Globally Important Agricultural Heritage Systems (GIAHS) in China: Models in Agroecology

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Agroecology and the Globally Important Agricultural Heritage Systems (GIAHS)
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Outline

- GIAHS in China
- Agroecology in GIAHS
- Contributions to Sustainable Development
GIAHS in China

- In June 2005, Qingtian Rice–Fish Culture System in China was designated as one of the five first GIAHS pilot sites in the world.
- In February 2009, FAO/GEF GIAHS project was officially launched in Beijing.
GIAHS in China

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

- In August 2015, Measures on the Administration of Important Agricultural Heritage Systems was implemented.

- In October 2015, FAO/GEF–GIAHS Project China Pilot Summary Meeting and 10th Year Anniversary of GIAHS Qingtian RFC was held.
By the end of 2016, there are a total of 62 China-NIAHS, including 11 GIAHS.
Wannian Traditional Rice Culture (June, 2010)
Kuaijishan Ancient Chinese Torreya Community (June, 2013)
Xuanhua Traditional Vineyard system (June, 2013)
Fuzhou Jasmine and Tea Culture System (April, 2014)
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Typical Compound Agroecosystem
A Pool of Genetic Resources
Mutualism of Multiple Species
Optimal Landscape Structure
Multiple Ecological Functions
RM: $y = 0.7202x + 9.2019$
$R^2 = 0.5388$, $P<0.05$

RF: $y = 0.3011x + 20.179$
$R^2 = 0.0134$, $P>0.05$

Pesticides (a.i., kg ha$^{-1}$) vs. Rice yield stability ($S$)

Density of planthoppers (number.m$^{-2}$) vs. Experimental year

Incidence of rice shealth blight (%) vs. Experimental year

Weed infection (g.m$^{-2}$) vs. Experimental year

Research in Agroecology
The summit of East Guanyin Mountain
Honghe River valley
Crop strength through diversity

Conventional farming, single varieties of crop plants are grown alone. But using varieties may be a better option: several rice strains, planted together on a large scale, are more resistant to a major fungal disease.

Genetic diversity and disease control in rice


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Crop heterogeneity is a possible solution to the vulnerability of monocultured crops to disease1–3. Both theory4 and observation5–7 indicate that genetic heterogeneity provides greater disease suppression when used over large areas, though experimental data are lacking. Here we report a unique cooperation among farmers,
HANI HARMONY

This is an isolated paradise where man and nature have lived happily together for generations. But besides being a favorite perch for photographers all over the world, the Honghe Hani Rice Terraces deserve recognition for more than just scenery for pretty pictures. The China Daily Sunday town of Wang Hao, Pudong D. Loh and Cang Lide takes to the hills and roots out the reasons why.

The Hani have a song to lift their spirits and they have discovered the joy of their harmonious harmony. While the days may be harsh, the nights can be cool. They have a saying that keeps the Hani in tune with their environment. In the ancient Hani language, the words are: “The rice terraces are a mirror to the heaven, the trees are the living gods, the birds are the messengers of the gods, and the music of the terraces is the voice of the gods.”

The Honghe Hani and Yi autonomous prefecture lies on the north bank of the Honghe River, and it is the setting for the China-Indonesia Friendship Park. It is the oldest terraced rice field in the world, and it was inscribed on the UNESCO World Heritage List in 2013. The terraced fields are all in the shape of isosceles triangles, with the longer side facing the slope of the hill.

A local husband and wife couple explained that the terrace is the rice field, and the top is always cleaned. It is only the lower part that is left for planting. The terrace is divided into upper and lower sections, and the upper section is planted with vegetables. The lower section is for the rice field.

Inside the terrace, there is a small stream that flows through the hillside. The water is clear and clean, and it takes a lot of work to maintain it. The terrace is divided into upper and lower sections, with the upper section for vegetables and the lower section for rice. The terrace is divided into upper and lower sections, with the upper section for vegetables and the lower section for rice. The terrace is divided into upper and lower sections, with the upper section for vegetables and the lower section for rice. The terrace is divided into upper and lower sections, with the upper section for vegetables and the lower section for rice.

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Green food production

- A rice-fish production cooperative was founded in 2008 with 80 households.
- The rice and fish produced by the coop got national green food certification in 2014.
- The leader won the title of "model farmer" in the Asian and Pacific Region in 2014.
Organic food production

- Aohan dryland farming system brings organic products with good quality and reputation.
- Several enterprises were introduced by the local government, which helped develop these products.
- The specialties thrive and have built their brands.
Further processing

Jiaxian County earned the name of "County of Organic Jujube" in China.

Premium organic jujubes are processed to jujube juice, jujube yogurt and jujube wine.
Jasmine tea is made through scenting of the mixture of baked green tea leaves and jasmine flower buds.

The essential oil extracted from jasmine flower is used to scent soaps, bath foams, and perfumes.
Further processing

- **Pu'er tea** can be loose tea or compressed tea in desired shape.

- The **tea essence** is instant tea with high purity, made through extraction, concentration and drying of the raw tea.
Tourism activities

- **Xuanhua traditional vineyard** is a unique landscape that attracts tourists.

- The first grape planting cooperative was founded in 2013, which developed eco-tourism through **sightseeing and picking**.
Tourism activities

- **Auspicious characters and symbols** were sowed into the terraces with rapeseed plants to attract visitors in the spring.

- Tourists can taste the fresh **rice and fish meals** in the old style restaurants and taking home some of the dried fish.
Tourism activities

- **Xinghua duotian agrosystem**: marigold grown on duotian blooms in autumn and crabs raised in water also mature in autumn.

- Xinghua government promoted a tourism activity called "taste the crab, enjoy the marigold" in the autumn of 2014.
Museum exhibitions

Qingtian rice-fish culture museum is comprised of a culture exhibition center, a scientific research center, a technical training center and an exhibition and sales center of agricultural products.
Museum exhibitions

- Jasmine tea cultural and creative industry park is composed of a cultural museum, an exhibition area of traditional crafts, a jasmine breeding garden and an exhibition and sales center of creative products.
Thank you for your listening!

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