影视等企业在岜沙、小黄传统村落先后拍摄了《鸟巢》、《侗族大歌》、《树图腾》等享誉国内外的影视片，大大提高了从江的知名度，有效地助推了农文旅融合发展。五年来，全县累计接待游客435万人次，旅游总收入达29.8亿元，年均增长25.7%。





In recent years, the county has taken full advantage of important global agricultural cultural heritage as a brand to advertise itself. Colourful Guizhou Cultural Art Limited Pty, the Corporation Culture Seminar of Guizhou Province, the United States TVS Media and Hangzhou Zhong Wen Picture Company have already filmed “The Bird’s Nest”, “Dong Choirs”, “The Totem of Tree” and other well-known movies in the traditional villages such as Basha and Xiaohuang. These movies have helped enhance and extend the popularity of Congjiang and boost the harmonious development of agriculture and tourism effectively. During the past 5 years, the county has been visited by more than 4.35 million trios, and the revenue from tourism has reached 2.98 billion RMB with an annual growth of 25.7%.

（四）促进生态环境保护。通过传统稻田田坎的加固提高和实施国家水利部小型农田水利建设重点县项目，大大地提高了传统稻田的防渗稳水和有效灌溉功能。五年来，全县稻田有效灌溉面积增加3.62万亩。加榜梯田成为国家湿地公园试点，岜沙村荣获“全国生态文化村”和“贵州省生态文明教育基地”称号，促进了生态环境保护。

4. It improves the safeguarding of ecological environment.

The enhancement of field ridge and the National MWR’S project, which helps small farmland build irrigation works, effectively improve the irrigation ability of farmlands. During the past 5 years, the effective irrigation area in the whole county has increased to 2413 hectares. The Jiabang Terrace has become one experimental unit of National Wetland Park. The Basha Village has won the title of “National Ecological Village” and “Guizhou Province Educational Base of Ecological Culture”. All these actions and projects have helped enhance the protection of ecological environment.

田埂加高
Ridge raising







五、下一步工作计划
Ⅴ Future plan

（一）继续加强对稻田养鱼养鸭传统农耕文化保护与宣传，进一步创办好示范点，充分发挥以点带面，点面结合的示范作用，不断扩大标准化种植面积。

1. The county will continue to strengthen the protection and promotion of the traditional agricultural culture. The pilot sites would be further developed and continue to lead others. And the planting area would be also expanded.

（二）通过标准化稻鱼鸭示范基地建设，完善生产模式和配套技术，培育一批集专业化种养、品牌化经营、综合效益凸现的新型种粮大户、家庭农场和专业合作社，做强做大稻鱼鸭产业。

2. The county wants to expand the “Rice-Fish-Duck System” industry by standardizing the construction of “Rice-Fish-Duck System” demonstration bases, improving the production model and the technologies. Thus, we can train a number of co-ops with specialty of farming technologies, branding management and significant combined revenues, which can help us do better in rice-fish-duck system.

（三）在重要的示范点设置高规格的“全球重要农业文化遗产”石碑标志，展示农业文化遗产魅力。

3. Our county has set high standard stone signs "Globally Important Agricultural Heritage" in important demonstrations, showing charm of agricultural heritage.

（四）紧紧围绕中国·贵州省“大扶贫、大健康、大数据”战略规划，进一步推动农文旅融合发展模式。着力开发农业文化遗产旅游地，打造大健康旅游休闲品牌。充分利用互联网+，统筹做好民族文化、传统村落、自然山水的保护与挖掘，加快融入“桂林旅游圈”和“东盟陆路旅游环线”，把从江打造成为国际旅游度假目的地、民族文化旅游健康养生目的地和中国乡村旅游最美县。

4. Our county closely follow the strategic planning of the "Big poverty alleviation, Big health, Big data" in Guizhou Province, China to further promote the integration of text brigade agricultural development model. Meanwhile, we focus on developing the brand of agricultural heritage tourism, healthy tourism and leisure. Our county fully uses Internet plus method to better co-ordinate national culture, traditional villages, natural landscape protection and exploiting. By doing these, we will accelerate our step to make the "Guilin tourism circle" and "Land of ASEAN Travel Link", which will help to make Congjiang an international vacation destinations, a National Cultural Tourism and health care attraction and a Rural Tourism Destination of China's most beautiful county.

（五）积极参与国内外广泛交流，充分借鉴国内外的成功经验，加快我县农业文化遗产保护与有效开发利用。

5. Our county will continue to actively involve in a wide range of domestic and foreign exchanges and fully draw on the successful experience at home and abroad to speed up the protection and effective development and utilization of agricultural heritage.

（六）加快建设国家湿地公园试点--加榜梯田“全球重要农业文化遗产”博物馆和农耕文化展示厅，充分发挥加榜梯田作为“全球重要农业文化遗产地”和“国家湿地公园”的示范作用，赋予传统农耕文化新的内涵，为当地百姓脱贫奔小康创造财富。

6. Our county will accelerate the construction of National Wetland Park Pilot –the Jiabang terraces “Globally Important Agricultural Heritage” and farming culture museum exhibition hall. We will fully use it’s role of “Globally Important Agricultural Heritage Land” and “National Wetland Park” demonstration effect to add new meaning to the traditional farming culture and create wealth for local people to get out of poverty so that they can be fairly well-off.



Session III-7

『Dynamic Conservation of Agricultural Heritage System by Tourism: Take Qian xi Traditional Chinese Chestnut System as an Example』

Ms. Li, Jianxia (Deputy Chief, People's Government of Qianxi County, Hebei Province)



旅游发展对农业文化遗产动态保护的作用
—以迁西传统板栗系统为例

Dynamic conservation of Agricultural Heritage System by tourism: Take Qian xi Traditional Chinese Chestnut System as an example

Li Jianxia
Qianxi County, Hebei Province

一、遗产概况 Heritage situation

中国迁西县传统板栗种植有2000多年的历史，《诗经》、《战国策》等书都有记载。迁西传统板栗系统是一种典型的生态农业生产方式。在这系统中，通过利用行间、株间空隙地块，种植药材、蔬菜等矮秆作物，积极推广林药、林菌（栗蘑等）、林牧间作等立体经营模式。此外，农户还在树林里养殖梅花鹿、鸡、鸭、鹅等畜禽，充分利用了生物系统相互作用性，减少了系统对外部化学物质的依赖，增加了系统的生物多样性。

- Qianxi traditional chestnut cultivation has more than 2000 years history. The traditional Chinese chestnut cultivation system is a typical eco-agricultural mode. Using the glade to planting herbs, vegetables and other dwarf crops, actively promote Stereo planting pattern. In addition, farmers raise deer, chicken, duck, goose poultry under the forest, making full use of the interaction of biological systems, and reducing the system dependence on external chemical substance, increase the diversity of biological systems.

二、面临的挑战和机遇Opportunities and challenges

A.随着现代社会的发展，传统系统面临越来越多的挑战—Challenges：

1、市场供大于求，市场有待开拓

- Market oversupply

2、矿业化与生态环境带来的挑战

- Ecological environment problems caused by mining

3、农村劳动力的流失、传统农作技术无人继承

- Labor force loss， Agriculture technical staff are rare

4、受经济效益和粮食问题的驱动，现代农技术不断冲击着传统板栗生产

- Modern agricultural technology constantly impact the traditional Chinese chestnut production

二、面临的挑战和机遇Opportunities and challenges

B.传统板栗系统面临的机遇也很明显—Opportunities：

1、传统板栗系统的保护得到了国际组织和中国政府的资金和科技支持

- International organizations and Chinese government support traditional Chinese chestnut protection

2、传统板栗系统迎合了社会主义新农村建设的要求，生态循环

- The traditional Chinese chestnut production system is in line with the concept of ecological cycle

3、传统板栗系统具有可持续发展的潜在能力

- Traditional Chinese chestnut system has the potential for sustainable development

4、传统板栗系统生产的农产品迎合了消费者的现代需求

- Traditional Chinese chestnut production meet the needs of consumers

三、采取的措施

1、发展生态旅游，通过构建观光、采摘为一体的现代产业体系建设，提高迁西板栗知名度和市场竞争力；

- Developing ecological tourism to enhance brand competitiveness;

2、加快龙头企业和板栗专业合作社建设，提高板栗产业综合效益；

- Fostering the leading enterprises and Chinese chestnut specialty cooperatives to improve the comprehensive benefit of Chinese chestnut industry

3、每年举办“栗花节”文化游活动，提高知名度；

- Holding “Chestnut Flower festival “cultural tour to promote the brand

4、设立板栗研发中心和板栗博物馆为传统板栗保护提供保障；

- Establishing chestnut research and development center and chestnut museum to provide protection for the traditional chestnut

5、发展有机板栗深加工产品，提高产品价值。

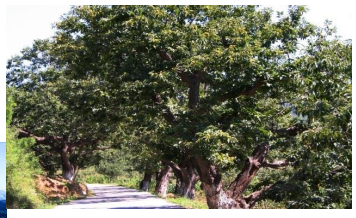
- Developing organic chestnut products, improve product value

四、板栗旅游资源景观特征Landscape features

春季栗花飘香—Chestnut Flower



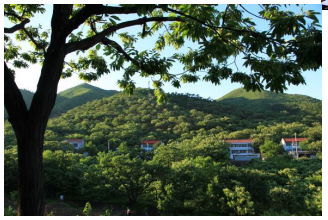
夏季栗树成荫—Chestnut shade



围山转景观



秋季栗果压枝—Chestnut fruit



冬季银装素裹—snow scene



四、板栗旅游资源经济属性Economic attribute

农事活动的参与性、经营景观的观赏性。

Participate in Farming, the ornamental landscape farming activities.









四、板栗旅游资源文化属性Cultural attribute

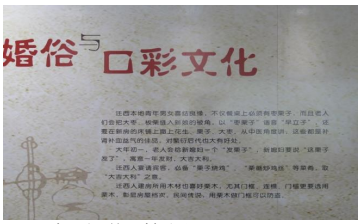
栗林花海文化活动

Chestnut flower festival



民俗文化-雕塑Sculpture art

民俗文化- 婚俗marriage custom



民俗文化-剪纸Paper cut art





四、板栗旅游资源生态特征
Ecological characteristics

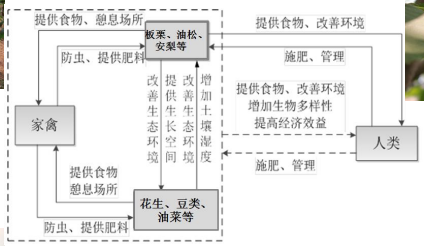
作物套种interplanting



物种多样性Species diversity



板栗生态系统
Chestnut ecosystem



林下养禽
Raising poultry under the forest



林下栗蘑
polyporus frondosus



五、围绕板栗系统的保护性旅游开发
Tourism development

京东板栗大观园
jingdong Chestnut garden



世界文化遗产公园
World Cultural Heritage Park



西山板栗公园
xishan Chestnut garden



乡村公园乡村公园
Country park



五、围绕板栗系统的保护性生态旅游活动
Tourism activities

1、栗乡风情游：栗乡风情园位于迁西县杨家峪，在此可以春赏景、夏观花、秋采摘，而且能体验田间劳作和农家生活乐趣。

- Country style Tour： Enjoy the scenery of flowers， pick Chestnuts， Experience the field life

2、栗林花海游：栗子开花时节，让人们在漫步栗林花海，畅游青山碧水，赏栗乡美景如画的同时，放飞快乐、健康身心。

- Chestnut flowering tour ： Chestnut flowering season, people walking in chestnut forest flowers, enjoy physical and psychological health
- 长城文化游：在欣赏明代长城文化（青山关长城）的同时。赏阅长城沿线栗林风景。
- The Great Wall cultural tour： Enjoy the beautiful scenery of the Great Wall， Taste the fragrance of Chestnut flowers
- 滨水休闲游：塞上海山水风光旅游区。栗香湖生态休闲旅游区。
- Waterfront leisure travel： Experience waterfront recreation

六、板栗产品开发Chestnut product development

- 食品food ： 饮料Drinks ： 工艺品Arts and Crafts ： 护肤用品Skin care products









七、旅游开发中的保护措施
Protection measures in tourism development

1、根据环境承载力优化设计旅游开发规模和时序；

- Optimization of tourism development scale and time sequence based on environmental carrying capacity;

2、设立专职机构进行管理，提高了服务水平、保证了保护与发展的可持续性；

- Establish special protection agency

3、农民参与旅游开发,保证开发过程的顺利进行。

- Farmers participating in tourism development, to ensure the smooth progress of the development process







八、保护效果Protective effect

1、扩展了种植农户收入

- Expand the farmers income

2、发展了周边乡村经济

- Developing of rural economy

3、扩大了板栗种植面积

- Expand the scale of chestnut planting

4、促进了农业多种经营

- Promote a variety of agricultural business

5、保护了板栗种质资源

- Conservation of chestnut Germplasm Resources

Thanks!

Session IV-2

『The Concept and Framework of Integration of Industries in Agri-cultural Heritage Systems Sites: A New Heritage Conservation Way』

Mr. Zhang, Yongxun (Ph.D Candidate, IGSNRR, CAS)

农业文化遗产地三产融合的概念与研究框架
—种新的遗产保护方式
The Concept and Framework of Integration of Industries in Agri-cultural Heritage Systems Sites:
A new heritage conservation way

Zhang Yongxun

Institute of Geographical Sciences and Natural Resources Research, Beijing, China

1 引言 Introduction

2 文献综述 Literatures

3 农业遗产地产业融合的约束条件 restriction conditions of IIAHSS

4 农业遗产地产业融合的概念、内涵与原则 Concept, connotation and Principles of IIAHSS

5 农业文化遗产地三产融合的研究框架 Framework of IIAHSS research

1、引言 introduction

◆ 城乡发展差距导致乡村地区人口、资源、环境问题突出，阻碍了社会可持续发展

Disparity of urban-rural development results in population, resources and environme problems，and these problems have impeded the social sustainability.

◆ 传统农业面临消失的问题得到了国际关注，FAO和一些国家发起农业文化遗产保护项目

The crisis of traditional agriculture confronting disappearance have gotten widespread attentio FAO and some countries launched the GIAHS for protect them since 2002.

◆ 研究表明，劳动力流失和社区参与程度不够是农业文化遗产保护存在的重大问题

Studies indicated participation outmigration of population and lack of local communities a main factors of contributing to ineffective conservation.

1、引言 introduction

◆ 推动一二三产融合吸纳更多的人在本地就业是根本的农业遗产保护方式

A essential conservative way is to make local people employ in local places throug integration of industries.

◆ 农业文化遗产地具有诸多的特殊性，需要一个与众不同的产业融合理论

Agricultural heritage sites is a distinctive type of rural area, so it needs a new theory integration of industries.

✓ 这篇文章将探索农业文化遗产地的三产融合的概念、内涵和研究框架

This paper will explore a new theory on integration of industries in Agricultural herita systems sites, which including the Concept, connotation and framework.

2、文献综述 Literature review

◆ 19世纪，法国和英国——农业综合开发研究

In 19th Century， France and Britain primarily started to research agricultur comprehensive.

◆ 德国和美国——农业科学（教育、科研和拓展服务）

German and America start research of agricultural sciences, including research, educatic and extensive services

◆ 1876, 荷兰——OVO模式（农业科研、教育、拓展服务）

The model of "OVO" in Netherland includes agricultural research, education ar extension services since 1986.

◆ 1950s，美国提出了"Agribusiness"的概念

the concept of Agribusiness was proposed by American Davis, in 1950s

2、文献综述 Literature review

◆ 1990s，日本——第六产业

In 1990s, Japanese researchers proposed the concept of sixth-industrialization agriculture.

◆ 1990s， 中国——农业产业化

In 1990s, agricultural industrialization began to be growing.

◆ In 2015, 中国——农村地区三产融合发展

The integration of industries in rural areas was proposed and implemented by centr government.

2、文献综述 Literature review

◆ 共同特点 Common characteristics

- ✓ 发展综合性农业 develop the comprehensive agriculture
- ✓ 农业生产各环节要专业化 each link of agricultural production be specialized
- ✓ 创造更多的产业类型 more industrial types should be created
- ✓ 加强相关服务业的发展 service industries should be developed

◆ 不足 shortcomings

- ✓ 手工艺、景观、文化等资源被忽略 handcrafts, landscape resources, cultural resources, et were neglected
- ✓ 生产环境可持续性和产业可持续性没有考虑They didn't consider the eco-environment and industrial sustainability

3、农业文化遗产地三产融合的限制条件 restriction conditions

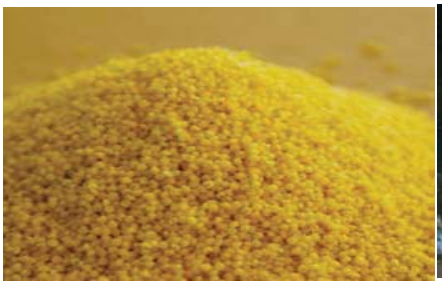
◆ 农业遗产特性 Agricultural heritage characteristics

Features	examples
活态性 Living state	Crops such as wheat, rice, maize, potato, etc.; livestock such as cattle, pig, sheep, etc.; poultry such as chook, duck, goose, etc.; trees; fishes.
动态性 Dynamic adaptivity	Agricultural production means, living styles and cultural content are renewed with technical development.
复合性 Synthesis	The system is constituted by tangible elements, for example, farmlands, villages、forests, buildings, organisms, etc. and intangible elements, for instance, local songs, beliefs, customs, religions, production experiences, etc.
地区差异性 Regional disparity	There are more knowledge and experiences on soil conservation in humid mountainous areas than dry areas and plain areas; it is obviously different in crops, planting patterns, agricultural landscapes and local cultures between moist and dry region.
可持续性 sustainability	All the AHS are more than one hundred years; they have plenty of biodiversity, clean soils and water, stable farmland ecosystems, efficient resource management systems, especially production ability.

3、农业文化遗产地三产融合的限制条件 restriction conditions

◆ 农业遗产资源特性 resources characteristics in agricultural heritage

农产品Product resources：主产品main-products， 副产品by-products








3、农业文化遗产地三产融合的限制条件 restriction conditions

◆ 农业遗产资源特性 resources characteristics in agricultural heritage

观资源Landscape resources：农业景观agricultural landscapes， 聚落景观rural landscapes







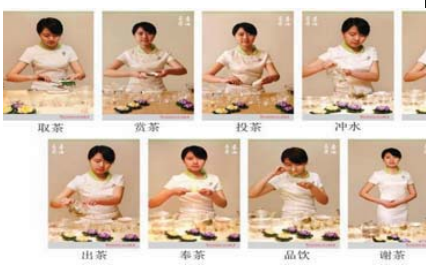

3、农业文化遗产地三产融合的限制条件 restriction conditions

◆ 农业遗产资源特性 resources characteristics in agricultural heritage

文化资源cultural resources：民俗文化folk cultures, 民间艺术folk arts













3、农业文化遗产地三产融合的限制条件 restriction conditions

◆ 农业遗产资源特性 resources characteristics in agricultural heritage

态环境资源eco-environmental resources：优质环境good environment, 珍稀物种rare species







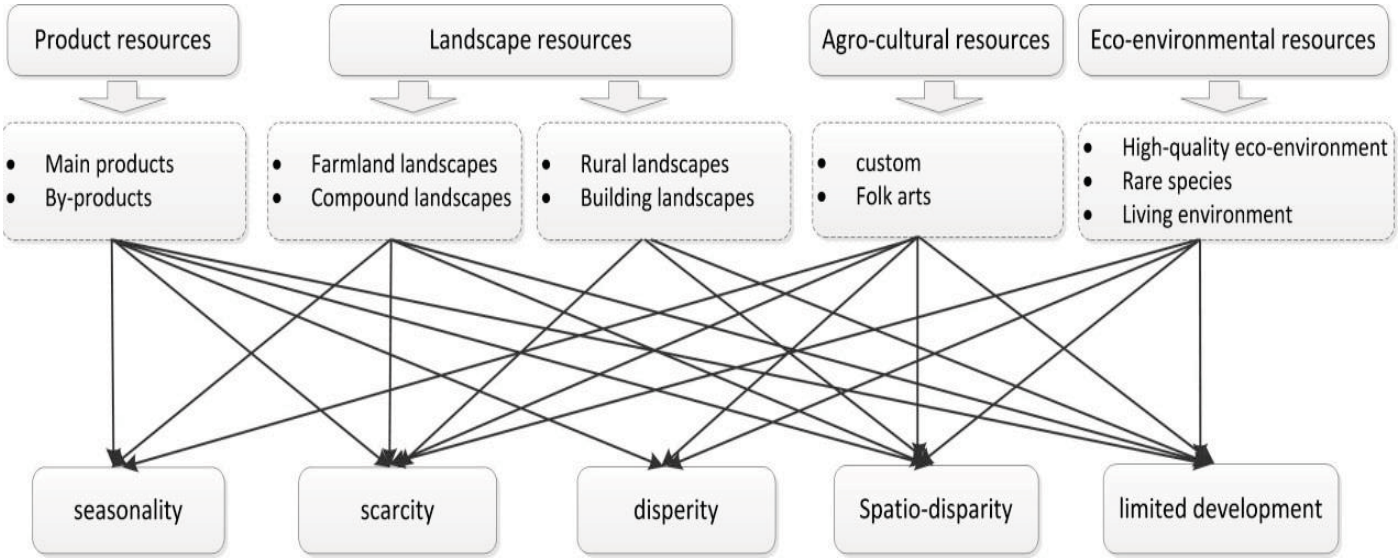






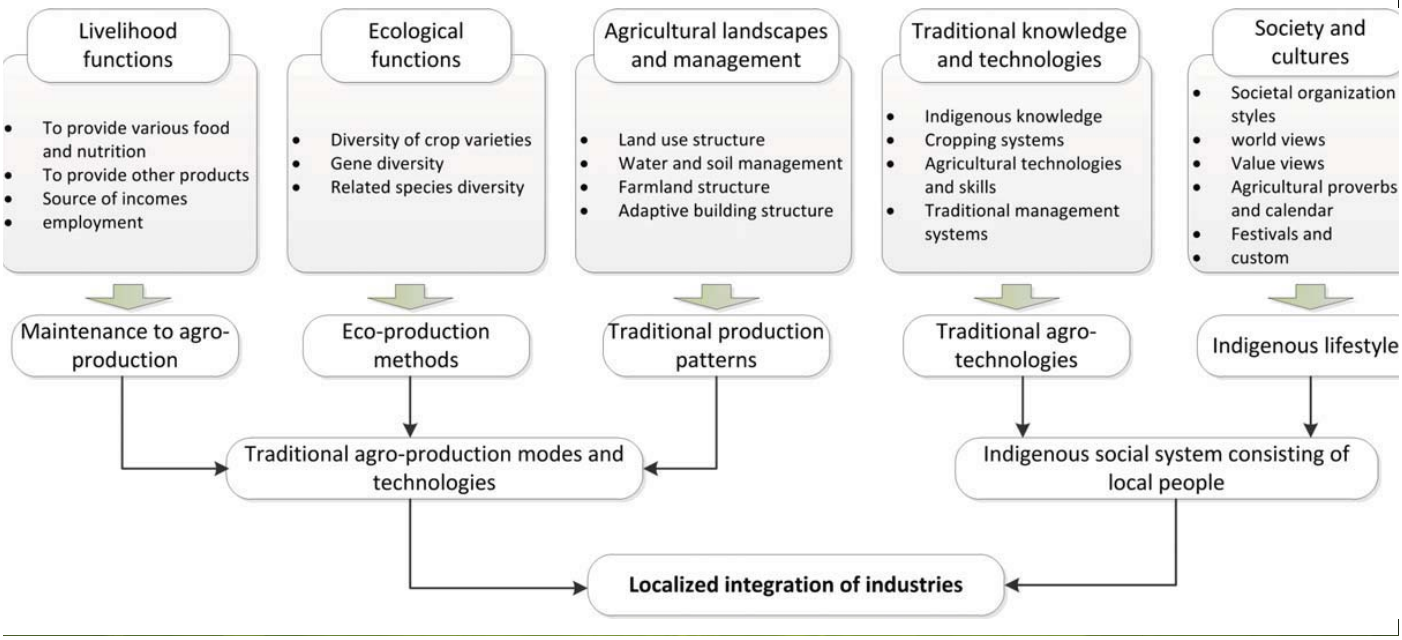
3、农业文化遗产地三产融合的限制条件 restriction conditions

◆ 农业遗产资源特性 resources characteristics in agricultural heritage



3、农业文化遗产地三产融合的限制条件 restriction conditions

◆ 农业文化遗产保护的要求 Requirements to AHS conservation



4、农业文化遗产地三产融合的概念、内涵与基本原则
Concept, connotation and fundamentals of IIAHSS

◆概念concept

ⅰ) 通过创造性的资源开发、合理的组织形式和经营机制，实现一二三产融合和协同发展的过程；

a process that accomplishes integration and synergetic development among th primary, secondary and tertiary industry in AHS sites through creative development o resources and the establishment of the advisable organization patterns and operatio mechanisms;

ⅱ) 在这个过程中，农民是主要的参与者；

in the process, farmers are the dominant participants;

ⅲ) 农民收入的增加是三产融合发展极为的重要目标

income increase of farmers is the most important objective;

4、农业文化遗产地三产融合的概念、内涵与基本原则
Concept, connotation and fundamentals of IIAHSS

◆概念concept

ⅳ) 三产融合发展必须建立在依据集聚效应和劳动地域分工理论，对资源特征、产业发展基础的分析和评估的基础上。

IIAHSS conducted should depend on the scientific analysis and assessment on the resources characteristics (e.g. spatio-temporal characteristics, quality level, quantity characteristics) and the foundational conditions of industrial development (e.g. accessibility, laborers quality, currently industrial situations, policies, current industrial status), according to aggregation effect and geographical division of labor theories

4、农业文化遗产地三产融合的概念、内涵与基本原则 Concept, connotation and fundamentals of IIAHSS

◆内涵 Connotations

- 只是保护手段，而不是最终目的
  just a means to protect AHS rather than the eventual aim

- 每个次区域根据自己的资源禀赋发展不同的产业
  each sub-region should identify their advantageous resources and industries for investing the main industries different other places

- 产业不能对农业遗产有负面影响
  The industries don not negatively impact AHS and have obvious advantages

4、农业文化遗产地三产融合的概念、内涵与基本原则 Concept, connotation and fundamentals of IIAHSS

◆内涵 Connotations

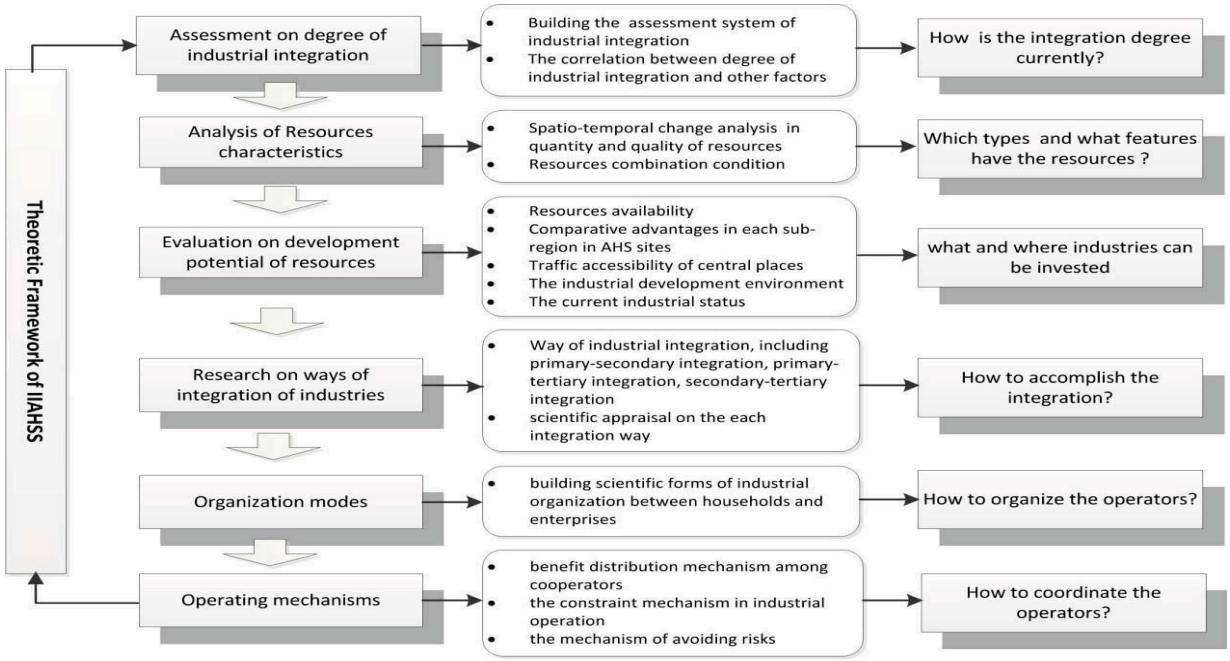
- 农业文化遗产地三产融合应以资源特征的深入分析和科学规划为基础
  IIAHSS must be on the basis of scientific planning and in-depth researches on the local resources and industrial environment and foundation.

- 农业文化遗产地三产融合实现通过经营实体、产业组织形式和经营体制实现
  Industrial operation is a complex project which is comprised of operational entities (PE), form of industrial organization (FIO) and operation mechanisms (OM)

5、农业文化遗产地三产融合的研究框架
Framework of IIAHSS research

- 三产融合度评价
  Evaluations on integration degree of industries.
- 资源特征分析
  Analyses of resource characteristics
- 产业发展潜力分析
  Analyses on the industrial development potential
- 产业融合方式研究
  Research on ways of integration of industries
- 组织形式研究
  Organization modes
- 经营机制研究
  Operating mechanisms

5、农业文化遗产地三产融合的研究框架
Framework of IIAHSS research





谢谢！

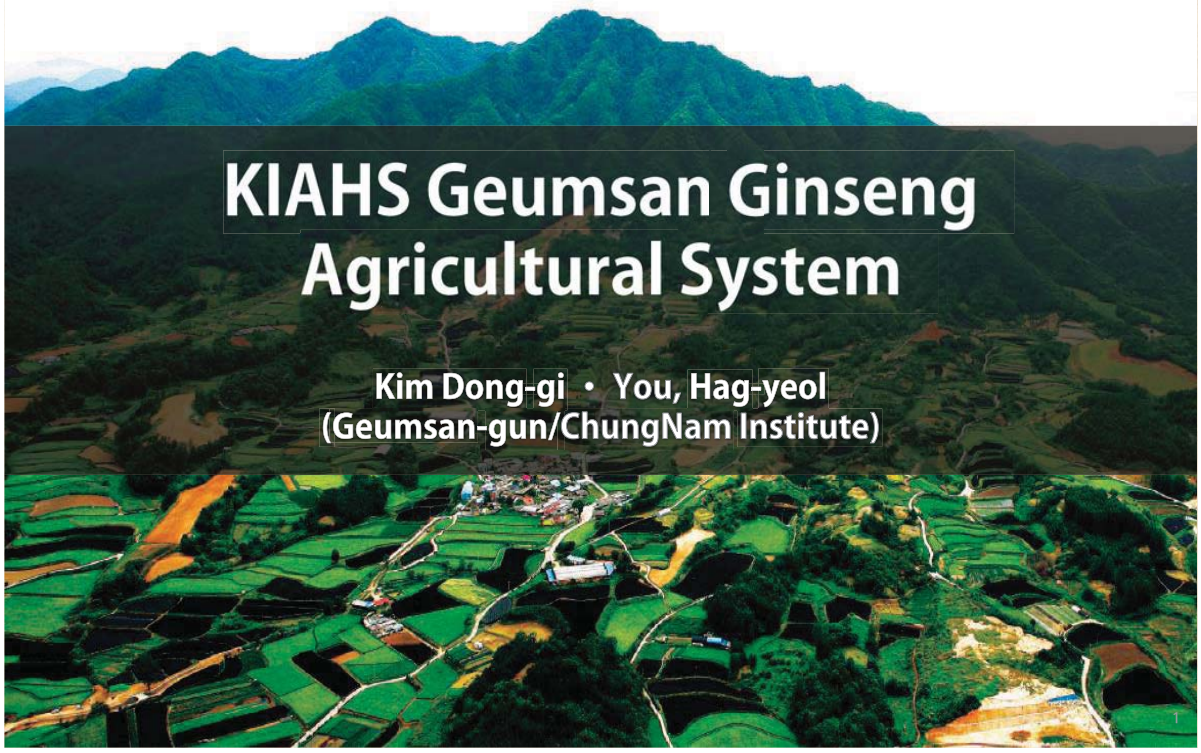
Thank you very much!



Session IV-3

『KIAHS Geumsan Ginseng Agricultural System』

Mr. Kim, Dong -Ki and You, Hag-yeol
(Geumsan-gun / ChungNam Institute)



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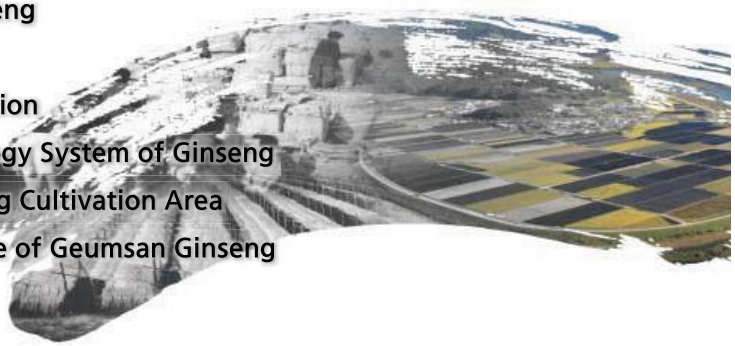
   KIAHS Geumsangun Ginseng Agricultural System
2. Geumsan Ginseng Agricultural Heritage System
   1) Historicity of Geumsan Ginseng
   2) Food/Food Security
   3) Biodiversity/Ecological Function
   4) Traditional Farming Technology System of Ginseng
   5) Unique Landscape of Ginseng Cultivation Area
   6) Related Tradition and Culture of Geumsan Ginseng



2

1. Current Status: Geumsangun County/ KIAHS Geumsangun Ginseng Agricultural System



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1) Geumsangun County

- Geumsan-gun is located in the southeast of Chungcheongnam-do.
- Geumsan-gun is famous for producing area of medicinal herbs, and its specialty is ginseng.
- There are the International Ginseng and Herb Research Institute and International Ginseng distribution center in Geumsan, and the Geumsan Insam (ginseng) Festival is held every year.
- The area of Geumsan-gun is 576.66㎢.
- This region has population of 55,355 for 24,738 households and 42.6% of its population live in Geumsan-eup at the end of the January, 2014.



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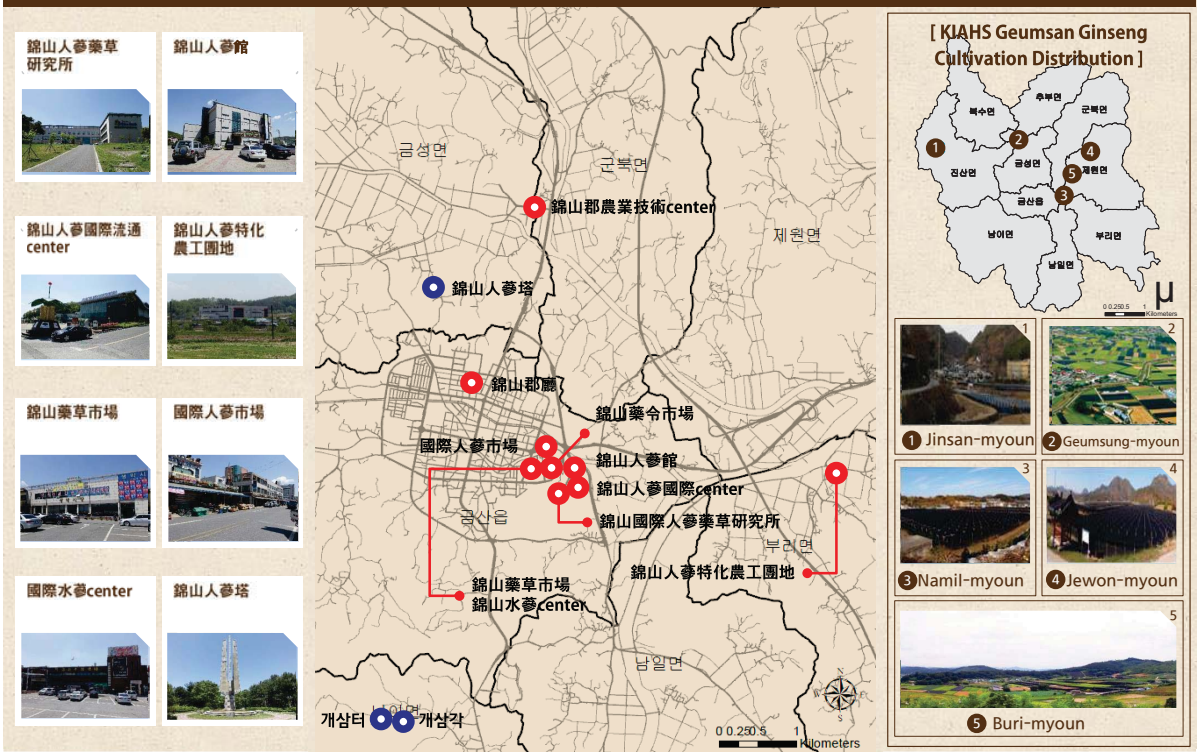
2) Current Status: KIAHS Geumsangun Ginseng Agricultural



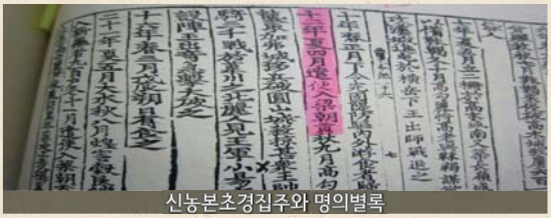
2. Geumsan Ginseng Agricultural Heritage System



1) Historicity of Geumsan Ginseng

- Records of GeumsanGinseng's 1500 years: Samguksaki(The Chronicles of the Three States) , Sinbongbonchogyoungjipju(神農本草經集註), Myoungeuibyoulnok(名醫別錄)


삼국사기


신농본초경집주와 명의별록

- Prior Goryeo Dynasty: Haedong History Book No 26
  - 海東繹史 第二十六卷 物産志
  - 人蔘 乃重百濟者 形細而堅白 氣味薄於上黨 次用高麗 高麗卽是遼東 形大而虛軟 不及百濟 百濟今臣屬高麗 高麗所獻 兼有兩種 止應擇取之 實用並不及上黨者


海東繹史 第二十六卷 物産志

- During Goryeo Dynasty: Seonhwabongsagoryeodogyoung
  - 宣和奉使高麗圖經 卷第二十三 雜俗 2 土産
    人參之榦 特生 在在有之 春州者 最良 亦有生孰二等 生者 色白而虛 入藥則味全 然而涉夏 則損蠹 不若經湯釜而孰者 可久留 舊傳形區者 謂麗人以石壓去汁作煎 今詢之 非也 乃參之孰者 積垛而致爾 其作煎當自有法也 館中 日供食菜 亦謂之沙參 形大而脆美 非藥中所宜用 又其地 宜松而有茯苓 山深而産流黃 羅州道 出白附子 黃漆 皆土貢也
  - 高麗史節要 卷之二十一 忠烈王[三] 乙未二十一年 元 成宗 元貞元年


宣和奉使高麗圖經 高麗史節要

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2) Food/Food Security

(1) Position of Geumsan Ginseng in Korean Ginseng Industry

Type	Area	Farming household	Type	Area	Farming household
Icheon, Gyeonggi	660	801	Boeun Chungbuk	303	301
Yeoju Gyeonggi	635	730	Goisan Chungbuk	586	955
Yeoncheo Gyeonggi	455	1,001	Eumseong Chungbuk	552	614
Hoengseong Gangwon	415	752	**Geumsan Chungnam**	**398**	**1,164**
Yanggu Gangwon	430	327	Youngju Gyeongbuk	288	354
Chungju Chungbuk	315	542	Bonghwa Gyeongbuk	290	389

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2) Food/Food Security

(2) Korean Biggest/Most Ginseng Farmers' Associations Obtained

Association	Established	Member(person)	Process Capacity of Fresh Ginseng(ton)
Ganghwa	1968	412	60
Eastern Gyeonggi	1958	809	100
Paju Gimpo	1967	571	270
Gangwon	1979	1,082	35
Chungbuk	1955	2,382	240
Baekje Geumsan	**1956**	**3,658**	**320**
Seosan	1970	933	130
Jeonbuk	1974	2,483	240
Punggi	1956	869	360

Source: MAFRA Statistics Data on Ginseng, 2014

(3) Center of Korean Ginseng Distribution 'Geumsan'

Type	Number of store	Daily sale volume(ton)	Daily gross sale amount (hundred million)	Annual volume(ton)	Annual gross sale volume (hundred million)
Int'l Ginseng Market	189	7.5	6.8	534	470
Fresh Ginseng Ctr	174	85	31	6,130	1,513
Yaknyeong Market	330	50~60	6	4,750	430

Source: http://www.geumsan.go.kr

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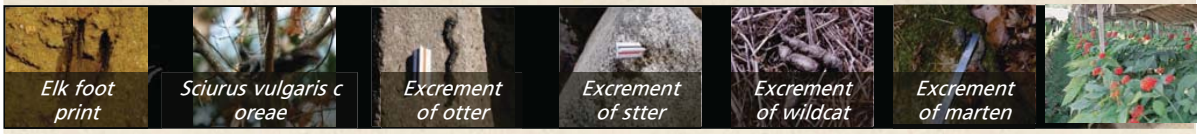
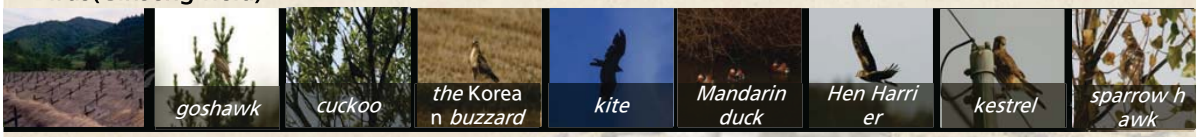
3) Biodiversity/Ecological Function

• Mammal(Ginseng field)



• Birds(Ginseng field)



• Reptile/Amphibian(Ginseng field)

• Insects(Jewon-myoun Firefly)



• Fish(Near Ginseng field)



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3) Biodiversity/Ecological Function

(1) Flora around Geumsan Ginseng Cultivation Area

Type		Result
Jeogok-ri	Forest	32family 46genus 46species 7variety 3kind 56classification
	Graveyard	24family 42genus 37species 10variety 1kind 48classification
	Ginseng field	18family 29genus 27species 3variety 1kind 31classification
	Planned-dry field	20family 38genus 35species 4variety 0kind 39classification
	Planned-paddy field	21family 36genus 34species 4variety 0kind 38classification
	Experiment group-dry field	16family 18genus 18species 0variety 1kind 19classification
	Stream	43family 68genus 61species 14variety 1kind 76classification
	Village	24family 54genus 54species 10variety 1kind 65classification

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3) Biodiversity/Ecological Function

(2) Naturalized Plants around Ginseng Field

Type	Forest	Graveyard	Ginseng field	Future (rice paddy)	Future (dry field)	Future (meadow)	Experiment group (rice paady)	Experiment group (dry field)	village	stream
Ave naturalization rate (%)	1.8	13.8	16.0	20.0	23.0	18.8	15.4	21.1	24.1	24.6

【Scientific significance】

- Naturalized rate in Ginseng field holds similar rate to rice paddy in Experiment group area(15.4%) but lower than dry field area of Experiment group(21.1%), and it is fair to say the vegetation environment is relatively healthy.

* Naturalized Plant: the foreign plant being transferred via human movement from its origin to a different location
* Naturalization rate: rate of naturalized plants against the overall flora in a set space

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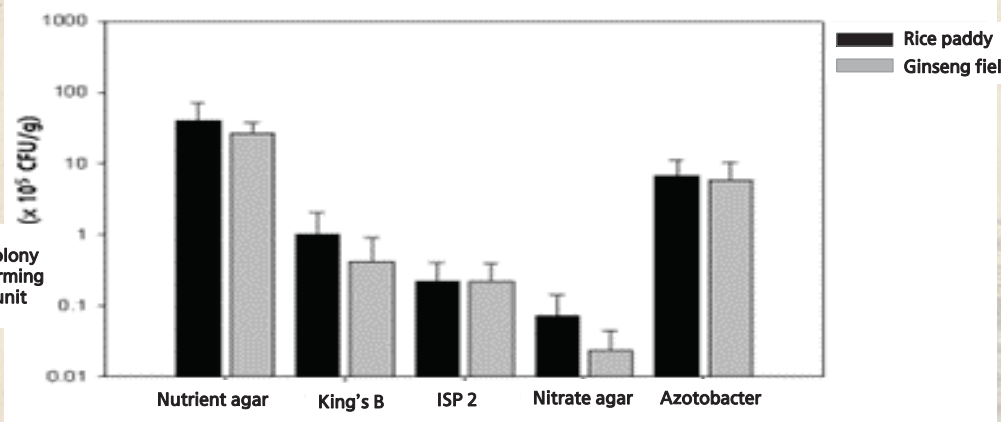
3) Biodiversity/Ecological Function

(3) Density Analysis on Soil Bacteria around Geumsan Ginseng Field



【Scientific Significance】

- The statistic significance between density of soil bacteria in Ginseng field vs, rice paddy in other area show mere gap, indicting the healthy soil condition in Ginseng field.

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4) Traditional Farming Technology System of Ginseng

• Systematic management & cultivation of Ginseng system

① Area selection	② Set area managing	③ Ginseng seed pick &germination	④ Seedbed: seed plant	⑤ Permanent field
Climate/region	Plowing	Blossom/plant	Seedbed placing	Implantation
Topography	Topography	Sprouting method	Planting	Sunscreen
Soil component	Soil pest control		Sunscreen	Sprouting
Productivity	Ridge building		Seedbed managing	Ridge control
Crop			Seed Ginseng pick	Winter control
				Harvest
Soil management	Ridge/screen control	Seed/sprouting	Plantation control	Cultivation·Harvest

4) Traditional Farming Technology System of Ginseng

(1) Selecting intended spot for Ginseng field

- Ginseng field spot selection is the most essential key factor for successful farming. The traditional knowledge suggests a spot with good drainage, north or northeast ward easy slop, no blocking mountain in north and with clear open space.



【 Scientific significance 】
- Cool climate area is ideal for the hardy crop Ginseng cultivation, avoiding hot summer. Geumsan holds best condition in latitude and topography. The highest daylight temperature in Geumsan is 30° for 40~50 days in a year.
- Open area facing north or northeast with blocking mountain in the west absorbs enough sunray in the morning and sun gets blocked in the afternoon, minimizing the hear damage.

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4) Traditional Farming Technology System of Ginseng

(2) Plowing

- Over 15 times in a year with 15cm depth is plowed for the selected spot. More plowing brings better yield. Summer season plowing is done with green tobacco to control soil bacteria and insect eggs in the sunlight.



【Scientific significance】
- Sufficient plowing supplies enough oxygen in soil, bringing aggressive activities of organism and decomposition which gets absorbed by crop transforming the unavailable nutrients to available nutrients.
- Control of soil bacteria and insect in sunlight brings higher soil production with lower density insect, and frequent plowing also control weed.

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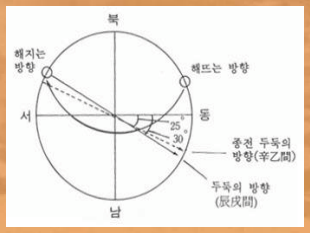
4) Traditional Farming Technology System of Ginseng

(3) Ridge building

➲ The valley section of Ginseng field ridge faces Shineul(辛乙) direction with metal establishment westward and fixation of the higher side toward north.



【 Scientific significance 】
- Shineul (辛乙) direction is 25~30° inclined from east toward south and allows suitable sunrays for half-shadow Ginseng plant.



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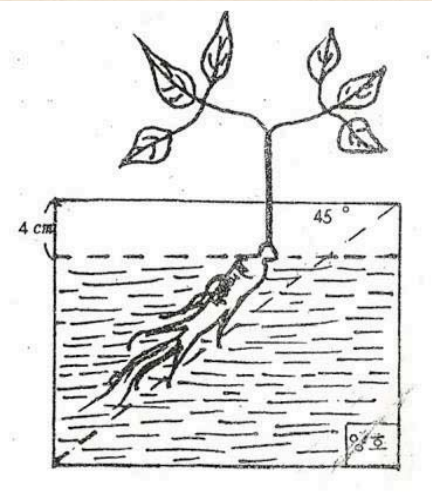
4) Traditional Farming Technology System of Ginseng

(4) Traditional implantation method



資料: 錦山人蔘協同組合(1991) 人蔘耕作教材

【 Scientific significance 】
- Ginseng is implanted in 4cm depth at 45 degree to reduce dry damage and salt concentration, while developing better rootlet, part and root size.

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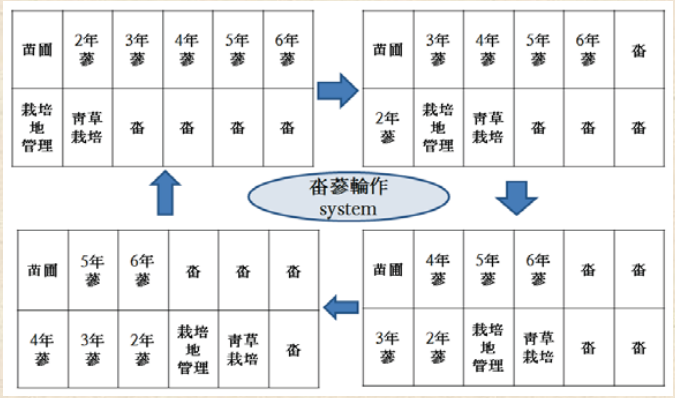
4) Traditional Farming Technology System of Ginseng

(5) Crop rotation for paddy Ginseng

➲ Field Ginseng is cultivated in paddy. For repeated cultivation is not suitable for Ginseng, and moving fields can be expensive, paddy Ginseng method has solved the matter.



【Scientific significance】

- Paddy Ginseng's scientific value lies with its soil ferility. The active ingredients of soil can prevent exploitation and respond well with soil ferility improving crop. Further benefit includes lower soil sickness, lesser harmful insects, wiser effort allocation and stability increase of Ginseng operation.

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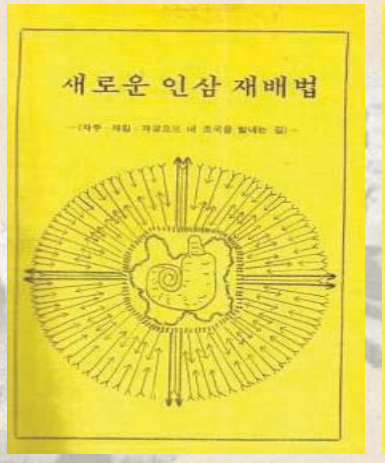
4) Traditional Farming Technology System of Ginseng

(6) Records of Traditional Cultivation of Geumsan Ginseng

➲ Traditionally inherited cultivation experiences of Ginseng in Geumsan were recorded in ' Book of New Cultivation Method for Ginseng' in 1970.





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5) Unique Landscape of Ginseng Cultivation Area

(1) Characteristics of Aricultural Landscape in Geumsan

- Rural villages in Geumsan farm various dry field crops in hills of mountain foot area and Ginseng paddy farms in between, forming its complex landscape. The majority ecotone area holds Ginseng fields like other Ginseng cultivation areas, and most paddy are occupied by Ginseng cultivation as Geumsan county's unique agricultural landscape.





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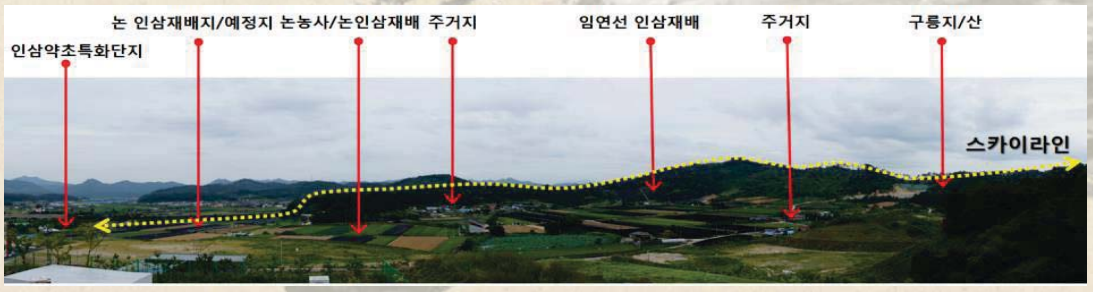
5) Unique Landscape of Ginseng Cultivation Area

(2) Characteristics of Ginseng Field Landscape in Geumsan

- Villages usually settled in about 150m above sea level and surrounded by low height mountains of 250m sea level range.
- Majority fields are mix-cultivated with rice and paddy Ginseng. The characteristics of Geumsan county's hilly agriculture landscape includes various crops, including sweet potato, bean, corn, pepper, peanut, potato among the system.





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6) Related Tradition and Culture of Geumsan Ginseng

KIAHS tangible culture & cultural resources


Gaesamgak


Gaesam Park


Geumsan Ginseng trading arcade


Geumsan Ginseng exhibition hall


Ginseng Medicinal plant Health Hall

KIAHS intangible culture


Ginseng wine(Chungnam Intangible Heritage)


Geumsan Jwado Nongak music


Geumsan Farmers'' Music Preservation Association


Ginseng Nongak Music Contest

KIAHS association/orginization


Geumsan Ginseng Cooperatives(1923)


Geumsan Int'lGinseng Market Association


Geumsan GinsengYaknyoung Market


Geumsan Ginseng Hotel Association


Geumsan Cultural Center

KIAHS food cultural resources


Ginseng Samgyetang Chicken Soup


Fresh Ginseng Fried Dish


Ginseng Fishcake


Ginseng Honey Preserved

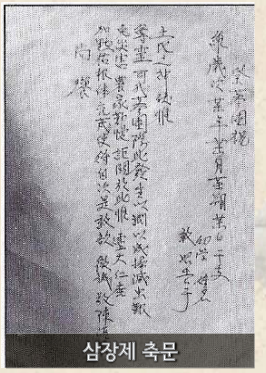

Red Ginseng Candy


Red Ginseng Drinks

6) Related Tradition and Culture of Geumsan Ginseng

- Tradition exists in culture of Samjangje and obituary notification in formality
- Gaesamje ceremony: ceremony of appreciation and wishing for rich harvest at the first Ginseng planting field called Gaesamteo
- Samjangje: Service to Mountain god for rich harvest of Ginseng farming

Samjangje service and death notice


삼장제 축문


삼장포 부고

Ceremony of mount entering and ritual service


Gaesamje


Samjangje


Service for mountain god


Sansinje pole

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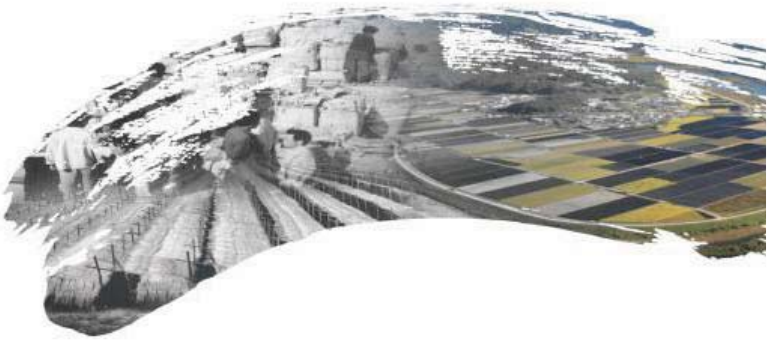
Thank you very much!



Session IV-4

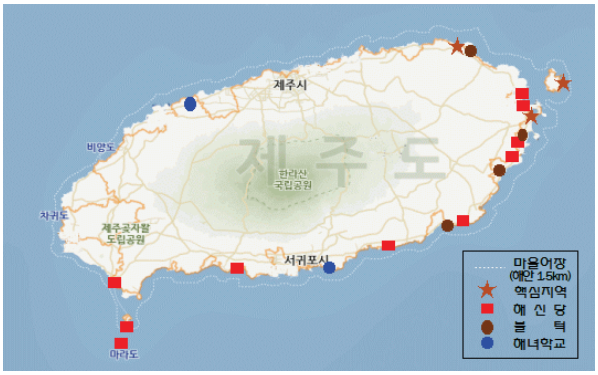
『Jeju Haenyeo Fishery System』

Ms. Choa Hye- Kyung and Mr. Kang seung-jin (Jeju Development Institute)



Jeju Haenyeo Fishery System

- **Korea National Fishery Heritage No 1 :** Jeju Haenyeo Fishery System
- **Collaboration** ① Ministry of Maritime Affairs and Fisheries ② Jeju city/Seogwipo city ③ Jeju Fisheries Cooperatives ④ Various fishing village cooperatives ⑤ Haenyeo Museum
- **Heritage location : Entire area of Jeju Special Self-Governing Province**
  Extent: Fishing grounds of coastal villages(1.5km from coastline) in 254km extent coastline
- **Core area:** Gujwa, Seongsan, Udo Island
- **Access:**
  Circuit hwy, sight-seeing road, Industrial Road



CONTENTS

Ⅰ History of Jeju Haenyeo

Ⅱ Distinct Features of Heritage

Ⅲ Contemporary Significance of Heritage

Ⅳ Threats and Challenges

Ⅴ Sustainable Management

Ⅵ Social/Environmental Impact post Heritage Designation



Ⅰ. History of Jeju Haenyeo

Jeju Haenyeo in historic record

- <*Samguksagi, The Chronicles of the Three States.*> Goguryeo Dynasty : 'Caok is specialty of Seopna(**ancient Jeju**).
- <*Goryeosa, the Korean Dynasty*>: 2 pearls by Yun Eunggyun were named 'Yamyoungju or shining marbel'.
- <*the Annals of the* Joseon *Dynasty*> : Governor Gi Geon did not consume abalone, knowing the difficulty of diving.
- <Tamnasullyeokdo of Jeju(1702)>: Picture Byoungdambeomju includes a scene of people enjoying boat ride.

Other names for Jeju Haenyeo

- Haenyeo / Jomnyeo / Jamsu
- Jomnyeo in Jeju , but also referred as Jamnyeo in ancient literature
- During the Joseon Dynasty –

  Pojak : male abalone divers in deep water

  Jamnyeo: female divers for algae including seaweed and seastaghorn



Ⅰ. History of Jeju Haenyeo

1) Expedition Diving

- Expedition diving network was formed to overcome the less catch due to overfishing by Japanese submarine fishing boats.
- First expedition diving : Gyoungsangnamdo Province in1895
- Expedition area: The Korean peninsula , including Gyoungsangdo Province, Gangwondo, Dadohae, Gyoungsangbukdo, Hamgyoungnamdo, Japan, Qingdao and Ttarien in China, Vladivostok in Russia



- Number of Haenyeo on Expedition Diving(as of 1937)

Korea	Jeollanam do	Jeollabuk do	Gyoungsang namdo	Gyoungsang bukdo	Chungche ongnamdo	Gangwon do	Hamgyoun gnamdo	Hamgyoun gbukdo	Hwanghae do	Total
	493	18	1,869	473	110	54	32	5	50	2,301
Japan	Tsushima	Kochi	Kagoshima	Tokyo	Nagasaki	Shizuoka	Chiba	Ehime	Tokushima	Total
	750	190	55	215	65	295	51	19	50	1,891

Ⅰ. History of Jeju Haenyeo

2) Independence Movement by Jeju Haenyeo

- First occurred in 1932 among Haenyeo from Gujwa, Udo Island and Seongsan area.
- Resisted against the Japanese colonial exploitation policy, threatening their survival.
- Sublimated from survival struggling to Independence Movement activities.

3) Jeju Haenyeo post 1960s

- Birth of tourism industry in late1960s
- Partook in tourism industry, following reformation of industry structure



Ⅱ. Distinct Features of Heritage

자연·문화·사람이 가치를 키우는 제주

Marine Production and Livelihood Means

1) Catches of Jeju Haenyeo

- Total yield improved with rubber diving suit from mid 1970s.
- Main catches: conch, sea cucumber, abalone, sea urchin, blue abalone , agar-agar, seaweed, Sea weed fusiforme , gulfweed

2) Importance of Jeju Haenyeo in Jeju fishery industry

◦ Haenyeo as an employee group: takes 84%(2014) of fishery industry



Ⅱ. Distinct Features of Heritage

자연·문화·사람이 가치를 키우는 제주

Marine Production and Livelihood Means

3) Fishery yield by Jeju Haenyeo

◦ Catches of Jeju Haenyeo(2014) : 4,106ton or $20.3 million (applied $1:1,200won)

- Catches increased from 3,500 ton (2010) to 4,000 ton (recent)

Type	2010		2011		2012		2013		2014	
	Yield	Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield	Amount
Total	3,634	17,238	3,543	20,666	3,647	20,963	4,368	22,546	4,106	24,416

◦ Over 80% of Jeju marine export volume is yield by Haenyeo

◦ Per capita income for Haenyeo: increased to $2,800 ~$12,500(as of 2010)



Ⅱ. Distinct Features of Heritage

자연·문화·사람이 가치를 키우는 제주

Knowledge System and Skill of Jeju Haenyeo



1) Diving

- Basic skill and knowledge of Haenyeo for their catch
  - Pre-study the fishing ground map of habitat and rock situation.
  - Acquires necessary knowledge for currents and winds in advance.
- Longer work of Haenyeo improves her lung capacity and individual response level to water pressure and temperature.
- Haenyeo are divided as Sanggun(Advanced), Junggun(Middle) and Hagun(Low) per individual skill level.



Ⅱ. Distinct Features of Heritage

Knowledge System and Skill of Jeju Haenyeo



2) Haenyeo's work wear



<Mulsojungyi(diving suit)/Sujunggi>



<Mulche(top)>

3) Diving Equipment



<Bitchang(hoe)>



<Jokswenun(goggles)/Jokeunnun>



<Tewak Mangsari(catch net)>



<Jonggaehomi(hoe)>



Ⅱ. Distinct Features of Heritage

자연·문화·사람의 가치를 키우는 제주

Jeju Haenyeo Community

1) Jamsuhoi Association, the community of economy and society

- The voluntary community organization handles joint production and meetings.
- The community shares ins and outs of diving and participate in the town management
- Represents the independent women status in Jeju economy with half farming and half fishery participation.
- Earned the individual membership as village fishery association member post1975.

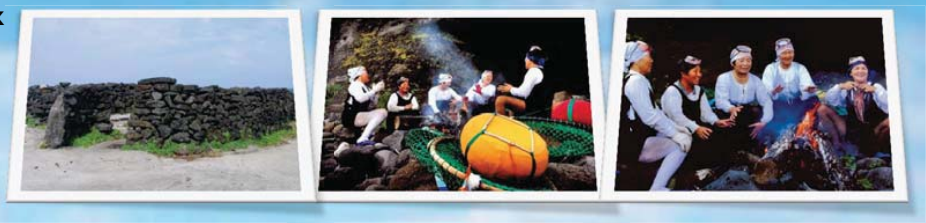


Ⅱ. Distinct Features of Heritage

자연·문화·사람의 가치를 키우는 제주

Value System and Culture of Jeju Haenyeo

2) Bulteok



- Bulteok, a symbol of Haenyeo community
  - Outdoor dressing room, waiting area and warming place before and after diving
  - Venue for information exchange and community decision/discussion
- Currently 20 Bulteok remained and each coastal village used to have 3~4 Bulteok .



Ⅱ. Distinct Features of Heritage

Value System and Culture of Jeju Haenyeo

3) Shamanistic ceremony

- Haeshindang (Shrine for the god of the sea) : Haenyeo' s holy place, praying for their safety and rich harvest
- Community joint preparation for the offerings and ceremony
  - <Yowangmaji, greeting for the Dragon King> : Invites the Dragon King and pray for rich harvest and no accident in safety
  - <Jamsugut> : Haenyeo develops stronger unity, sharing the Jausugut together.


<Marado Island Aegieopgaedang>


<Jongdalli Saenggaenapdonjitdang>


<Yowangmaji>


<Jideurim>

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Ⅱ. Distinct Features of Heritage

Outstanding Landscape and Management of Local Resources

1) Outstanding landscape

- Harmonized scene of ocean, oreum(volcanic hill) and Haenyeo sumbisori(exhaling breath sound)
- Marine cultural resource of Bulteok, Haeshindang and port , Wondam, Dodaebul in Jeju ocean-scape



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Ⅱ. Distinct Features of Heritage

Outstanding Landscape and Management of Local Resources

2) Resource management & culture preservation

◦ Safeguarding Jeju Haenyeo & income increase
- Accident prevention program for Haenyeo
- Release young fish and shells in the ocean
- Establish Haenyeo Market for Income production

◦ Preserving Jeju Haenyeo culture
- List for UNESCO Intangible Cultural Heritage
- Establish & operate Haenyeo Museum
- Vitalize Haenyeo culture thru Haenyeo Festival, etc

◦ Nurturing Jeju Haenyeo
- Year-round operation of 2 Haenyeo School
- Simple process for new Haenyeo registration



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Ⅱ. Distinct Features of Heritage

Preservation and Improvement for Biodiversity

1) Limitation rule for catches

◦ Eco-friend skilled Haenyeo diving system has preserved the sustainable biodiversity in Jeju.

◦ Application of Ban Period for Diving Catches

구 분	금 지 기 간	연중포획금지체장
해 삼	7월 1일 ~ 7월 31일	
전 복	10월 1일 ~ 12월 31일	체장 10cm 이하
소 라	6월 1일 ~ 8월 31일	체장 7cm 이하
톳	10월 1일 ~ 다음해 1월 31일	
우뭇가사리	10월 1일 ~ 다음해 4월 30일	
도박류	10월 1일 ~ 다음해 4월 30일	
감태류	1월 1일 ~ 6월 30일	
오분자기	자율적 설정	체장 3.5cm 이하

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Ⅱ. Distinct Features of Heritage

Preservation and Improvement of Biodiversity

2) Management for the village fishing ground

- Gaeddakyi: community joint weeding and cleaning of fishing ground around the coast and intertidal zone
- Sow conch and abalone seedlings in the village fishing ground

▶ Partaking in fishing ground management is one of mandatory requirements.

- Fishing ground management of Jeju Haenyeo reflects the well harmonized coexistence with the mother nature.





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Ⅲ. Contemporary Significance of Heritage



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Ⅳ. Threats and Challenges

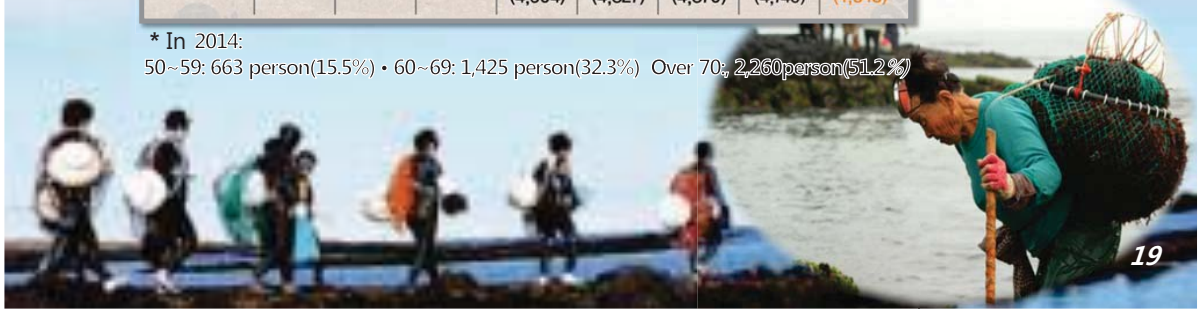
Threats

- Decrease of Jeju Haenyeo
- Aging factor of Jeju Haenyeo

연도별 잠수현황

	`70	`80	`90	2000	2005	2010	2011	2014
잠수수(명)	14,143	7,804	6,827	5,789	5,545	4,995	4,881	4,415
30세미만(%)	31.3	9.8	4.3	0.1	0	0	0	0
30~49세(%)	54.9	60.7	44.2	22.1 (1,282)	12.9	2.5 (125)	2.7 (132)	1.5 (67)
50세이상(%)	13.8	29.5	51.5	77.8 (4,504)	87.1 (4,827)	97.5 (4,870)	97.3 (4,749)	98.5 (4,348)

* In 2014:
50~59: 663 person(15.5%) • 60~69: 1,425 person(32.3%) Over 70: 2,260person(51.2%)



Ⅳ. Threats and Challenges

Challenges

1) System structured for the existence of Haenyeo

◦ Essential to form consensus decision among public administration, Fisheries Cooperatives, Fishery Association and Haenyeo Society

◦ Sound systematic operation of Haenyeo School to promote future Haenyeo

2) Launched Haenyeo Membership

◦ Semi-fishery association member status allows over 60 day diving a year in the village fishing ground.

3) Recovery of resources in the village fishing ground

◦ Release larger volume of seedling fish and shell

◦ Maintain Total Allowable Catch(TAC) system



Ⅴ. Sustainable Management



Safeguarding Jeju Haenyeo & Income Increase

1) For Haenyeo safety and accident prevention measure

- Colored diving suit offered since 2011
- Project to reduce the work hours and diving period

2) For Haenyeo welfare

- Subsidized for diving medicare: $3.54 million
- Diving safety mutual fund: $64,000

3) For Haenyeo income increase

- Price stabilization measures for live shell
- Subsidized for the 6th industry production facility of marine products

Ⅴ. Sustainable Management

Preserving Jeju Haenyeo Fishery and Culture

1) Heritage designation and preservation of Haenyeo Culture

- Designation : 'Jeju Haenyeo Diving Suit and Gears(2008)' as Jejudo Provincial Folklore Item No 10
- Designation: 'Haenyeo's Song(1997)' as Jejudo Provincial Intangible Cultural Assets No 1
- UNESCO Intangible Cultural Heritage designation progress in process (2016)

2) Haenyeo Museum and Haenyeo Festival

- Haenyeo Museum operation began in 2006, hosting 200,000 annual visitors .

3) System set up to preserve Haenyeo Fishery

- Establish "**Ordinance for sustainable Haenyeo livelihood**"
- Set model fishery associations for education of apprentices



<Haenyeo Museum>

Ⅴ. **Sustainable** Management

Preservation of Haenyeo Livelihood

1) Operation of Professional Haenyeo School

- Hansupul Haenyeo School
- Beophwan Jamnyeo Village Haenyeo School

2) Simplified new Haenyeo registrations

- Permits diving practices of new Haenyeo at village fishery association level
- Support Haenyeo registry of returning fisheries and village, multicultural family members

City	Per year						
	Total	2010	2011	2012	2013	2014	September 2015
Total	98	13	19	14	14	29	9
Jeju city	64	3	15	12	8	20	6
Seogwipo city	34	10	4	2	6	9	3

Ⅴ. **Sustainable** Management

Maintain the Persistent Tendency of Marine Resource

(Fish bank facility, seaweed plantation , hurricane prevention facility, underwater low longline fishery facility)

Coastal ocean farm project

(Set fishing banks, release baby fish)

Build Marine forest

(Adapt new customized model per fishing ground)

Resource recovery project for village fishing ground

(Gaeddakyi-cleaning, Hijiki plantation, Kelp pilot cultivation)

Artificial seaweed plantation project

(Build fishing ground per each district and region

Build Marine forest


VI. Social/Environmental Impact post Heritage Designation
Efforts for FAO GIHAS Designation
◦Improve and promote the value of FAO GIAHS Jeju Haenyeo Fishery System
◦Various synergy effect, tying with UNESCO Natural Heritage value can be produced.
Establish Systematic Conservation and Management
◦ Establish Fishing Ground Resting-year System
◦ Maintain the clean fishing ground environment and expand marine resources
Establish 3D utilization system
◦ Promote Haenyeo culture and fishery villages thru development of fishery tourism resources
◦ Improve Haenyeo brand value , applying 'Ordinance of Haenyeo culture contents program'
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Hayoung Gomapsuda!
Thank you very much!

Session IV-5

『KIAHS Damyang Bamboo-forest Agricultural System』

Ms. Wonhee K. You(RG&E Research Institute)





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Ⅰ. Damyang Raises Bamboos…

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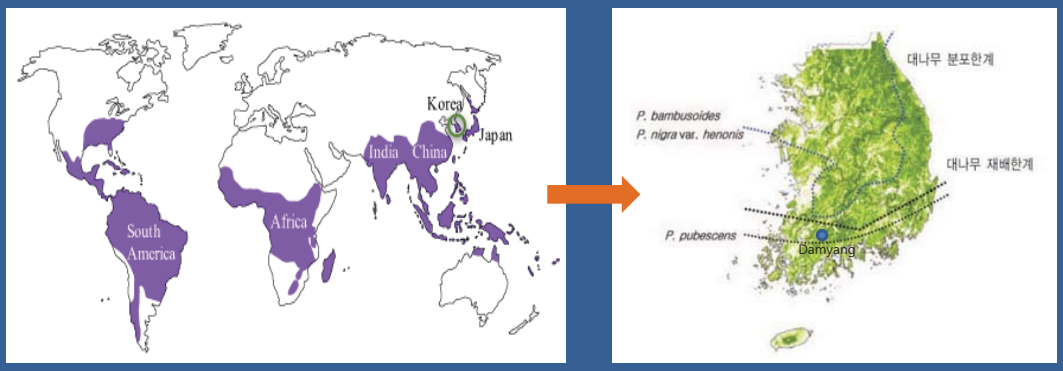
3. Various habitats of Damyang Bamboo
4. Four distinctive seasonal landscape of Damyang Bamboo-field

1. Damyang, the biggest bamboo cultivation area of Korean Peninsula

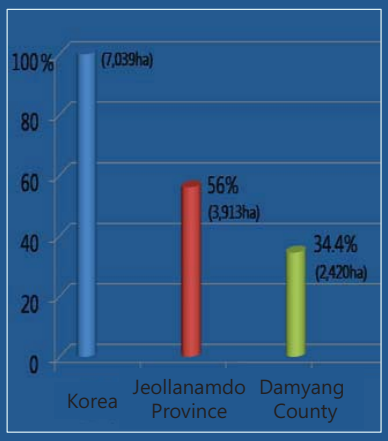
- Ideal climate for bamboo cultivation
  - Annual average temperature: 14.2℃
  - Annual precipitation: 1366mm
- Rich soil area surrounded by windshield mountains and Youngsan River



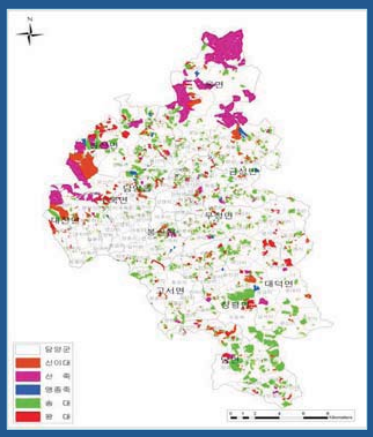
<Global Bamboo Distribution and Bamboo-field Boundary in Korea>

□ Current status of Damyang Bamboo-field

- Distribution of bamboo village: 351 villages in Damyang from national total of 354
- Distribution Bamboo tree: 2,420ha
  - 34.4%(National level 7,039ha) or 61.9%(Jeollanamdo Province 3,913ha)
  - Species: *Phyllostachys bambusoides* Sieb. Et Zucc(352ha),
    Phyllostachys nigra var. *henonis* Stapf(871ha),
    Phyllostachys pubescens Mazel(93ha), others(1104ha)



<Damyang Bamboo-forest distribution against Korean in ratio>


<Damyang Bamboo-forest distribution>

2. Damyang Bamboo with half millenium history

- Kings gifts from Damyang included *Phyllostachys bambusoides* Sieb. Et Zucc, *Phyllostachys nigra (Lodd.)* Munro Zuccr, and arrow shaft per *The Annals of Sejong*(1454)
  - Bamboo industry is among 3 major industries in Damyang(rice, barley) for 500 years.

□ Bamboo history built on Damyang Bamboo-field

- Home of bamboo craft and the major cultivation area of bamboo, Damyang
  - Damyang became Home of Bamboo in Joseon Dynasty for flexibility and spalling capability
  - Government of Joseon Dynasty assigned Masters for supervision of bamboo fan production
  - Exported spinning wheel, needle case, bamboo mat, basket to Manchuria and Mongol
- Golden Ear of Damyang craft continued till 1970s
  - 7,000 household(30%) or 20,000 people involved in craft or bamboo-forest management
- Regain the glory of Damyang bamboo craft in new industry condition
  - Designate Bamboo Masters from levels of nation, region and local for continuous management and succession of skills






3. Various habitats of Damyang Bamboo

- Organism rich and shaded Bamboo-field with abundant birds and mammal

- Ecological repository with distinctive flora and fauna per the age of bamboo-field
- Mammal(12 species) birds(23), amphibian/reptile(4) mushroom(108)

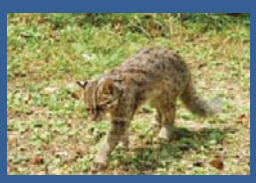





- Damyang Wetland(980,000㎡) around Bamboo-fields

- Birds(58 species), mammal(7), fish(48) and rare plant: *Phragmites japonica*
- Endangered species: hawk, wildcat, otter, *Charadrius placidus*
- Landscape of bamboo-field sets bed form for various wetland flora



□ Ecosystem of Damyang Bamboo

- Bamboo-fields in valley area have solved water supply in dry season
  - Bamboo releases water in dry season and forms puddle in the lower area





- Environmental species Bamboo responses to climate change effectively
  - Carbon dioxide absorbed from Bamboo-field: 29.34 ton/ 1 ha (3.8 times higher than pines)
  - Oxygen emission rate: 35% higher than other species
  - Annual biomass production: 16 ton/1 ha(7.7 times higher than pines)

4. Four distinctive seasonal landscape of Damyang Bamboo













Ⅱ. Bamboo Raises Damyang

1. Bamboo referred as 'Money Tree', Bamboo-field as 'Field of Real Gold'
2. Knowledge system and skills of Damyang Bamboo Agrosystem
3. Bamboo aroma filled culture and social atmosphere of Damyang

Bamboo Raises Damyang

"Golden field"

Yesterday
- Bamboo tree
- Bamboo shoot
- Bamboo craft

Today
- Eco-friend farming
- Tourism industry
- Food industry
- New bamboo industry

Tomorrow
- Eco-friend farming + the 6th industry
- Expansion of new bamboo industry

1. Bamboo referred as 'Money Tree', Bamboo-field as 'Golden Field'

- Bamboo-field with 5 times of added value per production cost
  - Primary item: Bamboo tree, bamboo shoot, sap, leaf, bamboo sheath
  - Composite culturing of special species and medicinal species of Jungno tea, *Broadleaf Liriope* and *Lycium barbarum*

⇒ Saenggeumbat or golden field is another title for a Bamboo-field, referring the gold culturing field.



☐ Bamboo craft and Bamboo market

- Higher demand of chemical-free bamboo craft vs. general interest decrease
  -Chungjuk Market: the only Bamboo Craft Market of Korea
- Per national yield rate index: 70% of Wonjuk Bamboo
- Sale volume(2014): Bamboo tree - $750,000(6 business), Craft - $6.7 million(28 business), Processed item - $19.8 billion(30 business)






☐ Bamboo shoot brings higher income for farming household

- Bamboo shoot contains various nutritious components and special fiber for growth speed
- Annual yield rate of bamboo shoot: 24,000ton (60% of Korea),
  Sale volume: $30 million($1:1200won applied)
- Estimated annual sales volume of processed fresh bamboo shoot $90 million from 7,200 ton(30% of gross yield amt)

☐ Various food culture with bamboo

- Jungno tea(180ha), medicinal /special crop, edible mushroom(24 kind)
- Bamboo stem: rice, bbq, wine, salt baking
  Bamboo leaf: tea, noodle, tofu, liquor, taffy, Korean traditional sweets
  Bamboo shoot: sashimi, bbq, chilled bamboo shoot mix, kimchi, bean paste
- 27 bamboo menu earned $6.4 million($1:1200won applied) in 2014







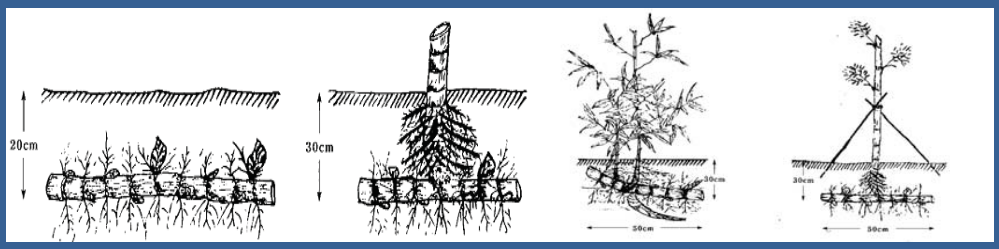



2. Knowledge system and skills of Damyang Bamboo Agrosystem

☐ Cultivation skill of Damyang Bamboo

- Ideal field: + average temperature 10℃, precipitation +1,000mm
  - Sandy soil, min depth of 60cm, less wind and north-eastward direction
- Management: no interruption to produce bamboo shoot and materials
  - Utilize rice husks for evaporation from the forest
- Plant : Feb to Mar and complete before May.
  Harvest season: different per species

☐ Method of Bamboo-field building



Whip鞭近　Root pillar近柱　Bamboo sprout竹苗　Mother bamboo母竹

☐ Farming skills, utilizing bamboo

- Farming machinery and tools
- Utilization of byproduct to improve yield rate
  - Traditional soil enrichment technique, utilizing byproducts
  - Bamboo vinegar
    : bamboo sap is captured with chilled smoke when burnt Bamboo
    : Sterilization, insecticide, growth rate improvement
    : Bamboo vinegar, strawberry, rice are utilized for livestock product
  - Bamboo charcoal
    : excellent for deodorization, removal of metals, water purification and anti-microbial effect
    : Various application for soil improvement and agricultural adsorbent



3. Bamboo aroma filled culture and social atmosphere of Damyang

☐ Community culture

- Village level *Hyangyak* rule managed farmers' cooperation and maintenance of Bamboo-field
- In slow winter season, farmers added extra income, sharing divided work
  - Divided work for craft: one who cuts bamboo, one who ties and one who marks the work, etc
  - Community culture in the ritual ceremony and *Hwanggeumdeul* work song





☐ Bamboo for construction/landscape and living gadgets





☐ Activities of bamboo organizations

- Damyang Bamboo Craft Cooperatives, Korea Bamboo Development Association, Damyang Gungno-tee Association, Damyang Bamboo shoot Producer Association, Bamboo Culture Research Association, Damyang County Handicraftsman Association
- Cooperatives of KIAHS Damyang Bamboo-tree
- Korea Bamboo Museum, Bamboo Resource Research Institute of Damyang











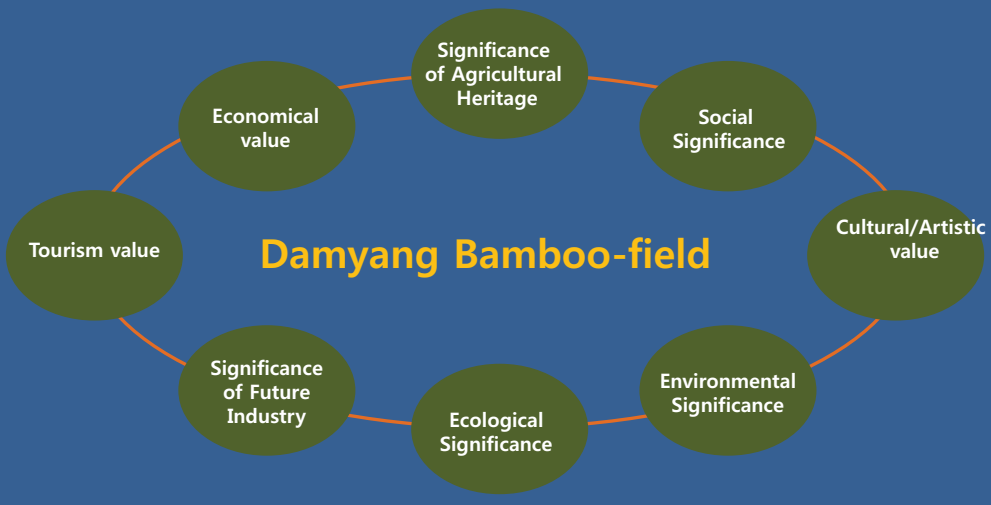

Ⅲ. Bamboo Oriented Future of Damyang

1. Modern significance of Damyang Bamboo Agrosystem
2. Threats and challenges for Damyang Bamboo
3. Efforts for FAO GIAHS acknowledgement and designation
4. Plans for preservation/management of Damyang Bamboo Agrosystem

1. Modern significance of Damyang Bamboo Agrosystem

• Further utilization of Damyang Bamboo-field is in demand for various scope of ecology, environment, culture, art, medicinal purpose, industry and tourism

- Environmental species against climate change/ cultural art material, expressing artist's constancy and holy/various medicinal effects from amino acid, fatty acid and inorganic components
- Utilized in everyday life of food, advanced bio, food, textile, construction and landscape in addition to bamboo craft



☐ New Bamboo Industry of Damyang County

- Home of Korean Bamboo, Damyang is going thru transition period from traditional Bamboo industry to New Industry with following detail.
- Bio Industry: Utilize Bamboo leaf, stem, root, vinegar, sap, charcoal
  - Outstanding outcome in eco-friendly farming environment, food and medicinal area
  - Medicinal effect of Bamboo is applied for health-food
- Food Industry: Utilize for Bamboo leaf tea and various drinks
- Textile Industry: Ongoing studies for bamboo utilization on building interiors
  - Biggest Bamboo charcoal production facility situated in Damyang
  - Improved applications scope of bamboo with soju filtration and bamboo charcoal for floorings
- Bright future for Bamboo New Industry: large corporations partake in researches in semiconductor, biotechnology, health food and construction material area

2. Threats and challenges for Damyang Bamboo

☐ Threats

- Standstill status of Bamboo-field size
- Disappearance of human resources in bamboo field
- Bamboo-field damages due to development projects

☐ Challenges

- Expand the bamboo-fields
- Propelling the bamboo related 6th industry

Primary industry	• Systematic management of Bamboo-field for production increase • Produce bamboo products of native plants and fungus
Secondary industry	• Processed food production from bamboo trees and bamboo shoot • Expand the utilization of bamboo vinegar, charcoal, etc • Development expansion of processed food and product
Tertiary industry	• Vitalize bamboo craft • Expand bamboo tourism resource thru Bamboo Theme Park • Multilateral application in tourism sector thru Bamboo Festival and International Bamboo Exhibition, etc

- Expand environment-friend agriculture, utilizing bamboo-field resources
- Succession and development of bamboo crafts

3. Efforts for FAO GIAHS acknowledgement and designation

☐ **Designation of Korea Important Agricultural Heritage System(KIAHS) Damyang Bamboo Agrosystem in June 2014**

- Background - High level of contribution in local economy development
  - Plantation. establishing preservation/management strategy and multilateral utilizations means
- Further management direction
  - Establish and subsidize systematic preservation/management strategy
  - Aims to develop rural area and income increase for farmers

☐ **Juknokwon Bambooforest Garden**

- 22.5ha size landmark for bamboo-forest eco-tourism Damyang
- Improves value of Bamboo-forest and set the model of management/cultivation of Bamboo

☐ **Korea Bamboo-tree Museum**

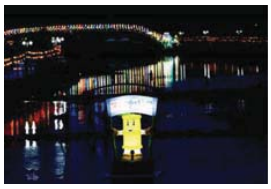
- Opened in 1981 for conservation, exhibition, demonstration, selling and direct hands on experience the Bamboo tree tourism resource





☐ **Development of Bamboo tourism contents**

- The 18th Damyang Bamboo Festival: launched in 1999


- Damyang International Bamboo Exhibition

- 1.04 million visitors enjoyed the 45 day event from September 17, 2015
- Held the 10th, International Bamboo Forum(320 experts from 40 countries)

→ Promoted concept 'Damyang = Bamboo' and significance of economy/ ecology

→ Improved regional value 'Eco City Damyang, Environment-friendly City Damyang!'





☐ Bamboo Research Center

- Target: effective management of Bamboo-field and systematic industry
- Current status: field researchers searches for the advanced bio-industry base building
  : large scale thinning project for neglected bamboo-forests from 2010
  : 26 ongoing projects to develop items from Bamboo leaf

☐ Bamboo-field preservation project with local residents

- Bamboo shoot localization, collaborating with Bamboo Production Project Group
- Resume *Jukchwiil Day*
- Promote bamboo value for students with 'Jukjuk Dream Day'(November 11) Festival
- 'KIAHS Damyang Bamboo Cooperatives' to promote high value added production
- Multilateral efforts of resident capacity building workshop and guide book provision



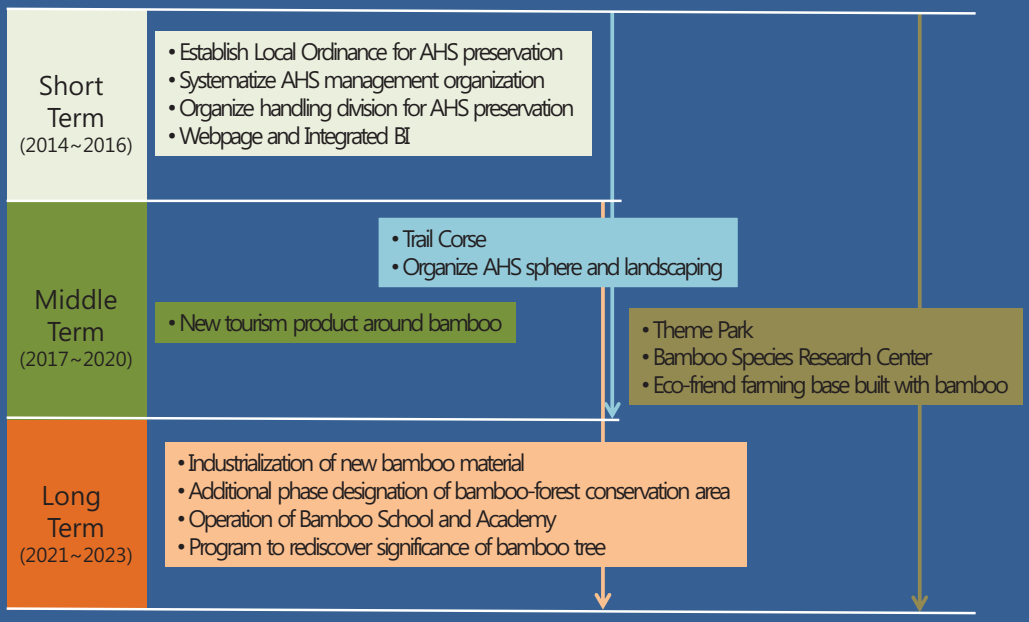



4. Plans for preservation and management of Damyang Bamboo Agrosystem

Vision	**Vitalize regional economy and realize Eco-tourism city Damyang thru preservation/management/utilization of Damyang Bamboo-fields**
Target	**Sustainable preservation and management system for AHS & Systematic utilization for eco-tourism city establishment**
Project	1. To establish AHS preservation and management system 2. To expand acknowledgement level for Damyang Bamboo-field 3. To propel the sound utilization strategy for Damyang Bamboo-field

Core strategy	Action plan
1. Heritage area maintenance and utilization base establishment	• Organize AHS sphere and landscaping • Trail and Theme Park • Establish Local Ordinance for AHS preservation and management
2. Systematize AHS management organization	• Systemize administrative division for AHS preservation and management • Organize handling division for AHS preservation, management and utilization
3. Establish education system on AHS	• Operation of Bamboo School and Academy • Program to rediscover significance of bamboo
4. 3D promotion for AHS	• Webpage and Integrated BI • Brochure and booklets on AHS
5. The 6th Industrialization of bamboo related scope	• Industrialization of new bamboo material • Eco-friend farming base built with bamboo
6. Improve the significance of AHS	• New tourism product around bamboo • Bamboo Species Research Center • Additional phase designation of bamboo-field conservation area

□ Phased Plans for preservation and management of Damyang Bamboo Agrosystem



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Thank you!

Special Session 1

『Monitoring and Evaluation of Korea's Important Agricultural Heritage Systems(KIAHS) in Korea』

Mr. Park, Yoon ho(Deputy Director, Korea Rural Community Corporation)



Monitoring and Evaluation of KIAHS in Korea

2016. 6

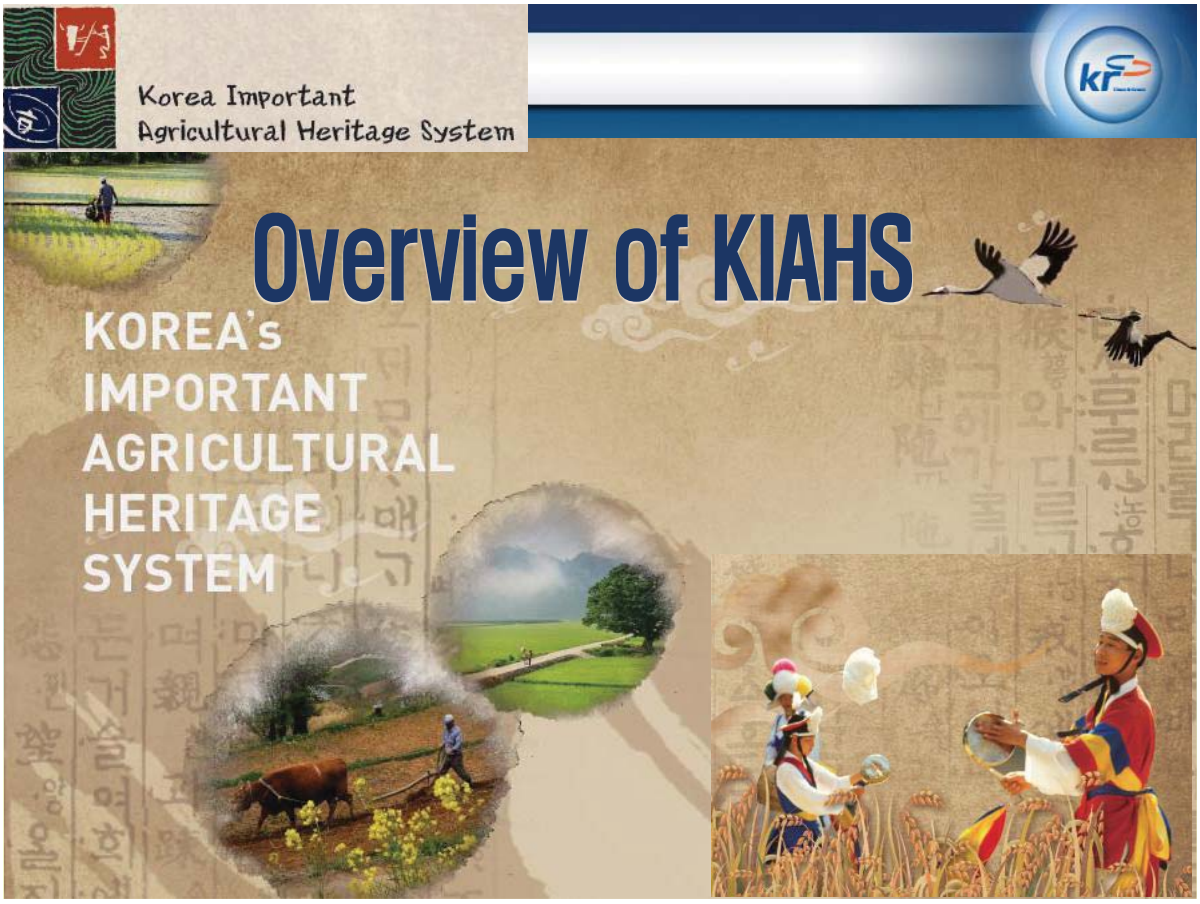
PARK, YOON HO
KOREA RURAL COMMUNITY CORPORATION

Contents

1. Overview of KIAHS

2. M & E of KIAHS

3. Concluding Remarks



Progress of KIAHS

- MAFRA (Ministry of Agriculture, Food and Rural Affairs) launched the KIAHS(Korea Important Agricultural Heritage systems) in March 2012 to conserve and utilize the heritage resources.

- The first two KIAHS sites(Cheongsando and Jeju) are designated by MAFRA in January 2013.

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Progress of KIAHS

- **2011**

June : First paper on agricultural heritages released

- **2012**

Feb.-Dec. : Conducting research on KIAHS funded by MAFRA
"A study on the establishment of designation criteria for agricultural heritage and management system" by RRI

March : Announcement of introduction of KIAHS

July : Accepting applications for KIAHS(64 sites)

Oct. : Document screening(20 sites selected from 64 sites)

Nov. : Field survey(20 sites)

Dec. : Notification of "management and designation criteria of KIAHS" (Notification NO. 2012-285 of MAFRA)

5

Progress of KIAHS

- **2013**

Jan. : 2 KIAHS sites have been designated by deliberation committee of MAFRA(13 sites reviewed)

- Gudeuljangnon in Cheongsando island
- Jeju Batdam

May : Presentation at GIAHS international forum in Japan

Submit applications for GIAHS

- **2014**

April : **2 KIAHS sites designated as GIAHS**

Nov. : KIAHS Second batch 2 sites (Gurye, Damyang) designated

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Progress of KIAHS

- **2015**

Feb. : Legal basis of KIAHS and KIFHS was amended

- "Special Act on the Promotion of Rural Regional Development and Improving the Quality of Lives for Farmers and Fishermen"
- Article 30 - 2 (KIAHS), Article 30 - 3 (KIFHS)

April : **Third batch of 2 sites designated as KIAHS**

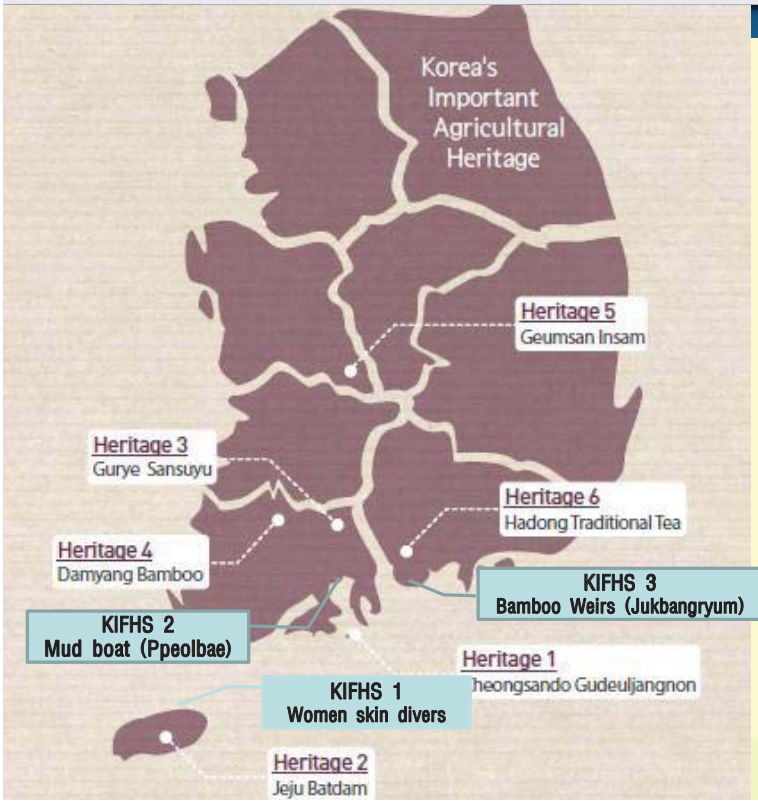
Dec. : MOF(Ministry of Oceans and Fisheries) introduced **KIFHS**

- 3 KIFHS sites designated

- **2016**

Feb.-Dec. : Research project on KIAHS M&E system

KIAHS designation



- Cheollanam-do
  - 2 KIAHS, 2 KIFHS
- Jeju-do
  - 1 KIAHS, 1 KIFHS
- Gyeongsangnam-do
  - 1 KIAHS, 1 KIFHS
- Chungcheongnam-do
  - 1 KIAHS

KIAHS designation

Year	No	Location	Title	비고
2013	1	Wando County	Cheonsando Gudeuljangnon - Traditional irrigation system	First Batch
2013	2	Jeju Province	Jeju Batdam agricultural system	First Batch
2014	3	Gurye County	Gurye Sansuyu (Cornus officinalis) agricultural system	Second Batch
2014	4	Damyang County	Damyang Bamboo forest system	Second Batch
2015	5	Geunsam County	Guemsan Insam(Ginseng) agricultural system	Third Batch
2015	6	Hadong County	Hadong Traditional Tea plantation system	Third Batch

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KIFHS designation

YEAR	NO	LOCATION	TITLE
2015	1	Jeju Province	해녀어업 Women skin divers in Jeju Island
2015	2	Bosung County	뻘배어업 Mud bout(Ppeolbae) in Bosung-gun
2015	3	Namhae County	죽방렴어업 Traditional bamboo Weirs(Jukbangryum) in Namhae-gun

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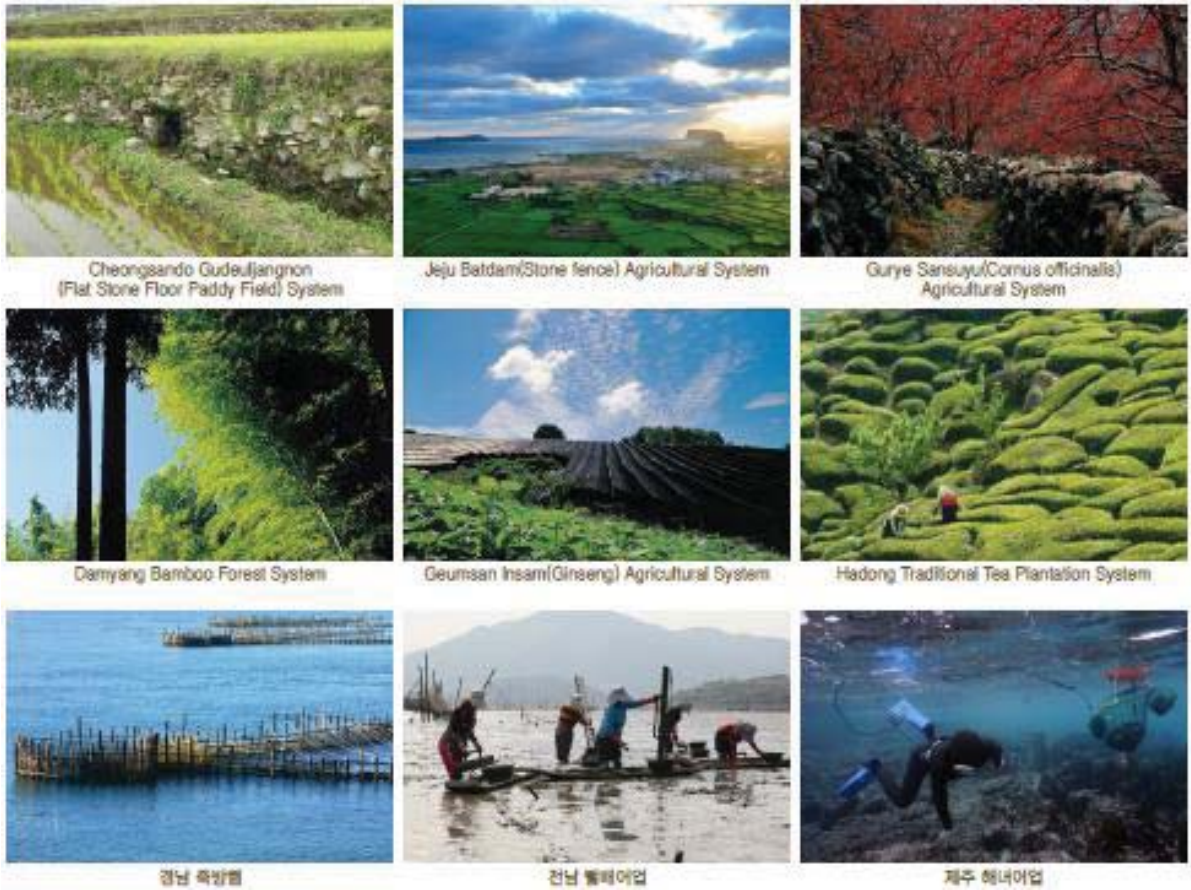

Monitoring and Evaluation of KIAHS

Monitoring of KIAHS

- Monitoring and Evaluation of KIAHS focus on the Multifunctional resource utilization projects.

○ **Budget support for the conservation and management of KIAHS sites by MAFRA and MOF.**

- $1.5million per KIAHS site for 3 years (70% by MAFRA, 30% by the local government)
- Multifunctional resource utilization project by MAFRA

- $0.7million per KIFHS site for 3 years (70% by MOF, 30% by the local government)
- Multifunctional resource utilization project of the fishery settlement by MOF

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Monitoring of KIAHS

- Conservation action plan for KIAHS sites
  - Action plan for dynamic conservation of KIAHS
- Monitoring of KIAHS sites are based on the Conservation Action plan and Comprehensive projects plan of each sites
- Every KIAHS site have to make conservation action plan within 1 year after designated as a KIAHS

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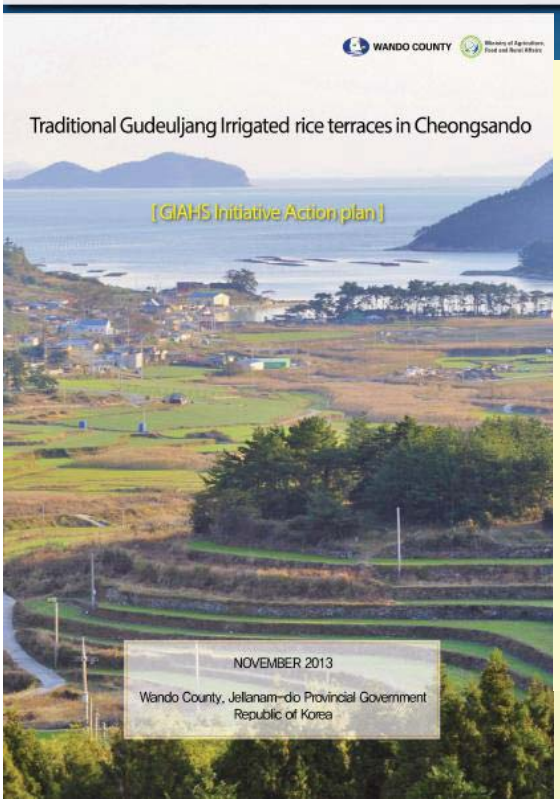
Monitoring of KIAHS



- Cheonsando Gudeuljang GIAHS Initiative Action Plan and Conservation Action plan are put in place
- According to the plans, Multifunctional resource utilization project was implemented from 2013 to 2015

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Monitoring of KIAHS

- Annual periodic inspection for the Multifunctional resource utilization projects implemented by MAFRA & KRC
- The first monitoring for 2 KIAHS sites (Cheongsando, Jejudo) was implemented in Nov. 2014.
- 4 KIAHS sites(Damyang, Kurye, Hadong, Keumsan) was implemented in April 2016.

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Monitoring of KIAHS

ESTABLISHMENT OF CONSERVATION ACTION PLAN

- CONSERVATION MASTER PLAN
- RESOURCE SURVEY AND INVESTIGATION OF THE SURFACE

ENVIRONMENT IMPROVEMENT

- DEVELOPMENT OF EXPERIENCE CENTER
- TRAIL MAINTENANCE
- CONSERVATION AND MANAGEMENT SYSTEM

VALUE ENHANCING

- BRAND DEVELOPMENT
- RICE PADDY OWNERSHIP SYSTEM
- ORGANIZE CONSERVATION COUNCIL



청산도 구들장논

청산도 구들장논
CHEONGSANDO GUDEULJANG RICE PADDY

Monitoring of KIAHS

ESTABLISHMENT OF CONSERVATION ACTION PLAN

- CONSERVATION MASTER PLAN
- FIELD SURVEY AND ECOLOGICAL MONITORING

ENVIRONMENT IMPROVEMENT

- RESTORATION OF BATDAM AND TRAIL COURCE
- DEVELOPMENT OF EXPERIENCE THEME PARK
- INSTALL THE OBSERVATORY FOR BATDAM

VALUE ENHANCING

- OPERATION OF THE STONE CULTURE ACADEMY
- CULTIVATE A TALENTED PERSON FOR BATDAM
- JEJU BATDAM FESTIVALL



Monitoring of KIAHS

< Two-Track System for M &E of KIAHS >

- Annual periodic inspection
  - Once or twice in a year

- Final evaluation of the project after the completion of the project
  - At the 4th year after the designation as a KIAHS

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Monitoring of KIAHS

- Field inspection items
  - Budget execution
  - Data-base (RAISE system) building up
  - The changes of the designated area as a KIAHS
  - The degree the participations of the residents
  - The changes of the numbers of visitor
  - Capacity building and education
  - Preparations for the GIAHS

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Monitoring of KIAHS

- The final Evaluation about the results of Multifunctional resource utilization projects of 2 KIAHS sites(Cheonsando & Jejudo) will be implemented in Oct. 2016
  - The projects operated from 2013 to 2015 for 3 years
- KIAHS selection criteria could be adopted as a monitoring indicators after designated as a KIAHS

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Criteria for KIAHS designation

Significance of heritage	Historic relevance
	Representativeness
	Characteristics
Partnership	Cooperation
	Participation
Effectiveness	Branding
	Revitalization and Biodiversity

KIAHS Selection Criteria

Values of Agricultural Heritages	Historical Relevance
	Agricultural Production and Livelihood
	Agricultural Knowledge and Technologies
	Traditional Agri-Culture
	Remarkable Landscape
	Biodiversity and Sustainability
Community Participation and Collaboration with Local Government	

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KIFHS Selection Criteria

Features of the Fisheries heritages	Food and Livelihood
	Biodiversity
	Knowledge Systems
	Traditional Culture
	Remarkable Landscape
Historical Relevance	
Locality	Policy of Local Government
	Awareness
	Sustainability
	Enhancing Values

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Monitoring Indicators

❑ Current Monitoring indicators

- The number of visitors
- Budget execution of the project
- Community Participation
- Establishment of data-base(ecological survey, cultural inheritance, land use and land owner using GIS…)
- Training of heritage commentator
- Publicity, promotion

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Monitoring & Evaluation

❑ Monitoring system for Rural development projects





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Monitoring & Evaluation Indicators

❑ Need to Review the following contents ;

- Satisfaction Degrees of Residents
- Capacity Building of Stakeholders and Residents
- Biodiversity
- Agricultural Production
- Implementation of conservation action plan
- Mid-Long term Outcome factors after finished the projects

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Concluding Remarks

Concluding remarks

- Recently utilization of agricultural heritage systems is more and more important for the rural development and revitalizing of local community through GIAHS and KIAHS dynamic conservation.
- Monitoring and evaluation system should be adopted in a near future for the sound and sustainable conservation and management of KIAHS.
- Research project for KIAHS monitoring system is ongoing by Rural Research Institute, KRC.
  - Funded by MAFRA

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Concluding remarks

- Monitoring of KIAHS sites should be focus on balance of various aspects of AHS in Korea
  - Need to expand the current general indicators
- Biodiversity, Sustainability, Economic development, Ecological environment, Cultural inheritances are should be considered as a key indicators for the monitoring system of KIAHS.

  - The current monitoring and evaluation system of rural development projects in Korea are biased to physical indicators and restricted to a few indicators.

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Concluding remarks

- Long term approach is needed for KIAHS monitoring system
  - ongoing maintenance and monitoring after completion of the projects
- Basic principles and directions for KIAHS monitoring
  - Establishment of residents participated monitoring system
  - Construct information sharing system
  - Balance between various criteria factors

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pakyoonho@naver.com

Special Session 2

『The monitoring by the expert was important to make Kunisaki Peninsula Usa GIAHS action plan a more effective plan』

Mr. Hiroaki Hayashi (Chairman, Council for the Promotion of GIAHS in Kunisaki Peninsula Usa)

The monitoring by the expert was important to make Kunisaki Peninsula Usa Globally Important Agricultural Heritage Systems' action plan a more effective plan

3rd Conference of ERAHS
Guemsan County,
Chungcheongnam-do Province, Korea
13 -16 June 2016

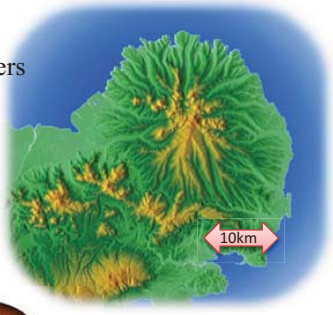
Hiroaki HAYASHI
Chairman of council for the promotion of Globally Important Agricultural Heritage Systems in Kunisaki Peninsula Usa Area

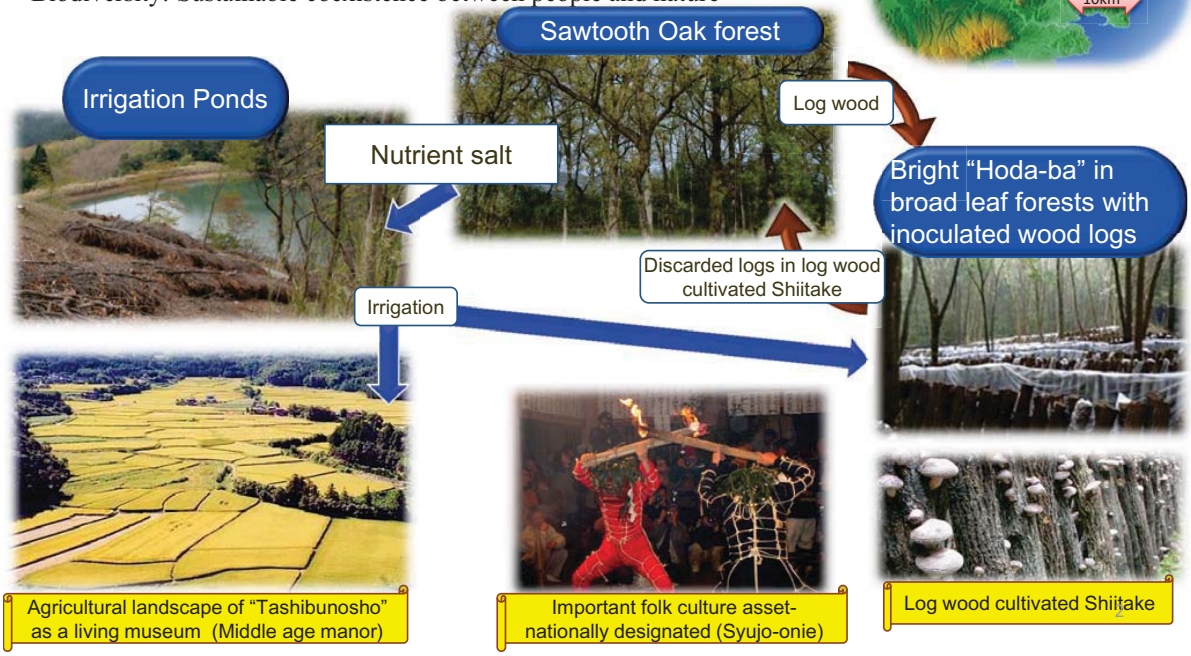
国東半島宇佐地域世界農業遺産 Kunisaki Peninsula Usa GIAHS

1

Characteristics of Kunisaki GIAHS

- ◆Geographical: Round peninsula with highly porous volcanic soil and steep rivers
- ◆Climatic: Warm temperate and low rainfall in the winter season
- ◆Historical: Fusing Shinto and Buddhist philosophies flourished
- ◆Landscape: Paddy fields, Irrigation ponds and Sawtooth Oak forests
- ◆Products: Shiitake mushroom, Shichitoui, Rice etc.
- ◆Biodiversity: Sustainable coexistence between people and nature

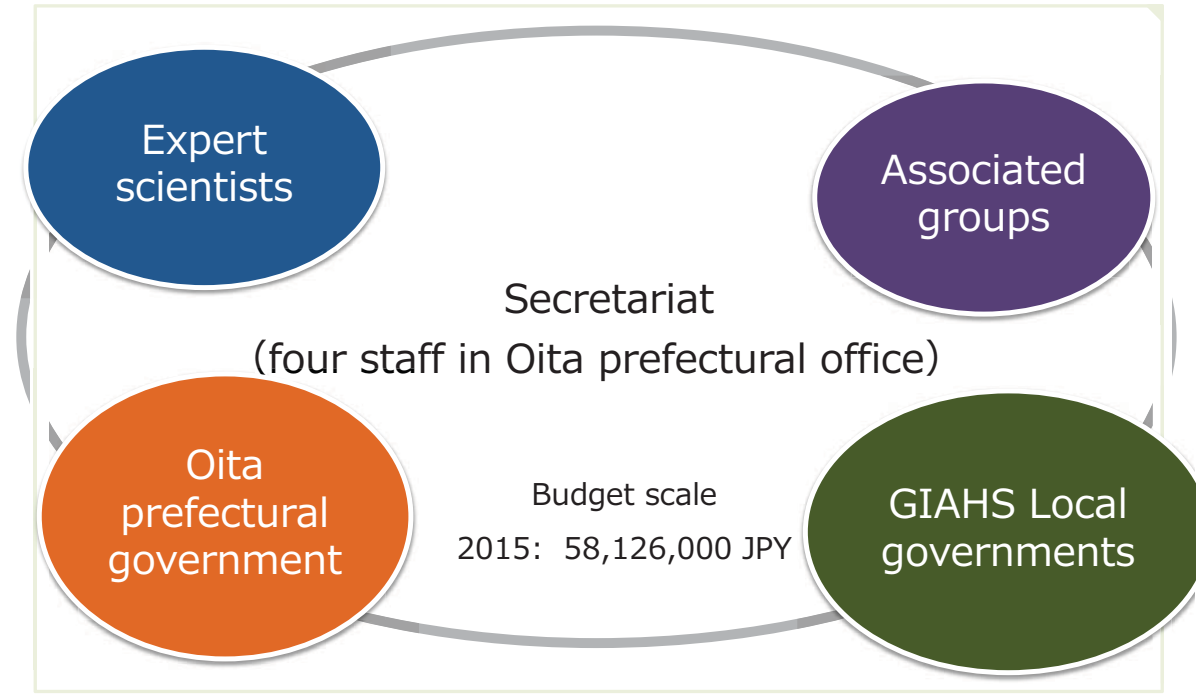




Coppicing of Sawtooth Oaks makes rich forests and rich products.



Council for the promotion of Kunisaki Peninsula Usa GIAHS



Financial status in our GIAHS (2015)

Japanese Government Subsidy

Kunisaki-Usa GIAHS Fund
(Five financial institutions in Oita and Oita Pref. Gov.)
Total capital:50 million US $

Council for the promotion of Kunisaki GIAHS
(4 city, 1 town, 1 village and Oita Pref. Gov.)

0.43 million US $/y

Increasing supports from the eco-friendly companies

Expected Social and Ecological Benefits of the GIAHS

1. Feasibility of managing traditional cultural capital in the region
   ① Efforts to manage Sawtooth Oak forests and irrigation ponds sustainably
   ② Continuous system of managing associated agricultural systems into the future
   ③ Revitalization of agricultural practices and ecosystem maintenance
2. More interaction between urban and rural units
   ① Increase in the potential of green tourism
   ② Understanding about rural life and increase in returnee migrants
3. Strengthening local branding
   ① Dried log wood cultivated Shiitake into global identity
   ② Revitalization of farmers, foresters and fishermen through a new industrialization

Promoting interaction with other GIAHS sites and researchers
→Further activation of this area

Action Plan

GIAHS: Kunisaki Peninsula Usa integrated forestry, agriculture and fisheries system

To pass traditional agriculture down to future generations

Regional revitalization by using GIAHS brand

To pass traditional agriculture down to future generations

- Breeding of confidence and pride for the local community
- Increase agricultural leaders resources development and build system of stable production
- Maintenance of local environment for biological diversity
- Conservation of local culture connected with agriculture

a



b



c



d



Posterity education in Kunisaki Peninsula Usa area

a: Teaching materials for primary school children. English version will be also used for visitors from foreign countries. b: Class scenery at the junior high school. c: Presentation at the junior high school Summit. d: Direct dialogue of a farmer and high school students



Training program of the traditional industry engineer (for Shichitoui tatami industry)

Exchange programs for female farmers between Kunisaki Peninsula Usa and Aso GIAHS





Wild animal damage control



Damaged Sawtooth Oak stump



Growth density investigation



Sprouts protected by a simple net from deer feeding damagep

Supporting the community support project and the culture succession support project



どぶろく祭り／醸造用樽を購



御田植祭(奈多宮)／牛（顔部分）を新調



Hazetori Uta

Regional revitalization by using GIAHS brand

- Promoting branding of local products
- Expansion of urban-rural personnel exchanges
- Promoting activities for local revitalization
- Sending the local information both in and outside Japan

Promoting GIAHS branding of local products

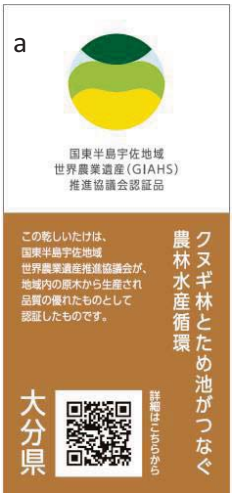


Shichitoui



Rice

a



b



Emblem of Kunisaki Peninsula Usa GIAHS brands for dried log wood cultivated Shiitake-mushroom
Symbol mark shows Sawtooth Oak forest (dark green), irrigation pond (light blue) and terraced paddy field (yellowish green and yellow) b: Packed dried Shiitake mushroom with emblem

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国東半島宇佐地域世界農業遺産 Kunisaki Peninsula Usa GIAHS

Voluntary regional activation









Photo by K. Yamamoto

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国東半島宇佐地域世界農業遺産 Kunisaki Peninsula Usa GIAHS



GIAHS monitoring in Kunisaki Peninsula Usa area by the expert meeting

a:Presentation of self-evaluation of the action plan by the Council. b:Field survey at a irrigation pond. c:Direct dialogue with stakeholders and expert meeting members at Shichitoui Museum. d: Final meeting by the member which discussed the implementation of the action plan and advised to our council, by public open hearing

Results of monitoring by the expert meeting (1)

Comprehensive advice items

1: Investigate more scientifically about Kunisaki GIAHS's circulation of water and nutrients from Sawtooth Oak tree forests to Seto inland sea based on the agriculture, forestry and fisheries

2: Activate regional economy by developing rural tourisms based on a daily production activity of the unique agriculture, forestry and fisheries

3: Bring up strong leaders who can contribute to the development of the GIAHS area through well-organized education systems which already established in this area;

4: Twin with other GIAHS site in neighboring countries, just like with Aso GIAHS site where good interchange has already begun;

5: Control wild animal damage and bamboo invasion based on scientific evidences and reevaluate flesh of wild animals hunted and bamboo trees as resources to restore Satoyama functions.

Results of monitoring by the expert meeting (2)

Advice items based on authorized standard for GIAHS application

1(Food and Livelihood Security): Evaluate the branding using "Regional Organization' Trademark System" for dried log wood cultivated Shiitake and Shichitoui products and recommend the rural tourism based on a new idea using more local resources.

2(Biodiversity and Ecosystem Functions): Evaluate enlightenment activity for the conservation of GIAHS and biodiversity, and recommend more scientific researches and more successful measures for controlling wild animal damage.

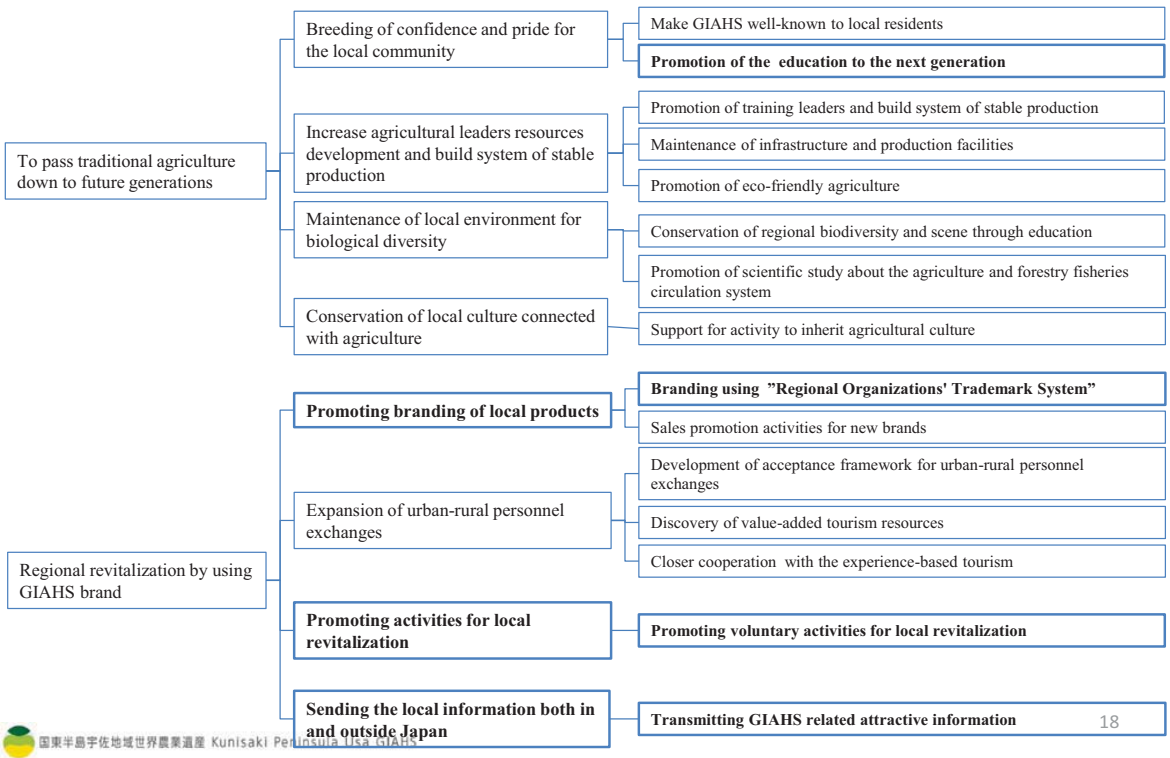
3(Knowledge Systems and Adapted Techniques): Eliminate a labor shortage for keeping social activity and social infrastructure, such as irrigation ponds and paddy fields.

4(Culture, Values and Social Structures): Appreciate that many folk entertainments and traditional local cooking are succeeded by the local inhabitants who are activated by GIAHS authorization.

5(Remarkable Landscape and Water Resource Management Features): Appreciate that Satoyama scene is kept in good condition, especially in Tashibunosyo, where small river, paddy fields, farmer's house, forests and mountain range are in one unit.

Kunisaki Peninsula Usa GIAHS Action Plan (Revised 2015)

Items written in bold-face are added to the original action plan as an important plan.



More effective action plan

GIAHS: Kunisaki Peninsula Usa integrated forestry, agriculture and fisheries system

To pass traditional agriculture down to future generations

Regional revitalization by using GIAHS brand



No.1 Shiitake farmer (Kunisaki City)



Inspection tour from Korea



Revival and restoration of traditional Shichitoui industry (Kitsuki City)

国東半島宇佐地域世界農業遺産 Kunisaki Peninsula Usa GIAHS

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Special Session 3

『Comparative Study on Conservation of Agricultural Heritage Systems among China, Japan and Korea』

Mr. Akira Nagata (Senior Programme Coordinator, United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS))

3rd Conference of East Asia Research Association for Agricultural Heritage Systems (ERAHS)
13 -16 June 2016, Guemsan County, Chungcheongnam-do Province, Korea

Comparative Study on Conservation of Agricultural Heritage Systems among China, Japan and Korea

Akira Nagata

Senior Programme Coordinator,

United Nations University

Institute for the Advanced Study of Sustainability (UNU-IAS)

nagata@unu.edu

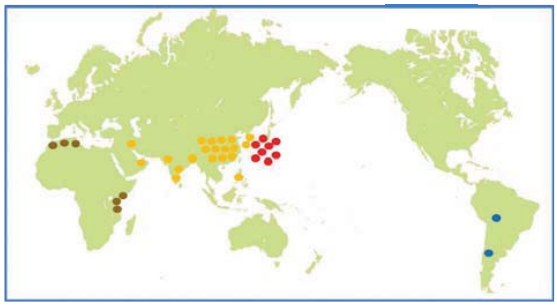
Presentation Based on Research Paper:
YIU Evonne, NAGATA Akira, TAKEUCHI Kazuhiko. Comparative Study on Conservation of Agricultural Heritage Systems in China, Japan and Korea. Journal of Resources and Ecology, 2016, 7 (3): 170-179.

Contents

- GIAHS Sites in Asia
- Comparison of Conservation Policies for Agricultural Heritage Systems among China, Japan and Korea
  - Background of Developments
  - Designation Criteria
  - Application Procedure
  - Implementation Structure
  - Information Accessibility
  - Monitoring System
  - Others
- Future Cooperation

GIAHS Sites in Asia

- 36 sites in 15 countries are designated as GIAHS
- Asia accounts for 72%, while Africa 8%, East & North Africa 14%, Latin America 6%
- China, Japan and Korea account for 58% (China11, Japan 8, Korea 2)



Comparison of Conservation Policies for Agricultural Heritage Systems among China, Japan and Korea

Background of Developments China

- June 2005: “Inaugural Meeting of the Globally Important Agricultural Heritage Systems Project: Rice-Fish Culture System”
- GIAHS designation for China

2005	2010	2011	2012	2013	2014	Total
1	2	1	2	2	3	11

- March 2012: Announced commencement of discovering and exploiting China Nationally Important Agricultural Heritage Systems (China-NIAHS)
- May 2013: The first batch of 19 China-NIAHS was selected
- January 2014: Expert Committee for GIAHS was established
- March 2014: Expert Committee for China-NIAHS was established
- May 2014: The second batch of 20 China-NIAHS was selected
- November 2015: The third batch of 23 China-NIAHS was selected (62 in total)

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1st China-NIAHS



2nd China-NIAHS



3rd China-NIAHS



Background of Developments Japan

- 2009-2010: the United Nations University (UNU) proposed the application for GIAHS designation of Japan's *Satoyama* to FAO GIAHS Secretariat and the Japan Ministry of Agriculture, Forestry and Fisheries(MAFF)
- June 2011: *Satoyama* of Sado (Niigata) and Noto (Ishikawa) were designated as GIAHS for the first designations in Japan
- May 2013: Kakegawa (Shizuoka), Aso (Kumamoto) and Kunisaki (Oita) were designated as GIAHS
- March 2014: GIAHS Experts Meeting was established in MAFF
- December 2015: Nagarakawa (Gifu), Minabe (Wakayama) and Takachiho (Miyazaki) were designated as GIAHS
- April 2016: Japan-NIAHS was established by MAFF

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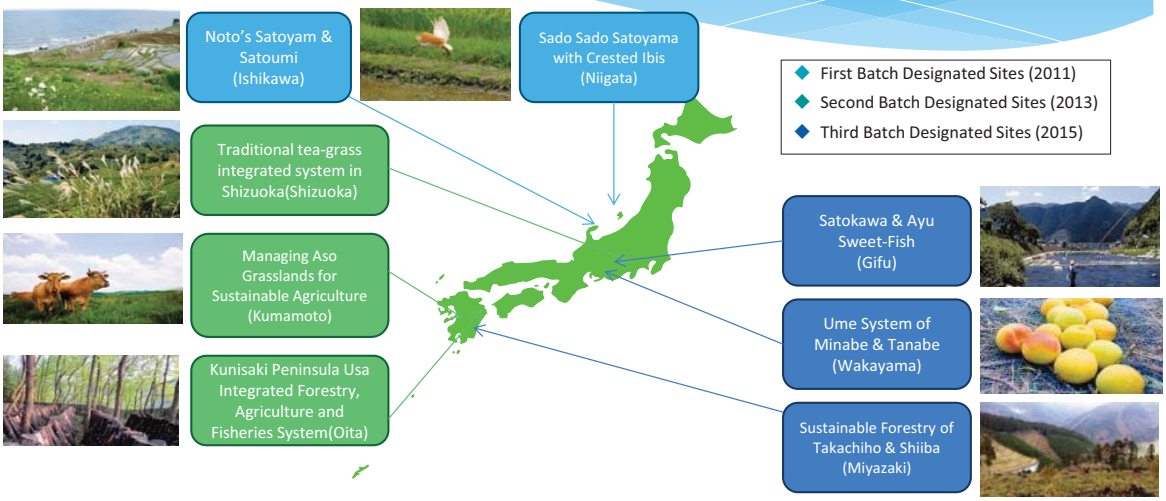
GIAHS Designation in Japan



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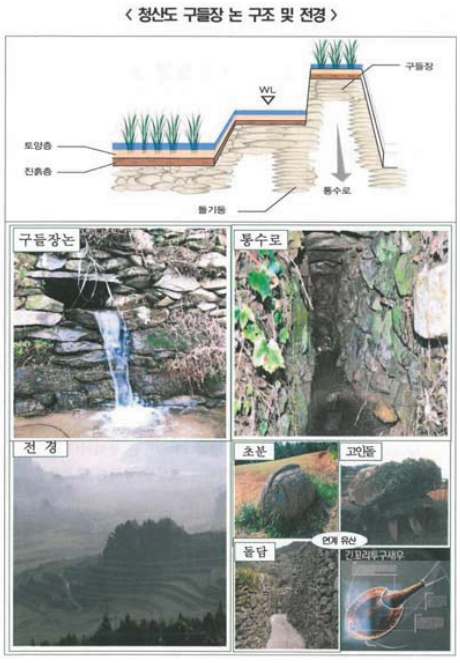
Background of Developments
Korea

- March 2012: Korea Nationally Important Agricultural and Fishery Heritage Systems (Korea-NIAHS) was implemented by Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF)
- January 2013: Cheongsando (South Jeolla) and Jeju (Jeju) were identified as Korea-NIAHS by MIFAFF (April 2014: designated as Korea's first GIAHS)
- June 2014: Gurye and Damyang (South Jeolla) were identified as Korea-NIAHS by Ministry of Agriculture, Food and Rural Affairs (MAFRA)
- March 2015: Geumsan (South Chungcheong) and Hadong (South Gyeongsang) were identified as Korea-NIAHS by MAFRA
- February 2015: Additional article in Act on Better Life of Rural Residents and Rural Development in support of NIAHS & NIFHA was established
- December 2015: Jeju, Boseong (South Jeolla) and Namhae (South Gyeongsang) were officially designated as Korea's first batch of NIFHS by Ministry of Oceans and Fisheries (MOF)

11

Korea-NIAHS (GIAHS Sites)



Cheongsando
Traditional Gudeuljang Irrigated Rice Terraces



Jeju
Batdam Agricultural System

12

Korea-NIAHS (non-GIAHS Sites)



Gurye
Cornelian Cherry Farming

Damyang
Bamboo Field Landscape



Geumsan
Ginseng Farming

Hadong
Traditional Tea Farming

13

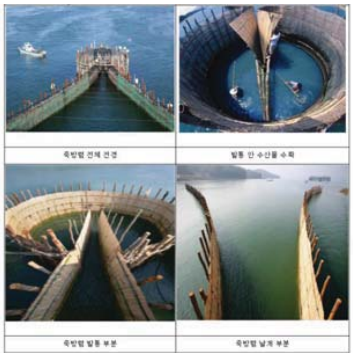
Korean NIFHS (non-GIAHS)



Jeju
Haenyeo Women Divers



Boseong
Mudboat Fishing



Namhae
Jukbangnyeom Fishing

14

Systems Designation Criteria China

Category	Criteria	Features
Basic criteria	Historical criterion	Historical origin, History length:
	System criterion	Substances and products, Ecosystem services, Technical knowledge and system maintenance, Landscape and aesthetics, Spirit and culture
	Persistent criterion	Natural adaptation, Human Development
	Endangered criterion	Trends, Stress factors
Secondary criteria	Demonstration criterion	Participation, Accessibility, Reliability
	Supportability criterion	Organization construction, System Construction, Preparation of Planning

Source："Criteria for China Nationally Important Agricultural Heritage Systems"

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Designation Criteria Japan

- FAO GIAHS Designation Criteria was broken down into several key aspects for more comprehensive assessment

Designation Criteria	Evaluation Perspectives	Evaluation
Characteristic of the proposed GIAHS should include global (or national) importance. Global (or national) importance is a composite criterion, under which the overall value is established of a traditional/historic agricultural system・・・・・・・	❑ Unique in the world and represent Japan・・・・・・・・	
	❑ Traditional and characteristic agriculture and farming method・・・・・・・・	
	❑ FAO 5 key criteria are closely related each other and well balanced・・・・・	
	❑ Appropriate boundary and describe・・・・・・・・・・	

- In addition, optional criteria which take into consideration perspectives from Japan's agriculture include:
  - (i) environmental aspects concerning "Resilience against changes",
  - (ii) social aspects concerning "participation of multiple stakeholders"
  - (iii) economic aspects of "New business models (or sometimes referred to in Japan as "sixth industries")

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Designation Criteria
Korea

Classification	Criteria	Features
Value of Heritage	Historical Value	Formed more than 100 years ago for the agricultural-fishery activities of farmers or fishermen Extent and worth of sustainability into the future
	Representativeness	Representative of the region and field- International, national and regional level of representation Possess remarkable landscape and has tourism, recreation and merchandizing potential
	Characteristics	Possess unique and striking feature in the fields of land use and water resources management etc. - Communal agro-fishery knowledge system and technology - Food or other products from agro-fishery activity - Use of land and water resources and conservation of biodiversity, etc.
Partnership	Cooperation	Existence of maintenance management plan from municipalities and residents indicating their commitment to cost sharing, etc.
	Participation	Active participation and activity by community (including NGO) for the preservation, maintenance and transmission of the heritage
Effectiveness	Branding	Ability to contribute to the improvement of brand value and regional image
	Revitalization & Biodiversity	Ability to contribute to the local economy through urban and rural exchanges and increase in tourists
		Biodiversity was improved in relation to other areas and producing of unique agricultural products

Source: "Management standards for Agricultural and Fishery Heritage Systems"(MIFAFF)

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Application Procedure
China

- NIAHS
  - People's Governments of candidate sites→Agricultural management departments at the provincial level→Leisure Agriculture Division of Agricultural Products Processing Bureau, MOA
- GIAHS
  - People's Governments at the county level→Agricultural management departments at the provincial level→International Organization Division of Department of International Cooperation, MOA
  - Selected from existing NIAHS sites
- China's GIAHS and China-NIAHS Experts Committee
  - Chairmen: Ecology
  - Vice-Chairmen : Grassland Science, Biodiversity, Plant Protection, Agricultural Ecology, Agricultural History, Agricultural Heritage, Tea Science
  - Experts: Agricultural History & Culture Field, Agricultural Ecology & Environment Field, Agricultural Economy Field

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Application Procedure Japan



- MAFF directly receives applications from sites which want to apply for GIAHS/Japan-NIAHS
- MAFF GIAHS Experts Committee holds 3 meetings and 1 field assessment to select the candidate sites to recommend for GIAHS application to FAO to be endorsed by MAFF
- Fields of 7 MAFF GIAHS Experts Committee members
  - Agri-tourism, LOHAS (Private Sector), Environmental Economy, UNESCO-MAB, Sustainability Science, Rural Planning, Fisheries Science

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Application Procedure Korea



- Mayor of the city or county submits the explanatory documents, field survey report and application proposal through the provincial governor to Minister of MAFRA or Minister of MOF
- Agricultural Heritage Council for NIAHS and Fishery Heritage Council for NIFHS selects NIAHS and NIFAS respectively after deliberation
- Agricultural Heritage Council comprises core council members of Rural Policy Bureau of MAFRA, National Institute of Agricultural Sciences of Korea Rural Development Administration, Rural Research Institute of Korea Rural Community Corporation, and not exceeding 20 commissioned council members who come from various specialized fields such as traditional culture, landscape, ecological environment, rural development and tourism

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Implementation Structure China

- GIAHS
  - CAS-IGSNNR took the lead in the development of GIAHS in China
  - At the Ministry of Agriculture (MOA), GIAHS is under the supervision of the International Organization Division of Department of International Cooperation
  - Officers of Department of International Cooperation and CAS-IGSNNR represent China at international conference for GIAHS
- China-NIAHS
  - Leisure Agriculture Division of Agricultural Products Processing Bureau, MOA is responsible for China-NIAHS
- Characteristic of China's agricultural heritage management system
  - The clear separation of administrative responsibility for the promotion of global and domestic agricultural heritage systems

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Implementation Structure Japan

- GIAHS/Japan-NIAHS is under the supervision of Biodiversity Conservation Office of Rural Environment Division of Rural Development Bureau of MAFF.
  - GIAHS is positioned as part of its rural revitalization policy that effective utilizes biodiversity.
- Biodiversity Conservation Office also works closely with International Cooperation Division of International Affairs Department as the FAO liaison
  - GIAHS is a FAO initiative.
- International meetings related to GIAHS are customarily attended by both officers from Rural Development Bureau and International Affairs Department.

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Implementation Structure Korea



- Rural Development Division of Rural Policy Bureau of MAFRA is in charge of the agricultural heritages
- Fishing Community and Port Development Division of Fisheries Infrastructure and Aquaculture Policy Bureau of MOF is responsible for fishery heritages.
- It is unclear about the positioning of the roles of their respective international relations departments
- GIAHS related international meetings are represented by rural development division officers but not officers in charge of FAO matters

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Information Accessibility China



- Bimonthly “Newsletter of Agri-Cultural Heritage Systems” which contains plenty of information (in Chinese) is published by CAS-IGSNRR
- Websites http://www.moa.gov.cn/ (in Chinese, searched on 3 June 2016)
  - GIAHS: 250 articles were searched for “全球中国重要农业文化遗产” (GIAHS)
  - China-NIAHS: 275 articles were searched for “中国重要农业文化遗产” (China-NIAHS)

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Information Accessibility Japan

- Website (in Japanese, searched on 3 June 2016)
  - MAFF: http://www.maff.go.jp/j/nousin/kantai/giahs_1.html
  - GIAHS Sites
    - 【Sado】http://www.city.sado.niigata.jp/topics/gihas/index/index.shtml
    - 【Noto】http://www.pref.ishikawa.jp/satoyama/noto-giahs/index.html (English, Korean, Chinese and Italian)
    - 【Kakegawa】http://www.city.kakegawa.shizuoka.jp/kakegawatya/chagusaba/chagusaba.html (by google translation)
    - 【Aso】http://www.giahs-aso.jp/ (English, Chinese and Korean)
    - 【Kunisaki】http://www.kunisaki-usa-giahs.com/ (English)
    - 【Nagara】http://www.pref.gifu.lg.jp/kensei/ken-gaiyo/soshiki-annai/nosei/satokawa-shinko/giahs/giahs_index.html
    - 【Minabe】http://www.pref.wakayama.lg.jp/prefg/070100/
    - 【Takachiho】http://www.pref.miyazaki.lg.jp/contents/org/chiiki/shityoson/nishiusuki_shityo/sekainougyoisan/index.html

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Information Accessibility Korea

- Websites (in Korean, searched on 3 June 2016)
  - MAFRA: http://www.mafra.go.kr/main.jsp
    - 40 articles were searched for “농업 유산”(Agricultural heritage)
  - MOF: http://www.mof.go.kr/index.do
    - 9 articles were searched for “어업유산”(Fisheries heritage)

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Monitoring China

- In August 2015, MOA issued and implemented the “Procedures on the administration of Important Agricultural Heritage Systems”, which demonstrated that activities related to GIAHS/NIAHS in China be conducted according to the law from then on, including dynamic monitoring and annual report as well as supervision and inspection
- Annual Report
  - Ecological conservation, Economic development, Social maintenance, Cultural Inheritance, Capacity Building, Publicity, demonstration and diffusion
- Regular Investigation
- The result has not been publicized on the website yet

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Monitoring Japan

- Monitoring and Evaluation of GIAHS designated sites
  - 18-19 Aug 2015: 1st GIAHS Experts Committee (in Oita Prefecture) for Kunisaki GIAHS
    - Submission of Self Evaluation Sheet (20-40 pages including Outline of activities in 2013-2014, Action Plan, Major index for conservation and utilization, Comprehensive self evaluation of activities after designation, Direction and plan for modifying current Action Plan, Table (Action Plan item, Achievement, Self evaluation))
    - Presentation on the progress of GIAHS Action Plan by GIAHS Promotion Association of Kunisaki Peninsula Usa Area (applicant) and field survey by the Committee members
    - Evaluation and advice by the Committee
    - Comprehensive advice for further conservation and utilization of GIAHS site
    - Result of monitoring according to GIAHS criteria
    - The result of the Committee meeting is published on the MAFF website http://www.maff.go.jp/j/nousin/kantai/giahs007.html
  - 4 Feb 2016: 2nd GIAHS Experts Meeting (at MAFF, Tokyo) for Sado and Noto

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Monitoring Korea

- Monitoring systems and the active involvement of residents are essential for the sustainable management of Korea-NIAHS
- Research project about the monitoring system for Korea-NIAHS is ongoing by Rural Research Institute, KRC funded by MAFRA and Monitoring and evaluation system should be adopted in near future for the sound and sustainable conservation of Korea-NIAHS

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Others

- Budget support to the GIAHS/NIAHS designated sites
- National network among GIAHS/NIAHS designated sites
- International cooperation such as GIAHS twining
- Research cooperation

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Future Cooperation



- It is important to propose improvement of GIAHS designation criteria, monitoring system, etc. under the collaboration among China, Japan and Korea for further development of GIAHS
- For this purpose, the cooperation through East Asia Research Association for Agricultural Heritage Systems (ERAHS) will be very useful
- It is also useful to exchange information on conservation policy of agricultural heritage systems such as NIAHS in each country for further development

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Thank you!



United Nations University
(Shibuya-ku, Tokyo)

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Special Session 4

『Monitoring and Evaluation Method for Biodiversity Conservation and Sustainable Use through Multi-stakeholders Governance』

Ms. Evonne Yiu (Research Associate, United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS))

MONITORING AND EVALUATION METHOD FOR BIODIVERSITY CONSERVATION AND SUSTAINABLE USE THROUGH MULTI-STAKEHOLDERS GOVERNANCE

3RD CONFERENCE OF EAST ASIA RESEARCH ASSOCIATION FOR AGRICULTURAL HERITAGE SYSTEMS(ERAHS), 13 -16 JUNE 2016, GUEMSAN COUNTY, KOREA



Evonne Yiu, Research Associate
United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS)

CURRENT STATUS OF MONITORING & EVALUATION OF GIAHS

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2

- No FAO standard process or guideline of monitoring & evaluation (M&E) on GIAHS
- GIAHS sites to conduct M&E based on each own standards and process
- Japan: Brief Format for Self-Evaluation;
  China & Korea: In process of creating M&E process

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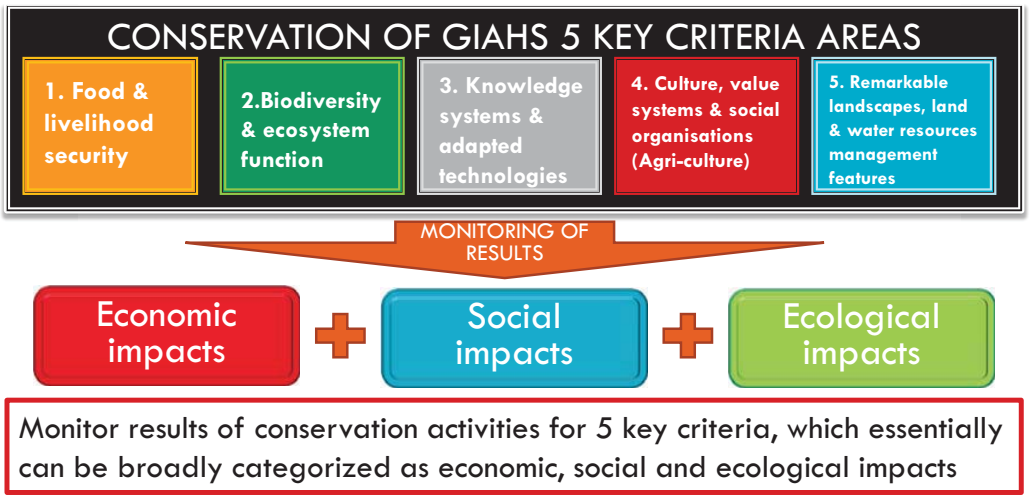
WHAT AREAS TO MONITOR & EVALUATE FOR GIAHS?

3



Monitor results of conservation activities for 5 key criteria, which essentially can be broadly categorized as economic, social and ecological impacts

WHY THE NEED FOR MONITORING & EVALUATION?

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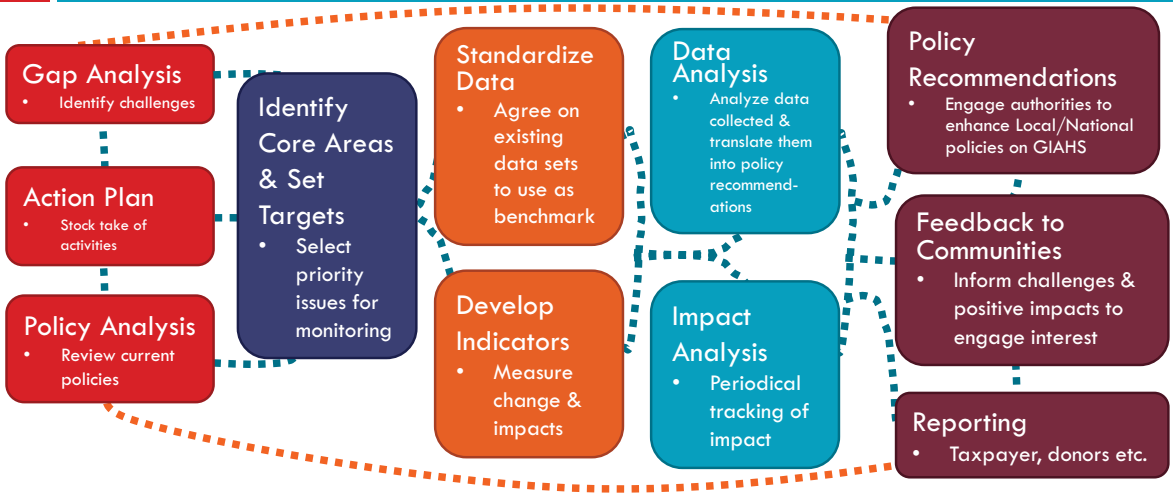
4



- Keep track of changes and threats for timely solutions
- Stock take of conservation activities and its results
- Streamline processes to avoid duplication of effort
- For providing supporting data to governments so as to assist their policy making decisions
- For feedback to communities to sustain interest and encourage commitment
- For reporting to taxpayers/donors and share lessons with other similar projects/sites

HOW TO MONITOR & EVALUATE?

5



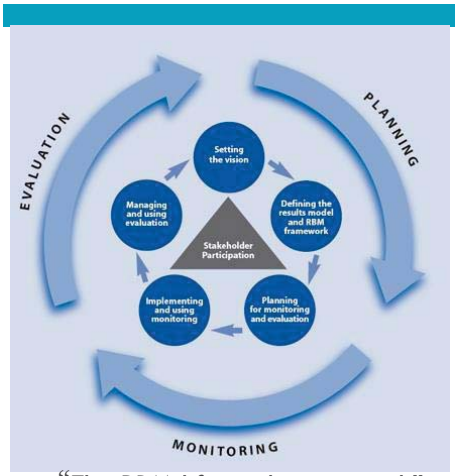
MONITOR & EVALUATION THROUGH MULTI-STAKEHOLDER GOVERNANCE

6

- From August 2015, UNU-IAS is conducting a 3-year Japan Ministry of Agriculture, Forestry and Fisheries (MAFF) funded research project on "**Monitoring and Evaluation Method for Biodiversity Conservation and Sustainable Use through Multi-stakeholders Governance" (or BME).** Research objectives include:
  - Holistically monitor and evaluate the activities taken to promote biodiversity conservation through sustainable use of natural capital for agricultural activities.
  - Incorporate international standards and norms on M&E process, while including perspectives important to Japan's current situation
  - Understand and develop new approach for multi-stakeholders governance
- Case study sites include Japan GIAHS sites and other domestic sites renown for integrating biodiversity conservation with agricultural production
- Team Leader: Prof. K. Takeuchi. Members: Evonne Yiu, Nagata Akira et.al

United Nations Development Programme (UNDP)
"Results Based Management(RBM) Approach"

7



"The RBM life-cycle approach"

Table 6. The results framework

Results	Indicators	Baseline	Target	Means of Verification	Risks & Assumptions
Impact statement *(Ultimate benefits for target population)*	Measure of progress against impact				Assumptions made from outcome to impact. Risks that impact will not be achieved.
Outcome statement *(Short- to medium-term change in development situation)*	Measure of progress against outcome				Assumptions made from outputs to outcome. Risks that outcome will not be achieved.
Outputs *(Products and services—tangible and intangible—delivered or provided)*	Measure of progress against output				Assumptions made from activities to outputs. Risks that outputs may not be produced.
Activities *(Tasks undertaken in order to produce research outputs)*	Milestones or key targets for production of outputs				Preconditions for implementation of activities.

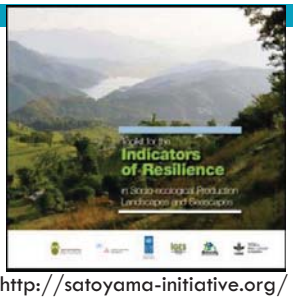
"The Results Framework"

Source: UNDP(2009) "Handbook for Planning, Monitoring and Evaluating for Development Results"

SATOYAMA INITIATIVE:
INDICATORS OF RESILIENCE IN SEPLS

8

- "Indicators of Resilience in Socio-ecological Production Landscapes and Seascapes (SEPLS)" are a tool for engaging local communities in adaptive management of the landscapes and seascapes in which they live.
- Communities can increase their capacity to respond to social, economic, and environmental pressures and shocks, thus increasing the social and ecological resilience
- 20 indicators designed to capture different aspects of key systems – ecological, agricultural, cultural and socio-economic.
- Both qualitative and quantifiable indicators, but measurement is based on the observations, tallies, perceptions and experiences of the local communities.
- To be used flexibly and can be customized to reflect the circumstances of each particular landscape or seascape and its associated communities.



http://satoyama-initiative.org/

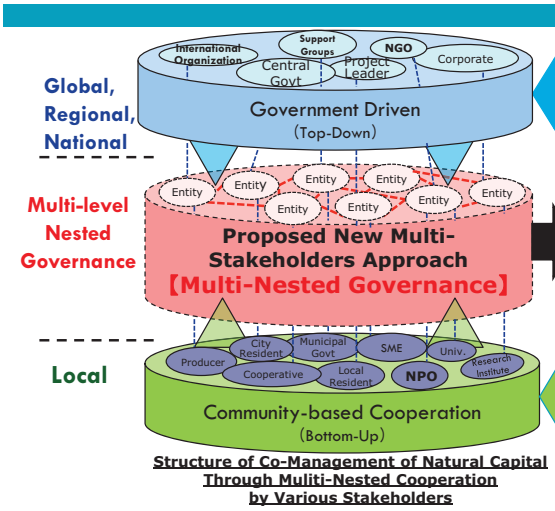
SATOYAMA RESILIENCE INDICATOR	
Ecological	☐Landscape/Seascape biodiversity & ecosystem protection ☐Biodiversity (incl. agro-diversity)
Social	☐Knowledge & innovation ☐Governance & social equity
Economic	☐Livelihoods & wellbeing

20 indicators under 5 themes
self assessment scoring
on 1-5 scale



Example Chart of Assessment Results

MULTI-NESTED GOVERNANCE FOR M&E



Structure of Co-Management of Natural Capital Through Muliti-Nested Cooperation by Various Stakeholders

■UNDP Evaluation Model etc
■Evaluation focused on macro level socio-economic aspects encompassing broad perspectives
■Emphasize on third party assessment
■Top down approach

Monitoring and Evaluation Method taking into account of the needs and current state of rural communities in Japan, and thereby also propose a new approach of co-management (multi-nested governance)

■SATOYAMA Initiative Evaluation Model etc
■Evaluation focused on micro-level community-based, ecological resilience approach
■Emphasize on self-Assessment
■Bottom-up approach through community-based cooperation

FORMULATING M&E FORMAT

Formulate M&E format based on international evaluation models
such as UNDP and United Nation University's Satoyama Initiative etc while also including perspectives important and relevant to the Japanese context

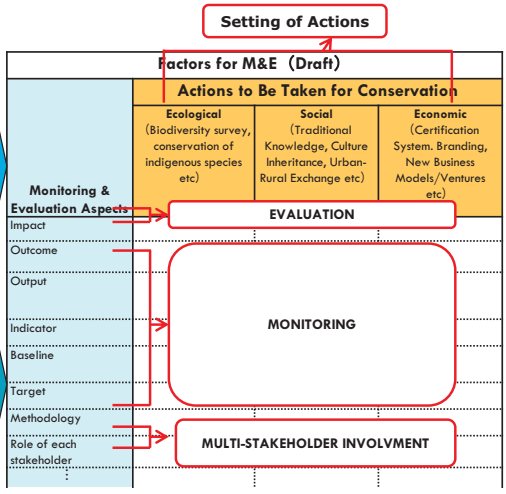
UNDP Results-Based Management (RBM) Approach



Monitoring & Evaluation Aspects
Impact
Outcome
Output
Indicator
Baseline
Target
Methodology
Role of each stakeholder etc

SATOYAMA RESILIENCE INDICATOR

Ecological	☐Landscape/Seascape biodiversity & ecosystem protection ☐Biodiversity (incl. agro-diversity)
Social	☐Knowledge & innovation ☐Governance & social equity
Economic	☐Livelihoods & wellbeing



PROPOSED FRAMEWORK FOR MONITORING & EVALUATION OF ACTIVITIES TAKEN FOR BIODIVERSITY CONSERVATION AND SUSTAINABLE USE THROUGH MULTI-STAKEHOLDERS GOVERNANCE (DRAFT)

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① FORMULATE ACTION PLAN

1. Current state of site
2. Biodiversity conservation & its challenges
3. Potential for biodiversity conservation & utilization
4. Impact, Outcome, Output, Action Framework
5. Indicator, Baseline, Targets, Methodology, Assumptions & Risks
6. Role & responsibility of each stakeholder

Expected Result	Indicator	Baseline	Target	Method	Assumption & Risk	Stakeholder Entity
Impact						
Outcome						
Output						
Action①						
Action②						
Action③						
Action④						

7. Implementation Structure
8. Mapping of Actions

② MONITORING & EVALUATION

1. Conduct of Monitoring & Evaluation
2. Expected Achievements of Targets & Potential for Utilization
   (1) Ecological (2) Social (3) Economic
3. Future challenges
4. Overall Evaluation

Create below matrix (draft) for M&E：

		Action①	Action②	Action③	⋯
Action [Ecological]					
Evaluation	Impact				
Monitoring	Outcome				
	Output				
	Target				
	Baseline				
	Target				
	Methodology				
Role of Entity	Entity①				
	Entity②				
	Entity③				
	⋮				
	Assumption & Risk				
	Challenge				

③ Proposing Improvements

1. Review of policy actions based on evaluation results
2. Proposed concrete actions for improvement

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CONCLUSION

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- Need for **Results Oriented Approach** in Implementing Actions
- Cyclical process of **Planning → Monitoring → Evaluation →**Planning (and so on…)
- Regular Monitoring (every 1-2year) & Evaluation (every 3-5 year) is necessary to make improvements and set new directions
- Crucial to involve all relevant stakeholders and gain consensus through several rigorous but necessary dialogues to build common understanding
- Actions, indicators and targets should be form based on needs and agreement amongst stakeholders and to be implemented within their capacity



THANK YOU

For enquiries: yiu@unu.edu

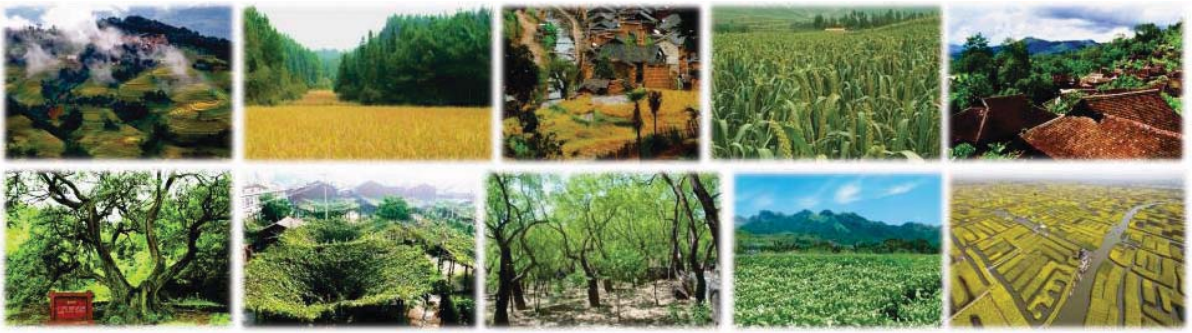
Special Session 5

『Monitoring and Evaluation of Globally Important Agricultural Heritage Systems (GIAHS) in China』

Ms. Jiao, Wenjun (Assistant Professor, IGSNRR, CAS)

中国科学院地理科学与资源研究所
Institute of Geographic Sciences and Natural Resources Research, CAS

Monitoring and Evaluation of Globally Important Agricultural Heritage Systems (GIAHS) in China



Dr. JIAO Wenjun
Center for Natural and Cultural Heritage
Institute of Geographic Scienes and Natural Resources Research, Chinese Academy of Sciences

中国科学院地理科学与资源研究所
Institute of Geographic Sciences and Natural Resources Research, CAS

- **Background**
- **General Design**
- **Major Progress**

GIAHS
Globally Important Agricultural Heritage Systems

- In 2002, **GIAHS** was conceptualized and launched by FAO
- In 2005, **Qingtian Rice-Fish Culture** in China was designated as one of the five GIAHS pilots
- In 2012, MOA started the selection of **China-NIAHS**
- Up to now, there are **11 GIAHS** and **62 China-NIAHS** in China





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Natural Resources Research, CAS

- The **evaluation report** of FAO/GEF-GIAHS project pointed out that ***building a GIAHS monitoring and evaluation mechanism in China should be the direction of efforts and the emphasis of work at the national level in the future***.
- The ***Procedures on the Administration of Important Agricultural Heritage Systems*** was approved by MOA in July, 2015 and formally published and implemented in August.


中华人民共和国农业部公告

第 2283 号

《重要农业文化遗产管理办法》业经 2015 年 7 月 30 日农业部第八次常务会议审议通过，现予公布，自公布之日起施行。

特此公告。

- **Dynamic monitoring and annual report have been specified in the measures.**

第三章 保护与管理

第十六条 重要农业文化遗产所在地应当建立遗产动态监测信息系统，监测遗产所在地农业资源、文化、知识、技术、环境等现状，并制作、保存档案。

第十七条 重要农业文化遗产所在地应当于每年年底前向农业部提交遗产保护工作年度报告。

遗产保护工作年度报告，应当包括下列内容：

（一）本年度遗产保护工作情况；

（二）遗产所在地社会经济与生态环境变化情况；

（三）下一年度工作计划；

（四）其他需要报告的事项。

遗产保护工作年度报告，应当经本级人民政府同意后通过省级人民政府农业行政主管部门提交。

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Institute of Geographic Sciences and
Natural Resources Research, CAS

- **Supervision and inspection have also been pointed out in the measures.**

第五章 监督与检查

第二十五条 县级以上人民政府农业行政主管部门应当对遗产保护情况进行监督，并开展不定期的检查评估。

第二十六条 因保护和管理不善，致使遗产出现下列情形之一的，重要农业文化遗产所在地应当及时组织整改：

（一）重要农业文化遗产所在地的农业景观、生态系统或自然环境遭到严重破坏，相关生物多样性严重减少的；

（二）重要农业文化遗产所在地的农业种质资源严重缩减，农业耕作制度发生颠覆性变化的；

（三）重要农业文化遗产所在地的农业民俗、本土知识和适应性技术等农业文化传承遭到严重影响的。

第二十七条 中国重要农业文化遗产受到严重破坏并产生不可逆后果的，由农业部撤销中国重要农业文化遗产认定。

全球重要农业文化遗产的撤销，由农业部提请联合国粮农组织决定。

- Background
- General Design
- Major Progress

GIAHS
Globally Important Agricultural Heritage Systems

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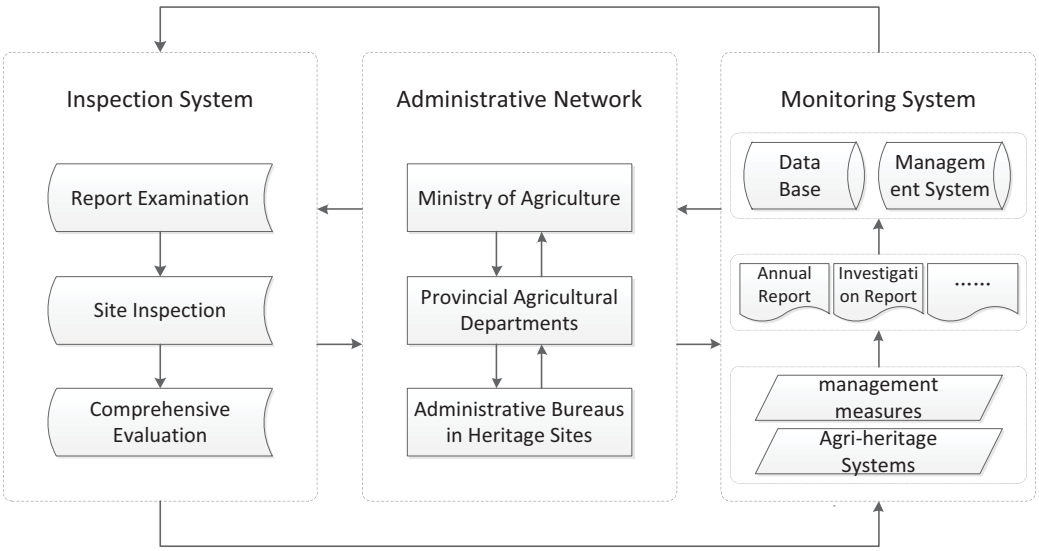
1. The framework of GIAHS monitoring and evaluation

(1) The purpose is to facilitate administrators

- ***to understand what threats GIAHS face and how GIAHS adapt in a modern society***
- ***to evaluate how protection and development measures influence GIAHS***
- ***to make early warnings and quick responses to emergencies that threaten GIAHS***

General framework of GIAHS monitoring and evaluation in China



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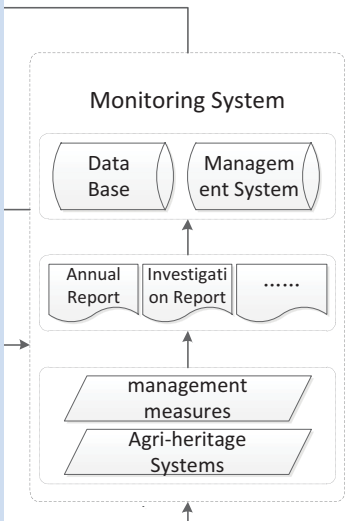
2. The dynamic monitoring system

(1) The objects are
- *agricultural heritage systems*
- *management measures*

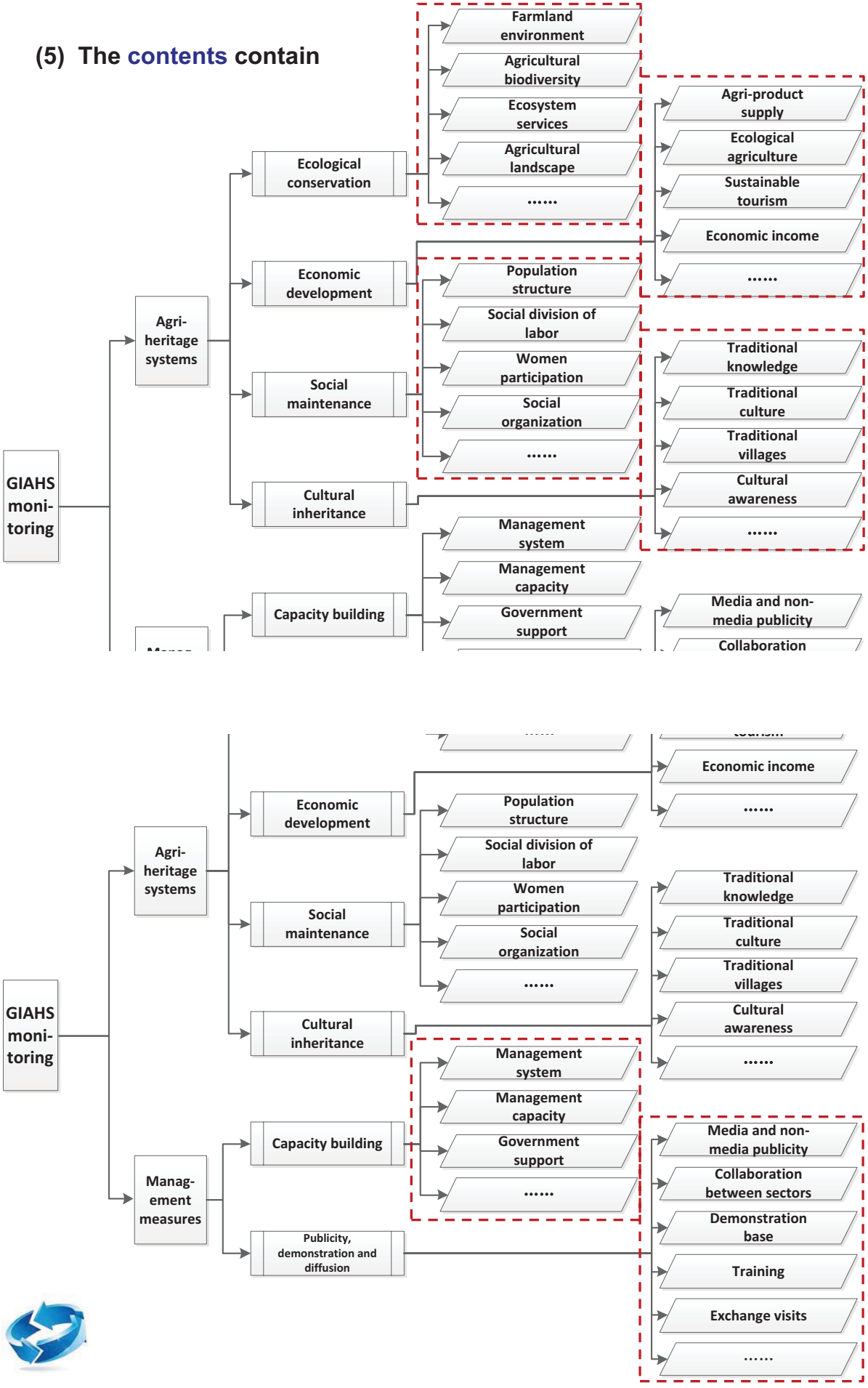
(2) The method is a combination of
- *annual report*
- *regular investigation (3-5 years)*

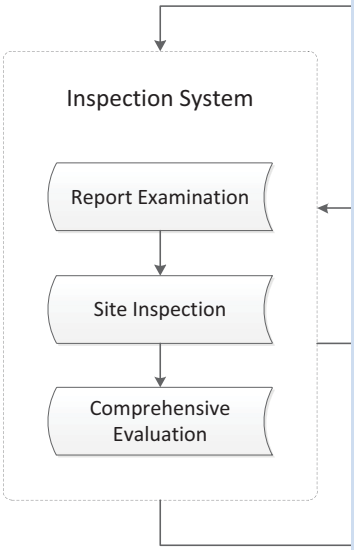
(3) The scales include
- *heritage sites or larger scale (county)*
- *monitoring points (village)*

(4) The data are guaranteed by
- *an annual reporting system*
- *a data base and management system*



(5) The contents contain





3. The inspection system

(1) The mechanism is comprised of
- *Procedures on the Monitoring and Inspection of Important Agricultural Heritage Systems*
- *a working group of administrators and experts from scientific committee*

(2) The method includes
- *reviewing annual reports and investigation reports in the past 5-6 years*
- *combined with site inspection*

(3) The results will be
- *obtained by using evaluation forms*
- *put into the data base*

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- **Background**
- **General Design**
- **Major Progress**

GIAHS
Globally Important Agricultural Heritage Systems

1. Annual report

- In January of 2015, a training workshop on GIAHS monitoring was held in Beijing
- Administrative staff from the 11 GIAHS sites attended this training



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- In April of 2016, another workshop on GIAHS monitoring was held in Beijing during the 3rd National Workshop on GIAHS
- Administrative staff from the 11 GIAHS sites built one-one relationship with researchers to get technical support in the GIAHS monitoring



- **Scale:**
  - *county*
  - *heritage site*
  - *typical village*
- **Content:**
  - *agricultural heritage systems*
  - *management measures*



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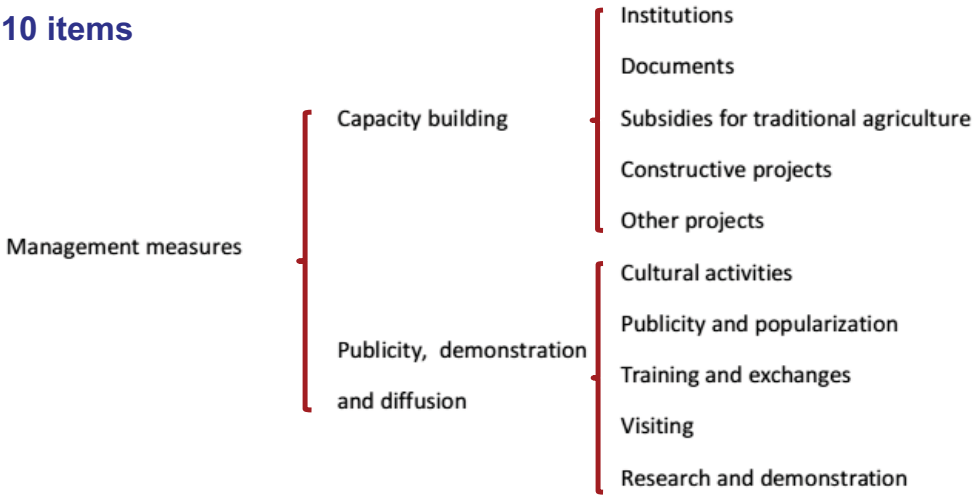
14 items

- Agricultural heritage systems
  - Ecological conservation
    - Biological resources
    - Land use
  - Economic development
    - Agricultural product producing and selling
    - Agricultural product processing
    - Certification
    - Tourism capacity
    - Economic revenue
  - Social maintenance
    - Population
    - Agricultural management organizations
    - Social organizations
  - Cultural inheritance
    - Cultural products
    - Cultural facilities
    - Traditional technologies
    - Spontaneous propaganda

10 items



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Build up a data base and management system

- *to realize the on-line filling-in of the annual reports*
- *to gather all the data (from both annual reports and investigation reports) and evaluation results*
- *to provide entrances for national, provincial and local management departments*
- *to share information with the public by connecting to the internet platform*



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Now,

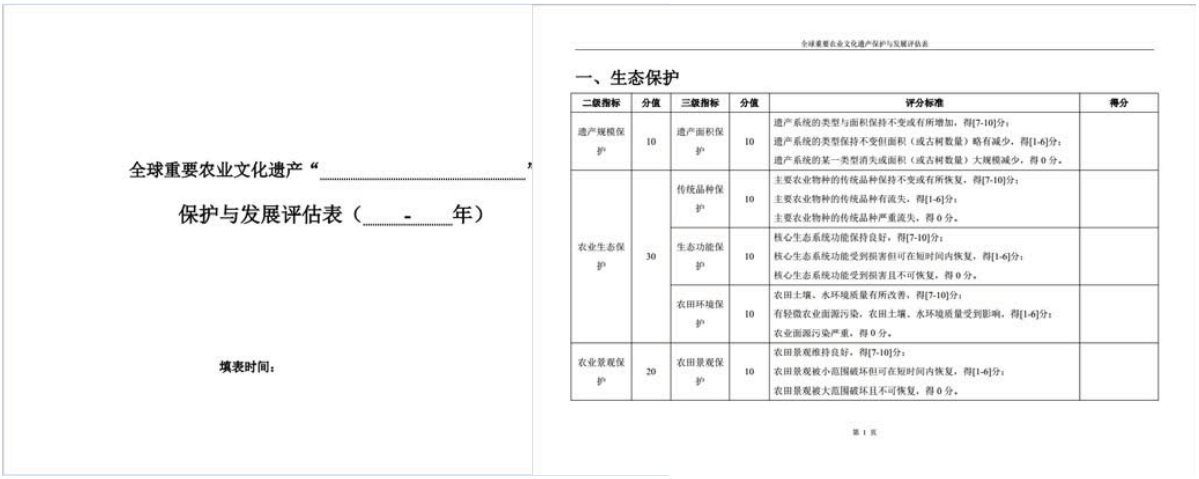
- ***collecting the data required by the annual report in 2015 and testing the filling-in system off-line***
- ***the Ministry is providing the 11 GIAHS sites with funds devoted to the data colletion and reporting in the GIAHS monitoring***

Next,

- ***the Ministry will make a formal announcement on starting the monitoring and evaluation of GIAHS in China***
- ***heritage sites will be assisted to report the data through the on-line system***

2. Evaluation form

- **Five aspects:** ***ecological conservation, economic deveopment, social maintenance, cultural inheritance and capacity building***
- **Indicators:** ***three levels, a total of 35 indicators***



全球重要农业文化遗产“　　”

保护与发展评估表（　　-　　年）

填表时间：

全球重要农业文化遗产保护与发展评估表

一、生态保护

二级指标	分值	三级指标	分值	评分标准	得分
遗产规模保护	10	遗产面积保护	10	遗产系统的类型与面积保持不变或有所增加，得[7-10]分； 遗产系统的类型保持不变但面积（或古树数量）略有减少，得[1-6]分； 遗产系统的某一类型消失或面积（或古树数量）大规模减少，得 0 分。	
农业生态保护	30	传统品种保护	10	主要农业物种的传统品种保持不变或有所恢复，得[7-10]分； 主要农业物种的传统品种有流失，得[1-6]分； 主要农业物种的传统品种严重流失，得 0 分。	
		生态功能保护	10	核心生态系统功能保持良好，得[7-10]分； 核心生态系统功能受到损害但可在短时间内恢复，得[1-6]分； 核心生态系统功能受到损害且不可恢复，得 0 分。	
		农田环境保护	10	农田土壤、水环境质量有所改善，得[7-10]分； 有轻微农业面源污染，农田土壤、水环境质量受到影响，得[1-6]分； 农业面源污染严重，得 0 分。	
农业景观保护	20	农田景观保护	10	农田景观维持良好，得[7-10]分； 农田景观被小范围破坏但可在短时间内恢复，得[1-6]分； 农田景观被大范围破坏且不可恢复，得 0 分。	

第 1 页

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- **Inspection and evaluation:** ***Wannian Traditional Rice Culture System, in August, 2015***







designated in June, 2010

- **Inspection and evaluation:** ***Aohan Dryland Farming System, in September, 2015***







designated in June, 2012

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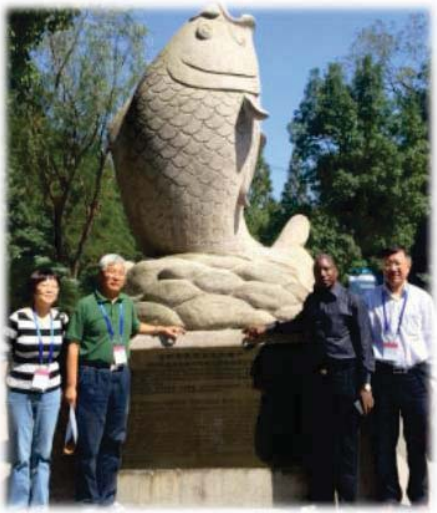
- **Inspection and evaluation:** ***Qingtian Rice-Fish Culture, in October, 2015***







designated in June, 2005

- **Inspection and evaluation: *Pu'er Traditional Tea Agrosystem, in November, 2015***







designated in September, 2012

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- **In December, 2015, Summing-up Conference on Monitoring and Evaluation of GIAHS in China was held in Beijing**



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Next,

- ***to inspect and evaluate Hani Rice Terraces, Congjiang Dong's Rice-Fish-Duck Agrosystem for the past five-year conservation and development***
- ***to inspect and evaluate Xuanhua Traditonal Vineyard System, Shaoxing Kuaijishan Ancient Chinese Torreya for the past three-year protection and development***
- ***to further improve the evaluation forms and the scoring method***

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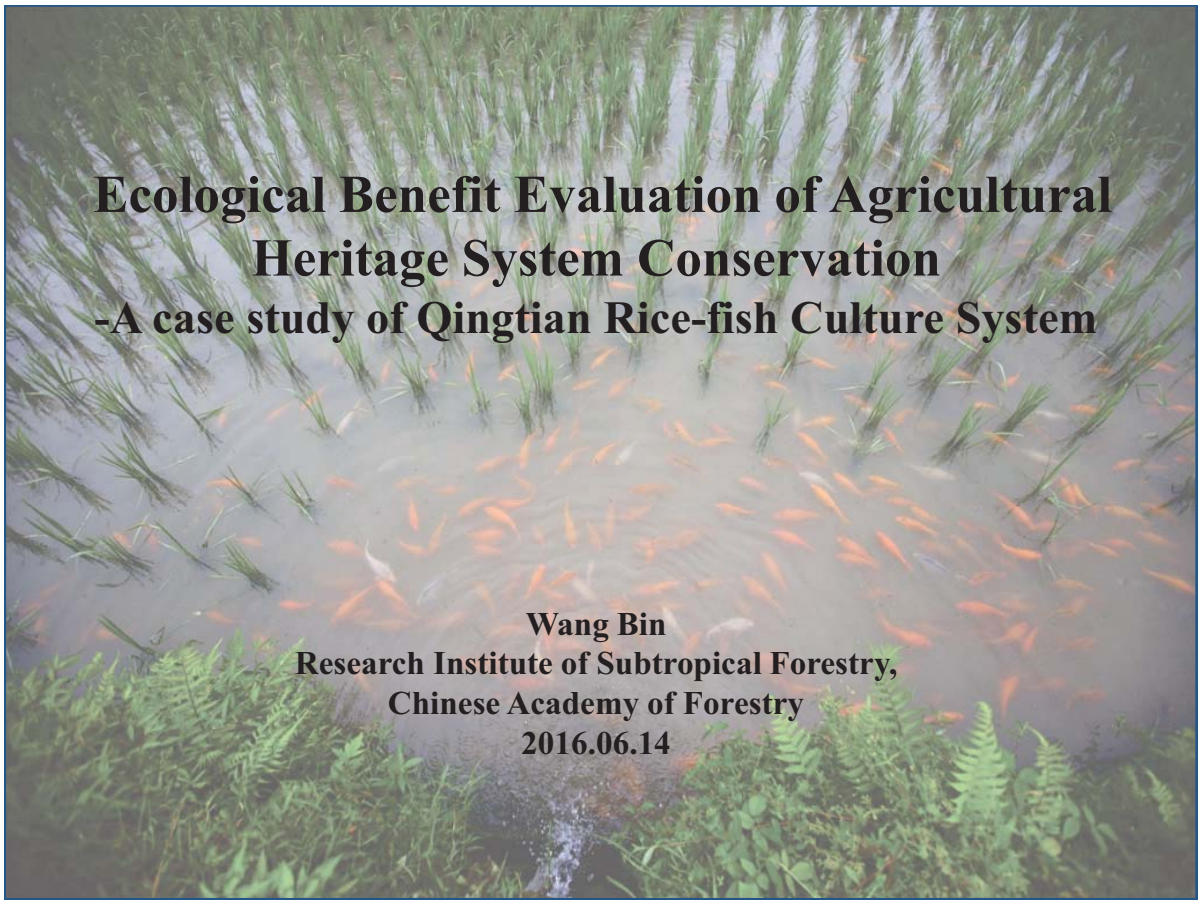
Thank you for your attetion!

jiaowj@igsnrr.ac.cn

Special Session 6

『Ecological Benefit Evaluation of Agricultural Heritage System Conservation: A Case Study of Qingtian Rice-fish Culture System』

Mr. Wang, Bin (Associate Professor, Research of Subtropical Forestry, Chinese Academy of Forestry)



Ecological Benefit Evaluation of Agricultural Heritage System Conservation
-A case study of Qingtian Rice-fish Culture System

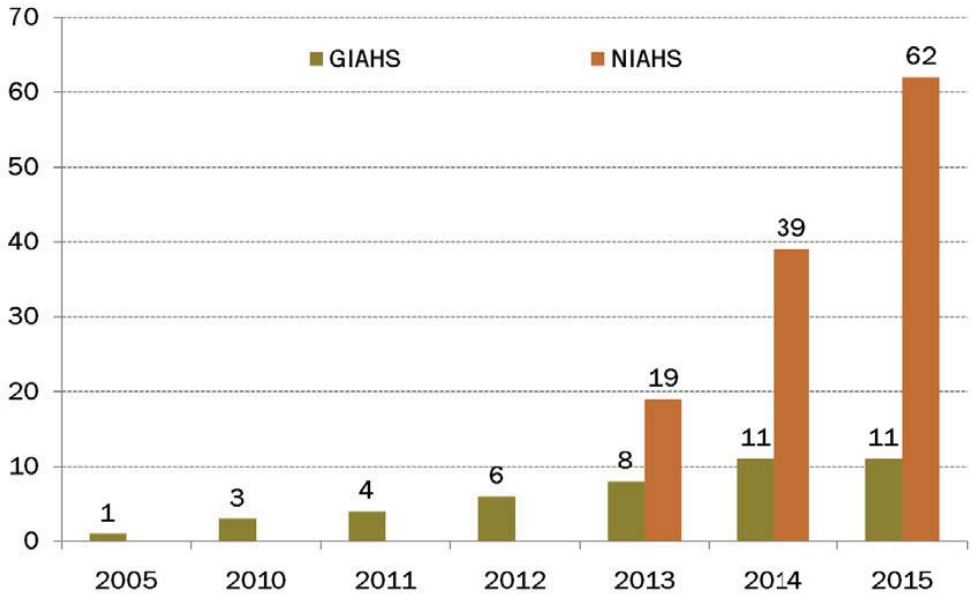
Wang Bin
Research Institute of Subtropical Forestry,
Chinese Academy of Forestry
2016.06.14

Contents

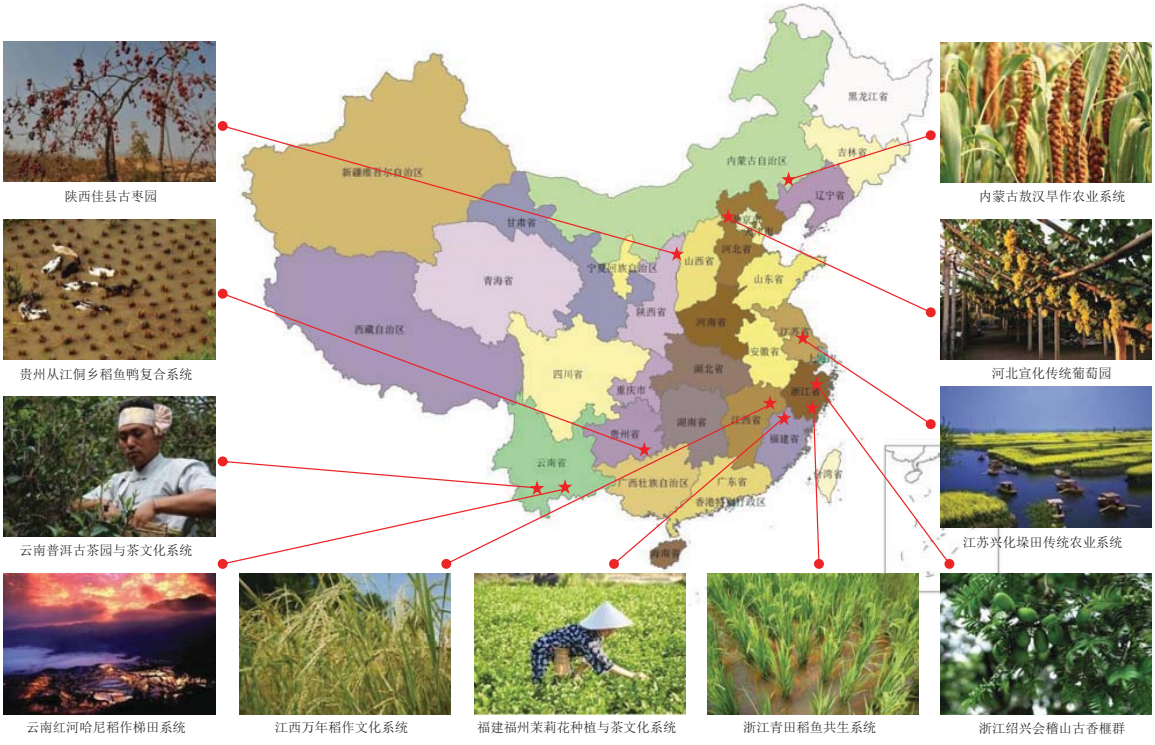
I. General Introduction
II. Evaluation Methods
III.Biodiversity
IV.Ecosystem Structure and Function
V. Ecological Environment Quality
VI.Problems and Countermeasures

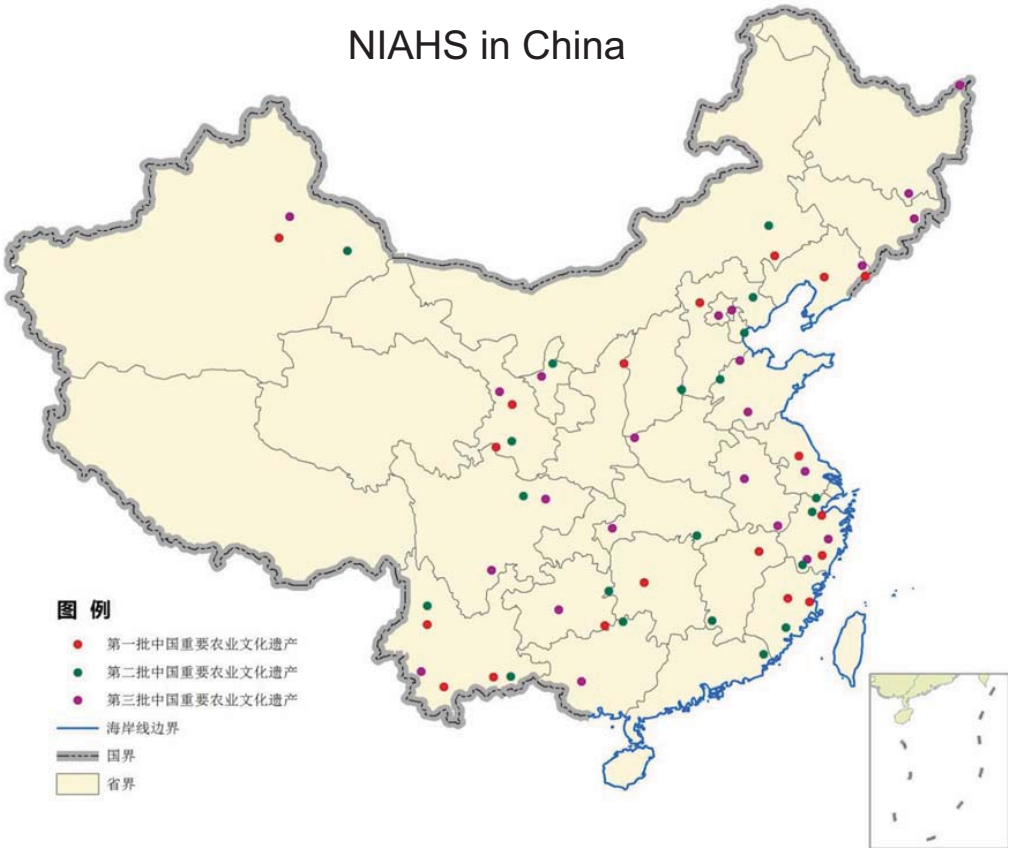
I. General Introduction

NO. of GIAHS & NIAHS in China, 2005-2015



GIAHS in China





Purpose of Evaluation

- Grasp and understand the status and trends of ecosystem structure and function, biodiversity and ecological environment after AHS conservation;
- Analyze the key problems of biodiversity conservation and the threat factors; establish the monitoring system of biological species resource;
- Clarify the focus and direction of the heritage conservation; put forward feasible countermeasures and suggestions for AHS conservation.

In 2015, we chose Qingtian Rice-fish Culture System as a case, and carried out the ecological benefit evaluation of AHS conservation.





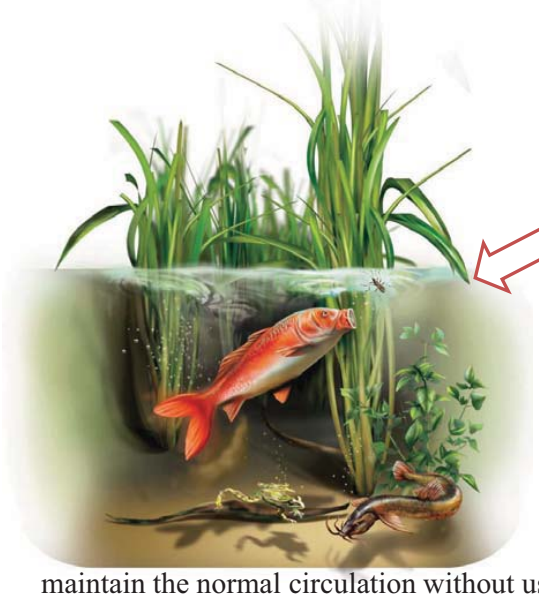


Qingtian Rice-fish Culture System



- Qingtian County is in the central and southern of Zhejiang province;
- The tradition of raising fish in paddy field has a history of more than 1200 years;
- The first one in China and the first batch in the world for GIAHS conservation (In 2005).

- Feeding fish with insects and weeds-fertilizing field with fish manures
- Splendid rice-fish culture



maintain the normal circulation without using any fertilizers or pesticides;
gave birth to the splendid rice-fish culture.



Evaluation Methods

- Taking the year of 2005 (awarded the GIAHS) as the starting year and 10 years as an assessment period;
- Divided the assessment scope into three levels: first is the core area (Longxian); second is the expanding areas (Fangshan, Xiaozhoushan and Renzhuang); third is the whole county;
- Objects: farmlands, forests, wetlands, rivers; reservoirs; grasslands, urban, wastelands;
- Contents: agriculture and relevant biodiversity; ecosystem structure and function, ecological environment quality of paddy field and rural area.

Evaluation Indicator System

Level 1	Level 2	Level 3
Ecological benefit evaluation	Agriculture biodiversity	Rice varieties
		Fish varieties
		Other crop varieties
		Livestock and poultry varieties
		Economic fruits
		Medicinal plants
	Relevant biodiversity	Biological varieties in paddy field
		Biological varieties in residential areas
		Biological varieties in forest lands
		Other wild animals
	Ecosystem structure and function	Ecosystem types
		Ecosystem structure
		Ecosystem services
	Ecological environment quality of paddy field	Soil nutrient
		Water quality
		Diseases and insect pests
	Ecological environment quality of rural area	Rural landscape
		Farmland landscape
		Water environment
		Household garbage
		Path between fields

III. Biodiversity

1. Rice varieties

- According to the research data in 2006, 28 traditional rice varieties have disappeared from Qingtian rice-fish culture system;
- There are mainly 4 traditional rice varieties which are still retained in the site since the heritage conservation was launched.



黑米 Black rice



糯米 Sticky rice



农垦58（粳稻） Japonica rice



红晚金（汕稻）Indica rice

2. Fish varieties

- Preliminary investigation shows that the population size of fish originally raised in Qingtian is dramatically shrinking, and even completely disappears in some villages.
- Instead, there are more and more newly breeding varieties (genetic diversity is relatively low).





青田田鱼 Qingtian fish

In order to protect the genetic diversity of Qingtian fish, the government has begun to protect the protospecies of Qingtian fish since 2013.



青田田鱼 Qingtian fish



鱼苗孵化 Hatch young fish



鱼苗筛选 Filter young fish



鱼苗捐赠 Donate young fish

3. Other Agriculture Varieties

- Crop varieties: basically remain the same;
- Livestock and poultry varieties: most of which are introduced species, mainly include pig, cattle, sheep, chicken, duck, and so on;
- Economic fruits: developed quickly due to the adjustment of agricultural industrial structure in recent years, including more than 20 species such as waxberry, orange, peach, pear and loquat, etc.
- Medicinal plants: the variety and area has showed an increasing trend annually in these years.

4. Relevant Biodiversity



Biological varieties in paddy field



Biological varieties in residential areas



Biological varieties in forest lands

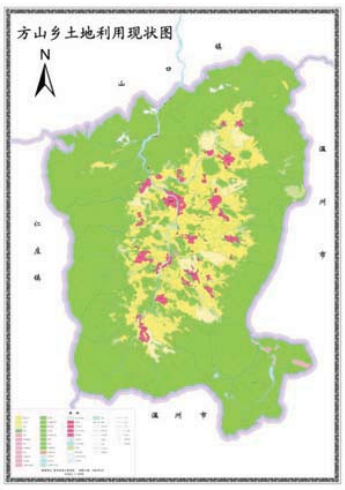


Other wild animals

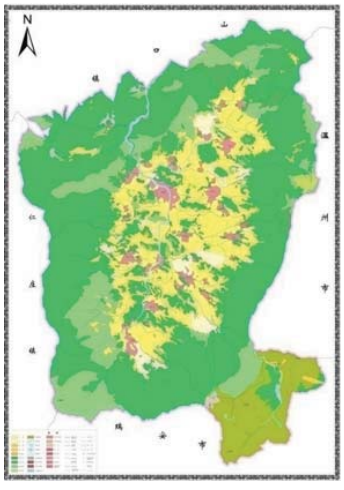
Survey showed no obvious change.

IV. Ecosystem Structure and Function

- Taking the Fangshan town and Longxian Village as the study area;
- Using the land use data in 2005 and 2013



Land use map in 2005



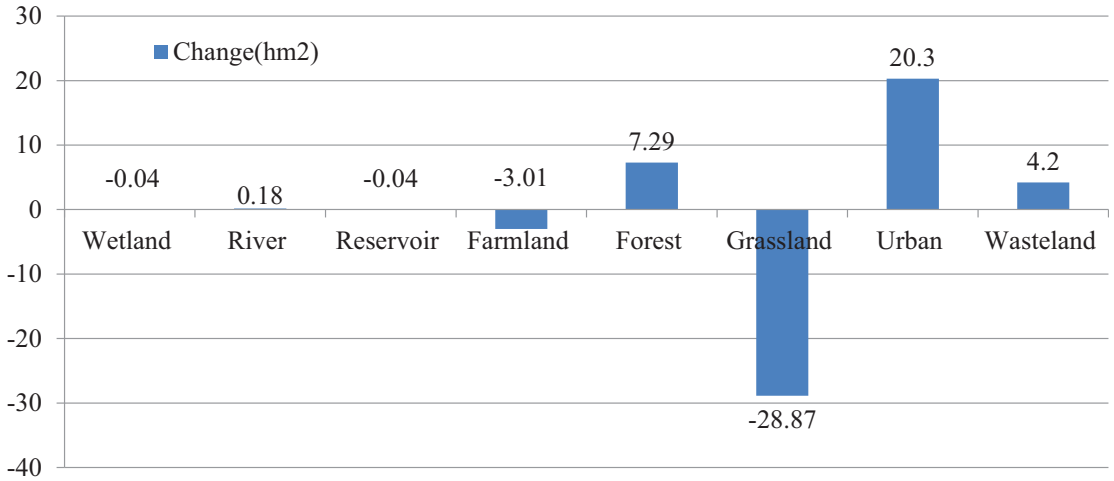
Land use map in 2013

1. Ecosystem Structure Change

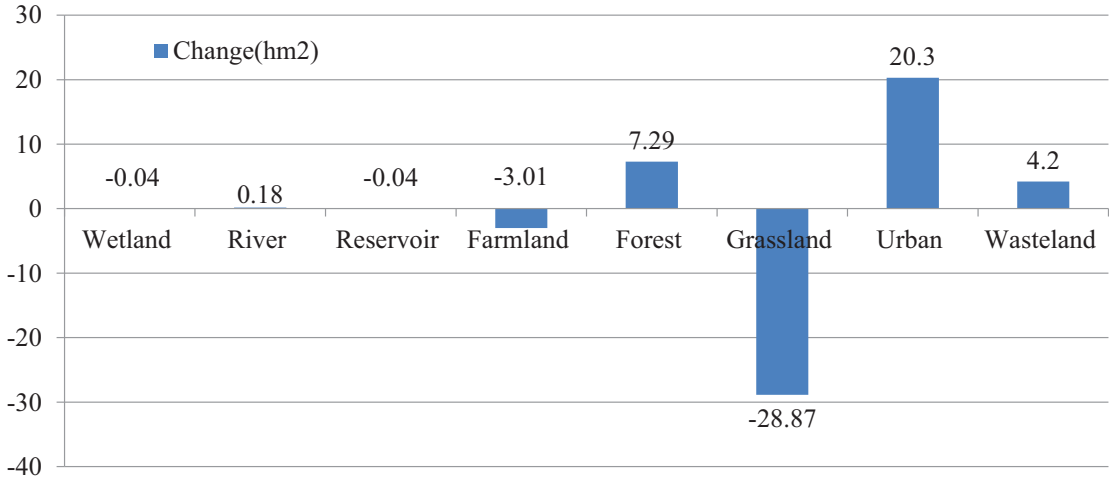
- According to land use data in Fangshan Town in 2013, the forest ecosystem occupies the largest area, followed by farmland ecosystem, while the wetland ecosystem area is the smallest.

Table 1 The area of different ecosystems in Fangshan town (hm^2)

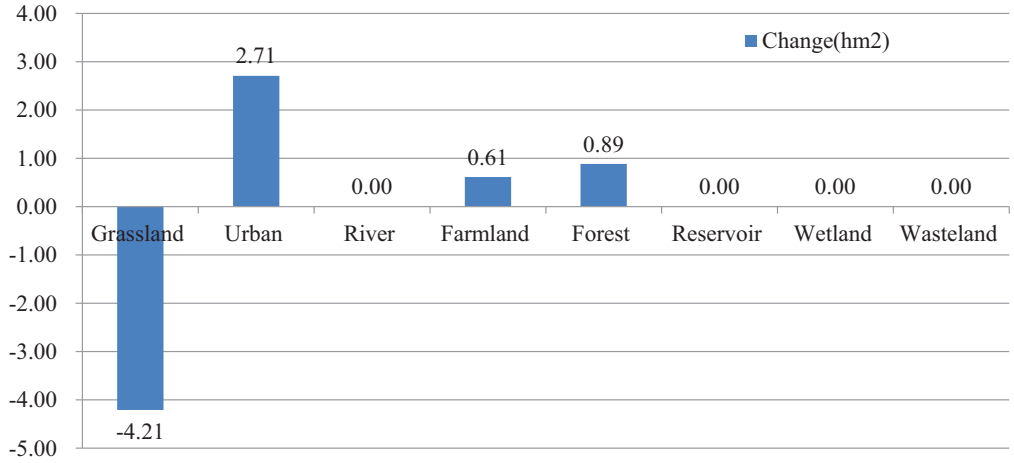
Ecosystem types	2005	2013	Change
Wetland	2.51	2.47	-0.04
River	25.32	25.50	0.18
Reservoir	9.56	9.53	-0.04
Farmland	863.79	860.78	-3.01
Forest	2755.75	2763.03	7.29
Grassland	317.02	288.15	-28.87
Urban	116.47	136.76	20.30
Wasteland	11.30	15.49	4.20
Total	4101.71	4101.71	0



- Urban: the fast speed of urbanization.
- Forest: the basis of ecological environmental protection in the heritage site is relatively strong.
- Wasteland: may be associated with the decrease of rural labor force and the abandon of farmlands.



- Grassland: may probably due to the urbanization.
- Farmland: most farmers in the heritage site has chosen to cultivate the land near their house and gradually abandoned the remote land.



- Longxian village: core area of the rice-fish system.
- Urban area increased rapidly. Many overseas Chinese like to build houses in hometown when they have certain economic basis.

2. Ecosystem Services Change

- Referring to the research, we constructed the calculating parameter (table 2) and use it to calculate the ecosystem services of different ecosystems in 2005 and 2013.

Table 2 Unit area ecosystem services of different ecosystems (RMB/hm^2.a)

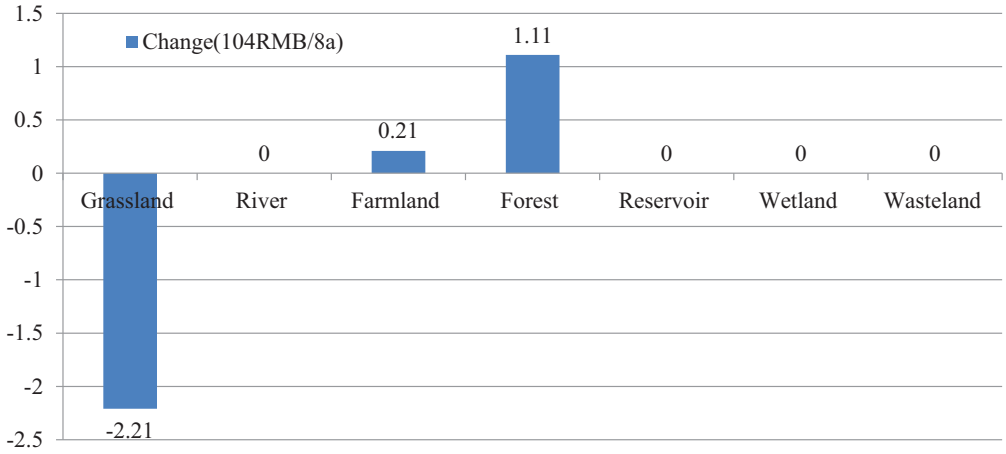
Level 1	Level 2	Grassland	River	Farmland	Forest	Reservoir	Wetland	Wasteland
Provisioning services	Food production	193.11	238.02	449.1	148.2	238.02	161.68	8.98
	Material production	161.68	157.19	175.15	1338.32	157.19	107.78	17.96
Regulating services	Gas regulation	673.65	229.04	323.35	1940.11	229.04	1082.33	26.95
	Climate regulation	700.6	925.15	435.63	1827.84	925.15	6085.31	58.38
	Water temperature regulation	682.63	8429.61	345.81	1836.82	8429.61	6035.9	31.44
	Waste disposal	592.81	6669.14	624.25	772.45	6669.14	6467.04	116.77
Supporting services	Soil conservation	1005.98	184.13	660.18	1805.38	184.13	893.71	76.35
	Maintain biodiversity	839.82	1540.41	458.08	2025.44	1540.41	1657.18	179.64
	Landscape	390.72	1994	76.35	934.13	1994	2106.28	107.78

Export Knowledge based valuation method of ecosystem services in China. Xie Gaodi (2008)

Table 3 The ecosystem services of different ecosystems in Fangshan Town (10^4 RMB/a)

Level 1	Level 2	Grassland	River	Farmland	Forest	Reservoir	Wetland	Wasteland	Grassland	River	Farmland	Forest	Reservoir	Wetland	Wasteland	Total		Change
		2005	2013	2005	2013	2005	2013	2005	2013	2005	2013	2005	2013	2005	2013	2005	2013	
Provisioning services	Food production	6.12	5.56	0.60	0.61	38.79	38.66	40.84	40.95	0.23	0.23	0.04	0.04	0.01	0.01	86.63	86.06	-0.57
	Material production	5.13	4.66	0.40	0.40	15.13	15.08	368.81	369.78	0.15	0.15	0.03	0.03	0.02	0.03	389.67	390.13	0.46
Regulating services	Gas regulation	21.36	19.41	0.58	0.58	27.93	27.83	534.65	536.06	0.22	0.22	0.27	0.27	0.03	0.04	585.04	584.41	-0.63
	Climate regulation	22.21	20.19	2.34	2.36	37.63	37.50	503.71	505.04	0.88	0.88	1.53	1.50	0.07	0.09	568.37	567.56	-0.81
	Water temperature regulation	21.64	19.67	21.35	21.50	29.87	29.77	506.18	507.52	8.06	8.03	1.52	1.49	0.04	0.05	588.66	588.03	-0.63
	Waste disposal	18.79	17.08	16.89	17.01	53.92	53.73	212.87	213.43	6.38	6.35	1.62	1.60	0.13	0.18	310.60	309.38	-1.22
Supporting services	Soil conservation	31.89	28.99	0.47	0.47	57.03	56.83	497.52	498.83	0.18	0.18	0.22	0.22	0.09	0.12	587.40	585.64	-1.76
	Maintain biodiversity	26.62	24.20	3.90	3.93	39.57	39.43	558.16	559.64	1.47	1.47	0.42	0.41	0.20	0.28	630.34	629.36	-0.98
	Landscape	12.39	11.26	5.05	5.08	6.60	6.57	257.42	258.10	1.91	1.90	0.53	0.52	0.12	0.17	284.02	283.60	-0.42
Total		166.15	151.02	51.58	51.94	306.46	305.39	3480.15	3489.35	19.47	19.40	6.18	6.08	0.71	0.97	4030.70	4024.15	-6.55

- The total value of ecosystem service in Fangshan town has reduced from 40,307,000 RMB/a in 2005 to 40,241,500 RMB/a in 2013.
- The reduction of ecosystem service may be largely caused by the increase of urban area.
- Service value of forest ecosystem has increased, river and desert ecosystems has slightly increased; while grassland, farmland, reservoir and wetland ecosystem have showed a reducing trend.
- Except the service of raw material production, all the other service functions have reduced. Soil conservation and waste treatment reduced the most.



- Longxian Village: the ecosystem services of farmland and forest ecosystem have increased, indicating that the heritage conservation in Longxian Village has made some achievements in recent years.

V. Ecological Environment Quality

1. Soil nutrient

- Fishes could absorb organic through swallowing and digesting, and their excreta could transform 30% to 40% of the organic matters into fertilizer, which increases the organic matter content and nutrient in the paddy fields.
- The movements of fishes could constantly turn over the soil so as to enlarge the soil porosity and increase the oxygen, which is also helpful to accelerate the decomposition of organic matters.

The soil test report shows that the paddy soil in this area is slightly acidic with high organic matter content, which is especially suitable for planting rice.

Table 4 The test report of soil quality in paddy field in Longxian village

Items	Limit value	Result	Decision
pH		5.92	
TP（%）		0.026	
AP（ppm）		12.5	
Available K（ppm）		92.5	
TN（%）		0.133	
SOM（%）		3.41	
DDT（mg/kg）	≤0.50	6.67×10^{-3}	Up to standard
HCH（mg/kg）	≤0.50	$<1.0\times10^{-5}$	Up to standard
Pb（mg/kg）	≤250	32	Up to standard
As（mg/kg）	≤30	4.04	Up to standard
Hg（mg/kg）	≤0.30	0.08	Up to standard
Cr（mg/kg）	≤250	<30	Up to standard
Cd（mg/kg）	≤0.30	<0.2	Up to standard
Cu（mg/kg）	≤50	19	Up to standard

2. Water quality

- The swimming of fishes could increase the dissolved oxygen in the water, so as to improve the water quality.



According to the water sample test report, the water quality of rice-fish culture system is better than that of the general paddy fields.

Table 5 The test report of water quality in paddy field

Items	Limit value	Result	Decision
Las（mg/L）	≤5	Not detected（<0.05）	Up to standard
pH	5.5-8.5	8.17	Up to standard
Total salt content（mg/L）	≤1000C（Non saline land area ） ≤2000C（Saline land area）	21	Up to standard Up to standard
Chloride（mg/L）	≤350	2.7	Up to standard
Sulfide（mg/L）	≤1	Not detected（<0.005）	Up to standard
*T Hg（mg/L）	≤0.001	Not detected（<0.0001）	Up to standard
Cr（mg/L）	≤0.01	Not detected（<0.0001）	Up to standard
Total arsenic（mg/L）	≤0.05	Not detected（<0.007）	Up to standard
Chromium(six value)（mg/L）	≤0.1	Not detected（<0.004）	Up to standard
Cu（mg/L）	≤0.5	Not detected（<0.01）	Up to standard
Zn（mg/L）	≤2	Not detected（<0.006）	Up to standard
Se（mg/L）	≤0.02	Not detected（<0.00025）	Up to standard
Fluoride（mg/L）	≤2（General area） ≤3（High fluorine area）	Not detected（<0.05）	Up to standard
Cyanide（mg/L）	≤0.5	Not detected（<0.25）	Up to standard
TP（mg/L）	-	Not detected（<0.01）	Up to standard

3. Diseases and insect pests

- Five years of field experimental study shows that controlling sheath blight and rice planthopper by fishes is similar to conduct pesticide treatment in rice monoculture system.


Ecological mechanisms underlying the sustainability of the agricultural heritage rice–fish coculture system





4. Rural landscape

- Since 2005, the government try to improve the conditions of road, water, toilet, afforestation, brightness and beautification in the countryside each year by granting tens of millions of fund.





Improved the living conditions and the residential environment.

5. Farmland landscape

- Through the creative agriculture, the farmland landscape construction has achieved rapid development.



Samsara pattern



Heart pattern

6. Water environment

- Since the “Five water governance”, Qingtian County has actively explored the ways and methods of water control, which creates a good atmosphere of caring, supporting, participating and supervising the water environment.



7. Household garbage

- Since 2006, Qingtian County implemented the centralized waste collection and disposal. The centralized processing rate of rural waste in Qingtian reached to 51.4%, which significantly improve the ecological environment.



8. Path between fields

- In order to prevent the field paths from collapse as well as reduce the cost of peasants' labor, many villages with rice-fish culture system began to harden the field paths.



VI. Problems and Countermeasures

1. There are some dead ends for rural environment sanitation, it is necessary to further strengthen the governance.



Near the village squares

2. Wild animals (egret) have lead to serious damages, which shall be dealt with by taking effective measures.



More and more began to fish in the rice fields;
Egrets belong to the second-class national protected animal;
People have to use net to prevent the egrets.

3. The path harden project can save labor and enhance efficiency, but its long-term ecological impact remains to be seen.

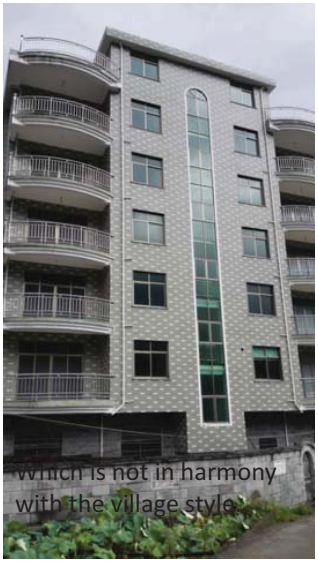


reduced the farmland biodiversity;
may become a barrier to biological communication.

4. Ancient buildings lack protection, and new buildings need unified planning and construction.



many old buildings have been dilapidated;
more and more concrete structure buildings with 3 to 6 floors and luxurious styles are constructed.




Thanks !

Special Session 7

『Discussion on GIAHS Tourism and Its Monitor』

Ms. Sun, Yehong (Associate Professor, Tourism College of Beijing Union University)

DISCUSSION ON GIAHS TOURISM AND ITS MONITOR

YEHONG SUN
PHD/ASSOCIATE PROFESSOR

TOURISM COLLEGE OF BEIJING UNION UNIVERSITY
INSTITUTE OF CULTURAL AND HERITAGE TOURISM
2016-06-14

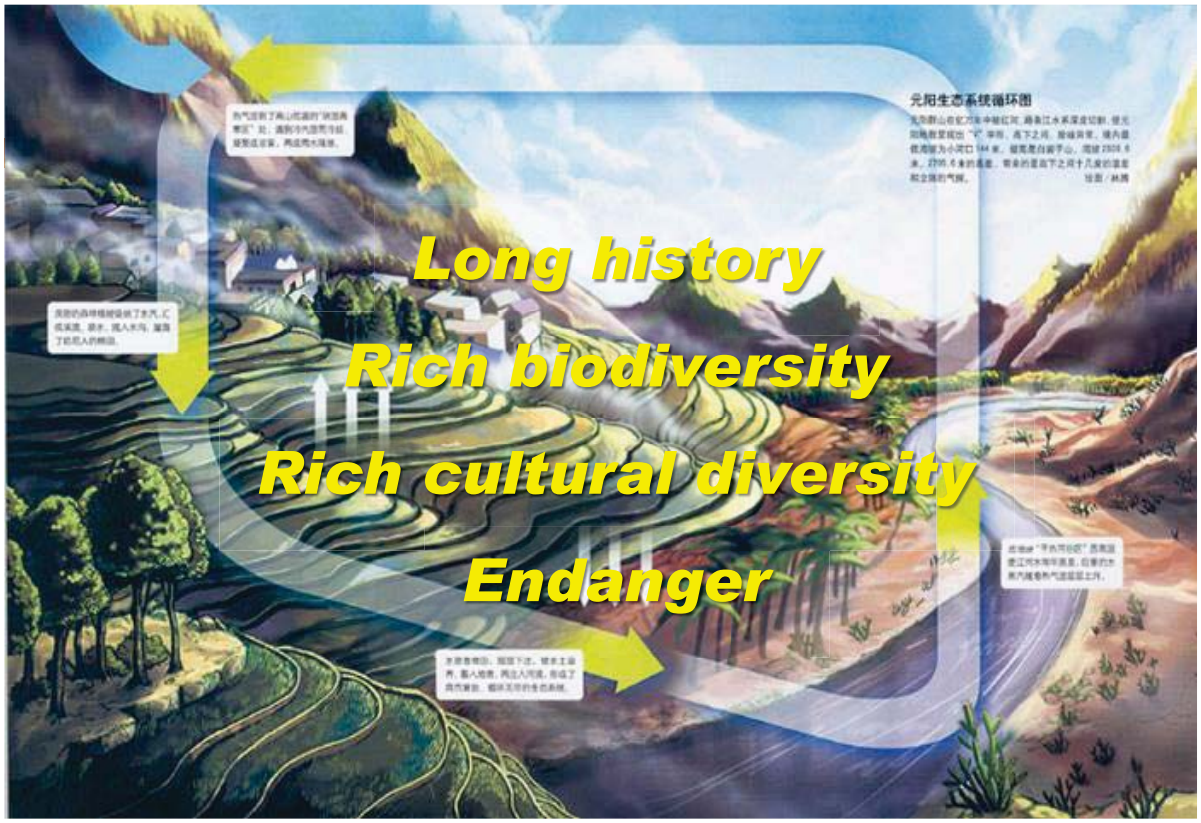
Outline

- Understanding GIAHS tourism
- Key issues in GIAHS tourism development
- GIAHS tourism monitor framework
- Conclusion & discussion (Q&A)

GIAHS is about the future not the past



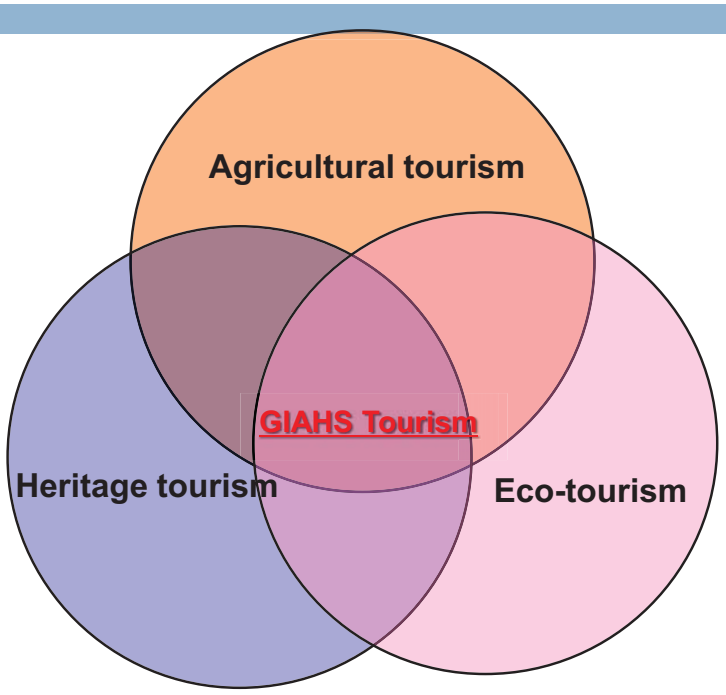
Biodiversity can be seen as a "life insurance policy for life itself" - Something specially needed in this time of fast-paced global change. ***Kofi Annan***



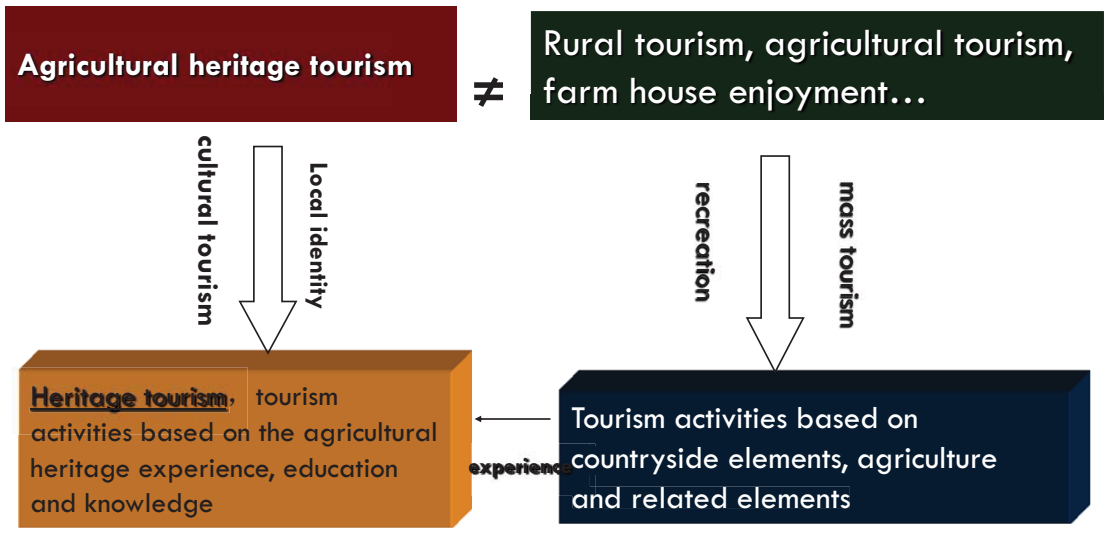
Why tourism?

- People are attracted by the fame of agricultural heritage sites.
- many recent examples of tourism actually supporting the conservation of heritage sites and artefacts (Alzue et al. 1998; Herbert 2001; McKercher et al. 2005)
- FAO dynamic conservation approach

GIAHS Tourism



GIAHS Tourism



Several key issues in GIAHS tourism development

- Characteristics as tourism resources & landscape
- Community significance
- Balance of commodity and conservation

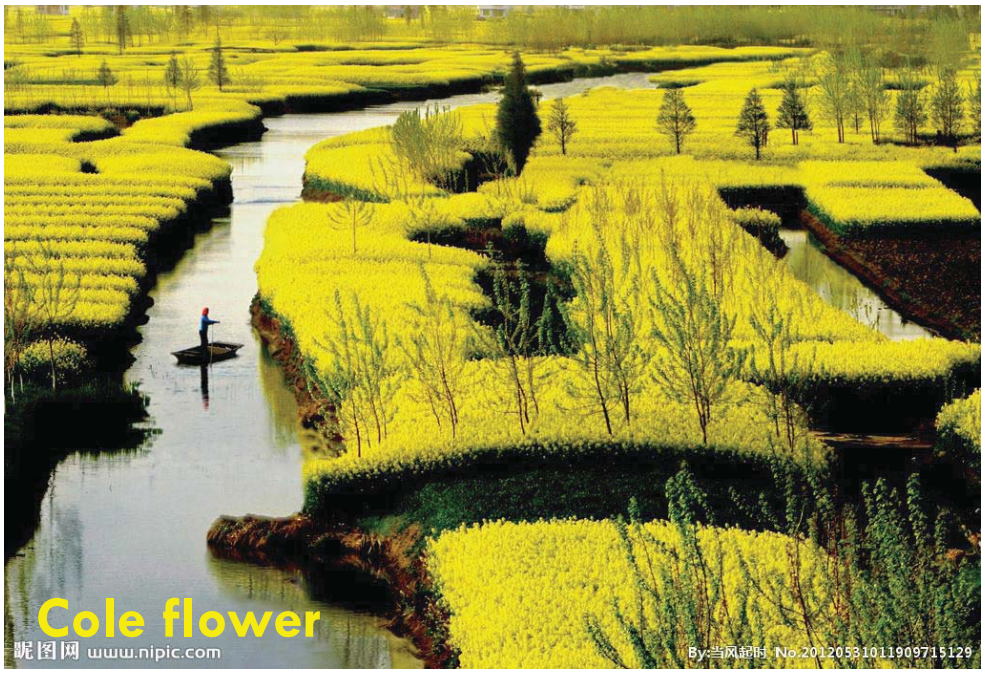
Characteristics as tourism resources & landscape

- **A living heritage:** farmers are living the heritage, but not living with the heritage.

  Consider more livelihood of the farmers

- **Eco-vulnerability:** the object is easy to be damaged with low resistance capacity and hard to be recovered(Qiao et al., 2008).

  Landscape design need to consider more about the biodiversity, water and land conservation.



Xinghua Duotian Agrosystem, China



Characteristics as tourism resources & landscape

- **Culture sensitivity:** one culture is easy to be affected by the other culture, and lose the features itself, especially for those culture which is not mainstream.

  Pay attention to the demonstration effect of tourists.

- **Seasonality of the landscape**

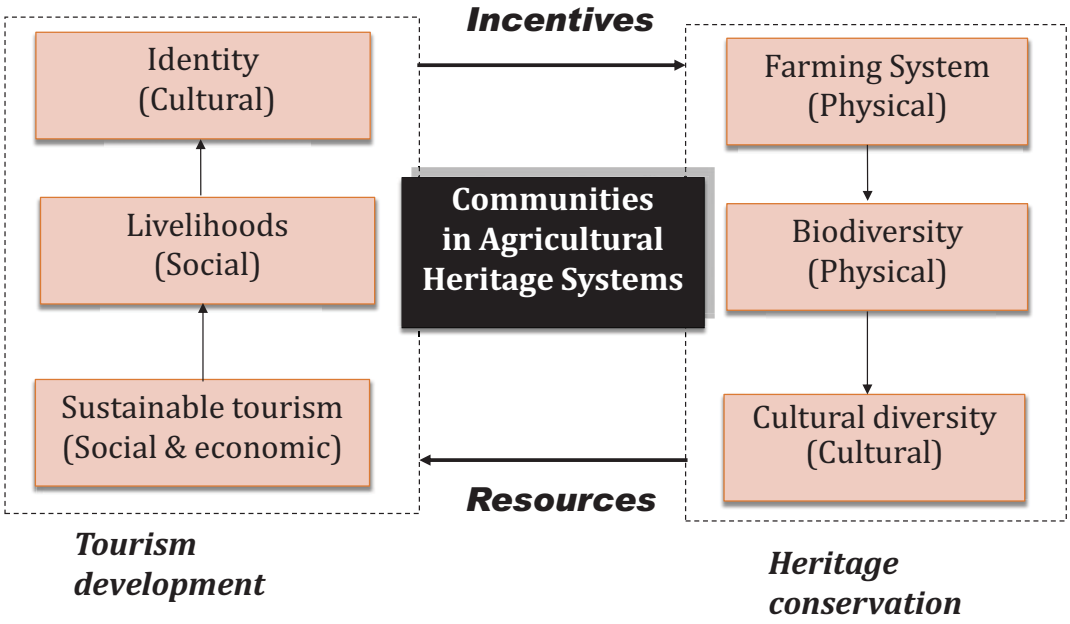
Consider the seasonal features of the landscape.



Community significance

- Local community is the owner of the GIAHS;
- Biodiversity and cultural diversity was created in the daily lives of local community;
- Improve the livelihood is one of the main purposes of GIAHS conservation

An integrated model of a community based agricultural heritage system conservation and tourism development



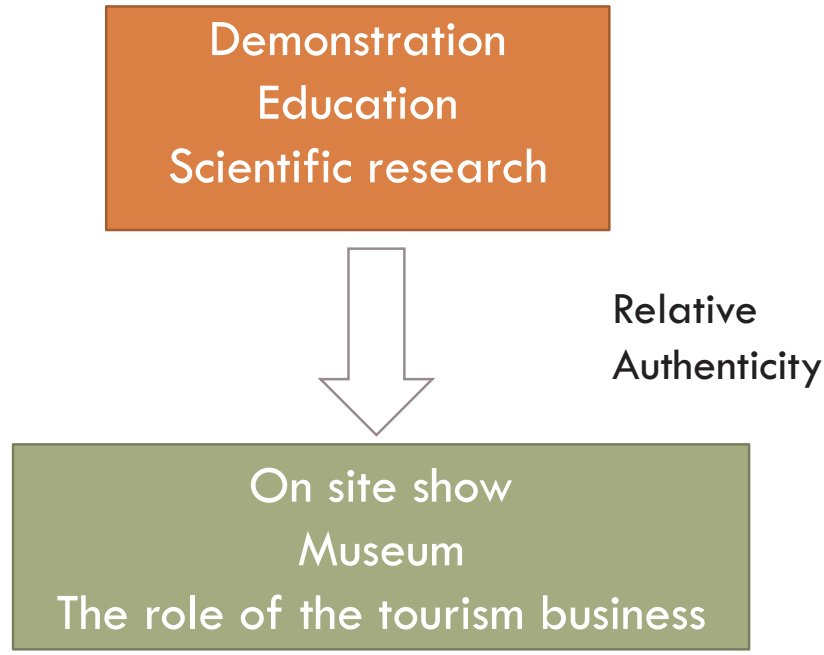
Balance of commodity and conservation

- Merchandized and lose authenticity

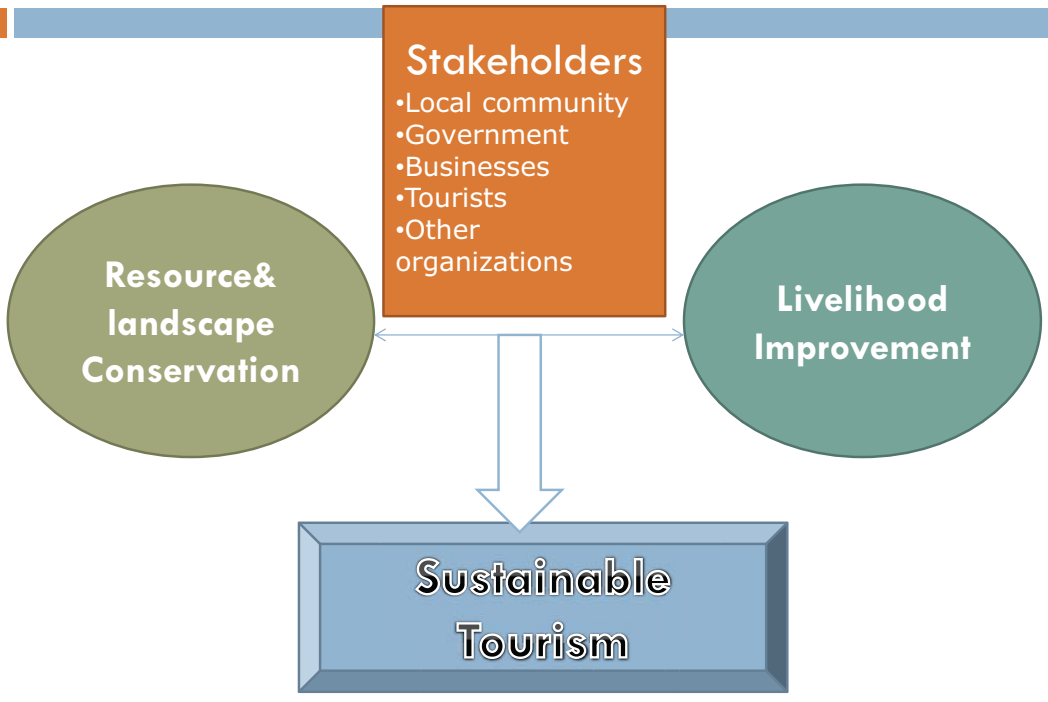




Balance of commodity and conservation



GIAHS tourism monitor framework



Sustainable tourism indicators
测量指标 (UNWTO,1996)

No	Indicator	Specific measures
1	**Site protection**	Category of site protection according to IUCN index
2	**Stress**	Tourist numbers visiting site(per annum/peak month)
3	**Use intensity**	Intensity of use in peak period (persons per hectare)
4	**Social impact**	Ratio of tourists to locals (peak period and over time)
5	**Development control**	Existence of environmental review procedure or formal controls over development of site and use densities

No	Indicator	Specific measures
6	**Waste management**	percentage of sewage from site receiving treatment (also structural limits of other infrastructural capacity on site, such as water supply)
7	**Planning process**	Existence of organized regional plan for tourist destination region
8	**Critical ecosystem**	Number of rare/endangered species
9	**Consumer satisfaction**	Level of satisfaction by visitors (questionnaire based)
10	**Local satisfaction**	Level of satisfaction by locals (questionnaire based)
11	**Tourism contribution to local economy**	Proportion of total economic activity generated by tourism only

Some index design for GIAHS tourism

Index	Conservation	Tourism development
Tourist no./income	Stress/Use intensity	Tourism contribution to local economy
GIAHS tourism service(restaurant/ accommodation /transportation/sightseeing/commodity/entertainment)	Development control/Waste management/Social &cultural impact	Consumer satisfaction
Tourism categories & site selection	Critical ecosystem	Planning process
Interpretation /Tourist education	Knowledge of GIAHS	Experience improvement

Thank you for your listening

Q& A

sunyehong@buu.edu.cn