



The GIAHS traditional wisdoms to promote healthy diets in China



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1. Challenges in global agricultural and food systems

- Increasing food insecurity (hunger and obesity, etc.)
- Environmental degradation
- Declining varieties of food, lack of taste and flavor
- Occurring frequently food safety issues

Challenges: Increasing food insecurity

- ✓FAO and other 4 UN institutions jointly released *The State of Food Security and Nutrition in the World 2020*. In **2019, nearly 690 million people are hungry, or 8.9 percent of the world population**, up by 10 million people in one year; if adding population suffering with moderate or severe food security, **around 200 million people in the world had no access to safe, nutritious and sufficient food**. If the trends continue, UN 2030 SDGs target, Zero Hunger, will not be met on time.

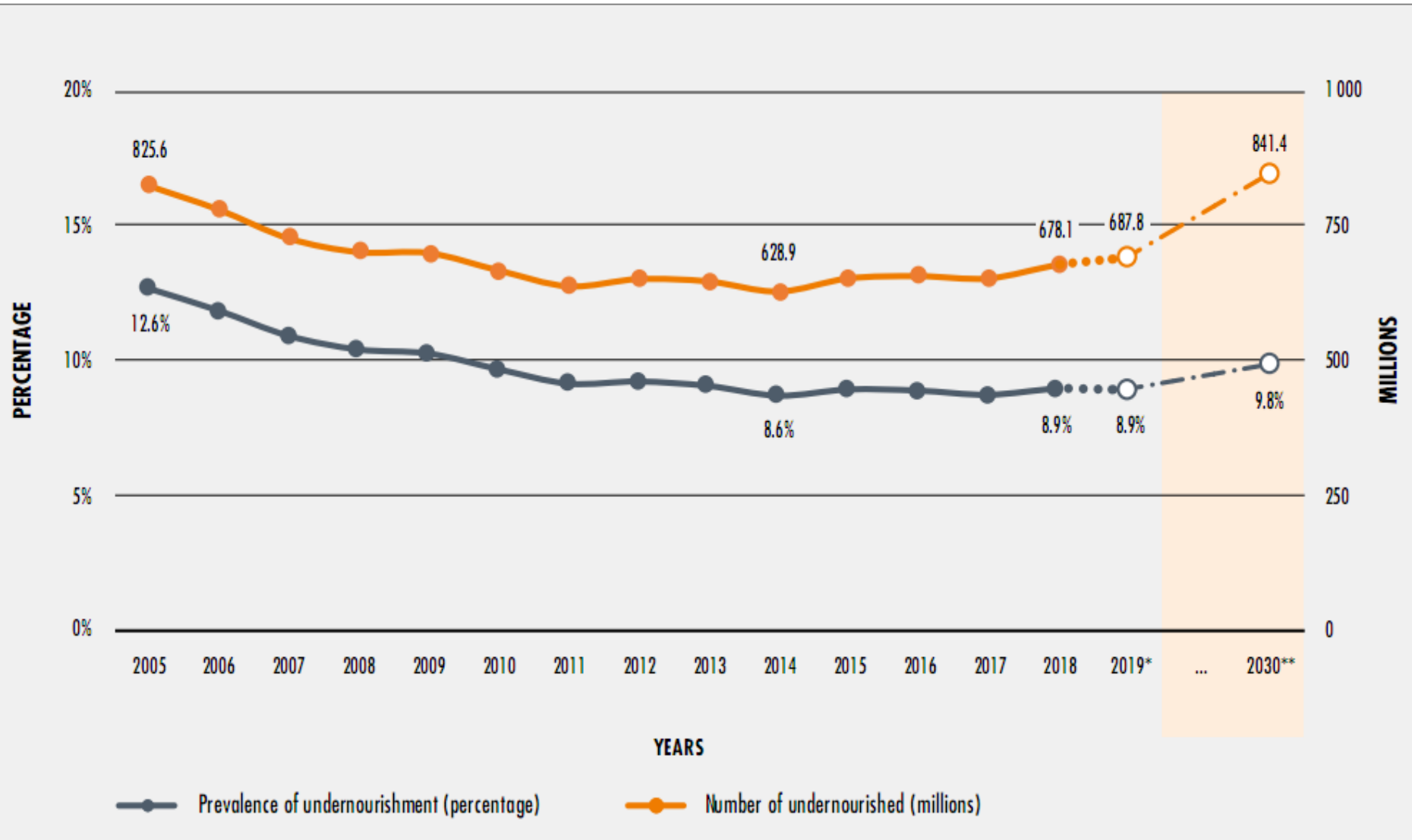


Figure 1 The number of undernourished people and the incidence of undernourished people in the world since 2005 (million, %)

Source: *The State of Food Security and Nutrition in the World 2020*. FAO, 13 July 2020.

Challenges

- ✓ Environmental degradation: soil pollution and degradation, ecological fragility, disappearing biodiversity. Increasingly homogenous crop varieties and livestock breeds and germplasm resources, industrial farming and production methods.
- ✓ Decreasing varieties of food, lack of taste and flavor.
- ✓ Food safety issues occur frequently, leading to an increase in human diseases and health problems. Unsafe food is responsible for a large number of illnesses (caused by agents such as bacteria, viruses, parasites, mycotoxins, chemical contaminants, heavy metals and natural toxins)

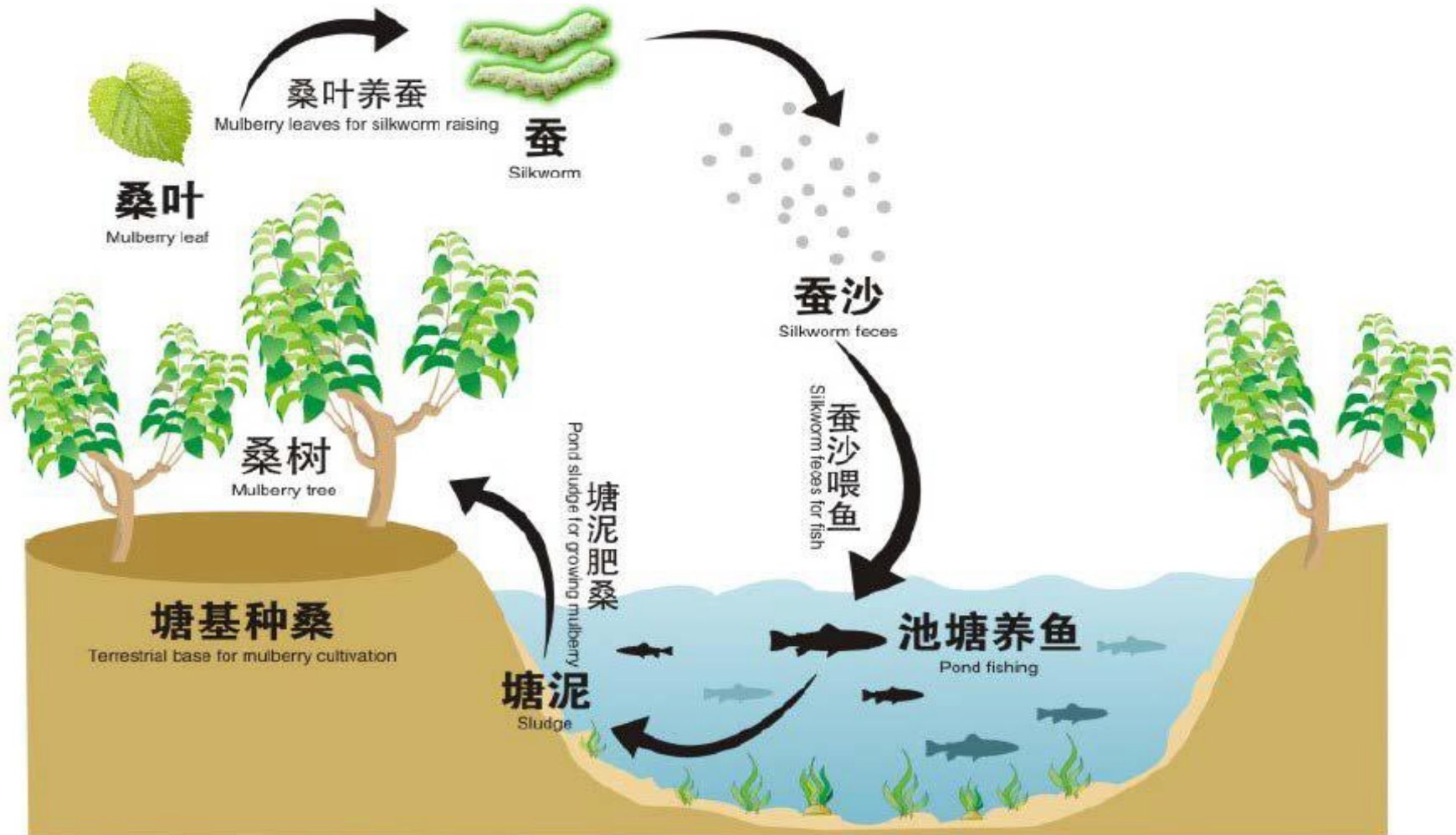
➤ The GIAHS traditional wisdoms embodied in different stages and links of production, resource management and consumption can contribute to resolve those challenges and contribute to 4 **Betters** (better production, better nutrition, a better environment and a better life) advocated by FAO.

2. Compound and diversified ecosystems and production methods

- Diversified and abundant varieties and germplasm resources
- Reasonable land use structures for diverse food demand
- Traditional knowledge and techniques



GIAHS is a Compound and recycling system

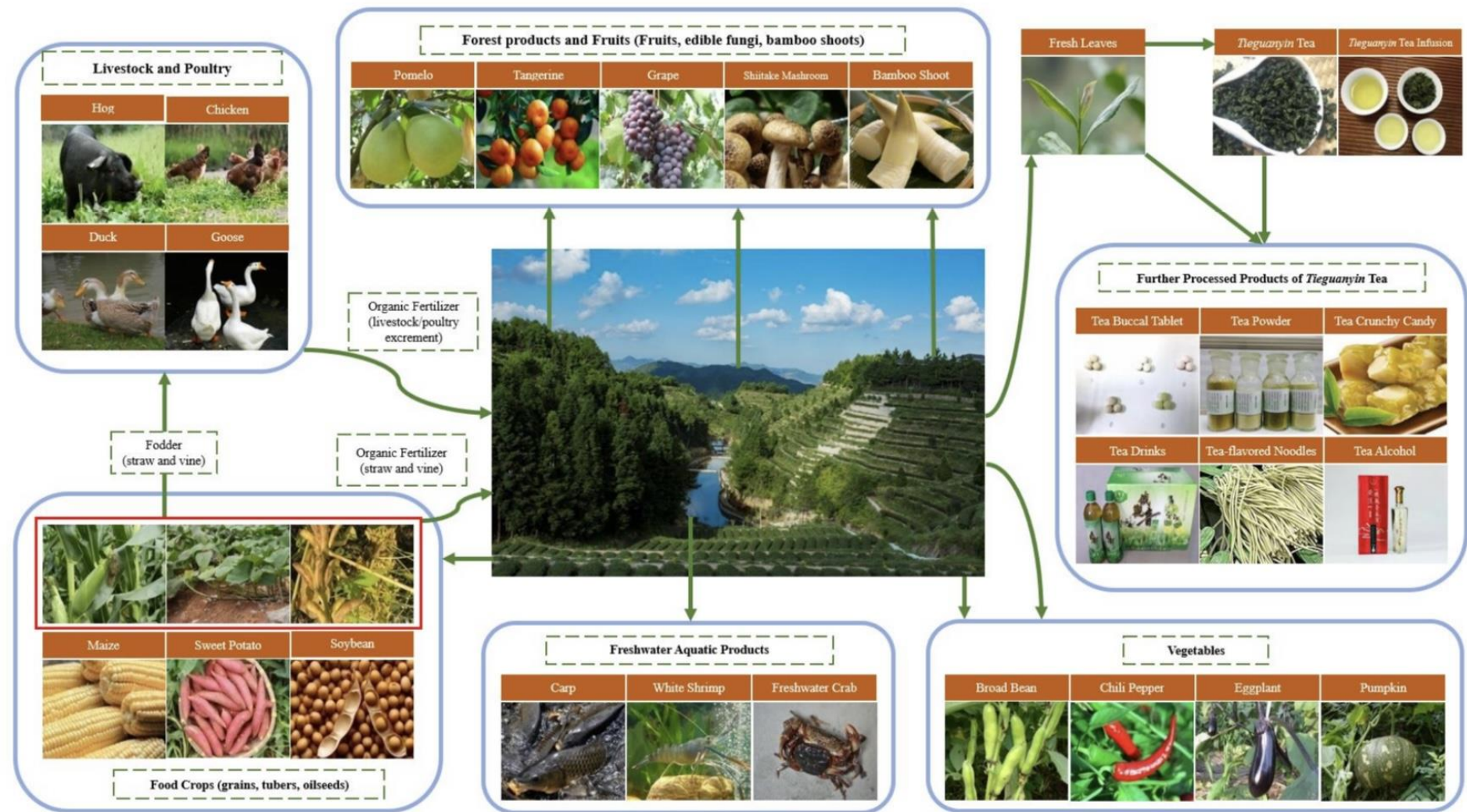


Huzhou Mulberry -dyke & Fish Pond System, China

...diversified and abundant varieties and germplasm resources

- Application of various and abundant germplasm resources, adapted to local environment and production conditions; e.g. more than 100 local varieties of red rice in the Honghe Hani Rice Terraces of Yunnan Province; also **promotes species/varieties diversifications and biodiversity conservation.**

...reasonable land use structures for diverse food production

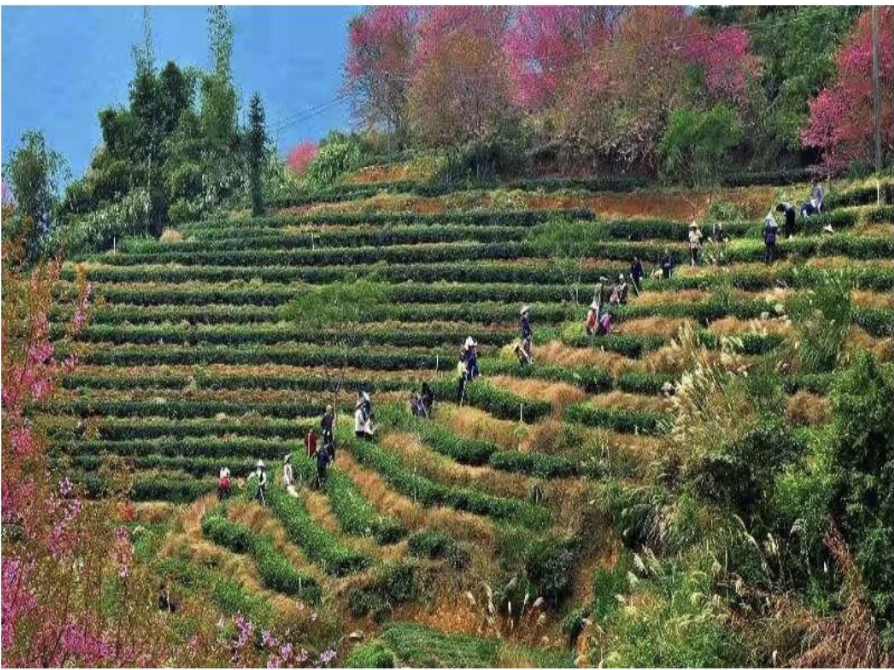


Foods Provided by “Anxi Tieguanyin Tea Culture System”

...traditional knowledge and techniques

➤ involves the entire production and processing process.

In the case of tea, including tea plantation site selection, drainage and irrigation ditch construction, ecological planting and management of tea, soil and water management, pest and disease prevention and control, etc., and tea production.



Wide Terrace Gardens



a

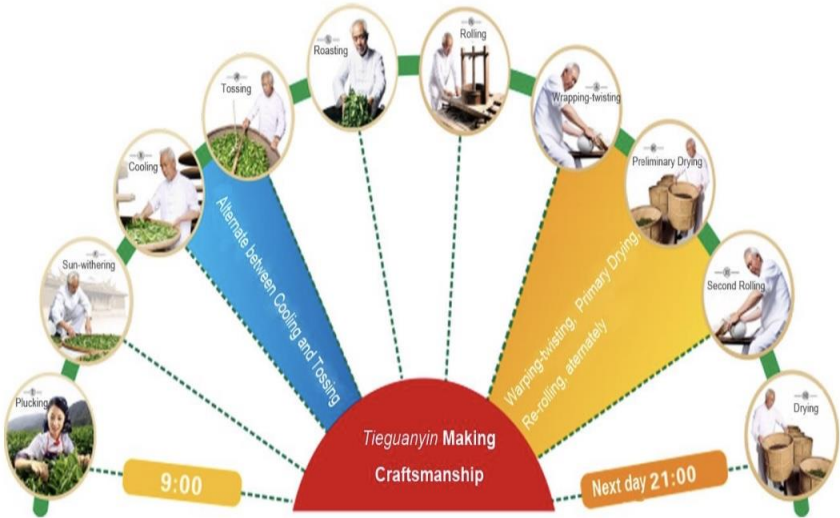


b

Tea tree whole-branch layering propagation method (a) and long-scion cutting method (b)



Mulching tea gardens with grasses



Primary Processing Procedures of Anxi Tieguanyin

3. Sustainable environmental management and maintenance

- The philosophy of harmony between man and nature advocates for natural farming methods
 - farmers of forty centuries**, or, permanent Agriculture in China, Korea and Japan, by Franklin Hiram King (1911), still very popular in China, in particular in the farming practices in the GIAHS sites...
- Adopting environmentally friendly ecological agriculture, farming practices of efficient resources recycling
- Scientific management and distribution of resources such as soil and water (e.g. the water distribution system in Hani terraces)

Agroecological and other innovative approaches

*for sustainable agriculture and food systems
that enhance food security and nutrition*

A report by

The High Level Panel of Experts

on Food Security and Nutrition

July 2019

Box 6 Traditional rice–fish–duck system in Hani terraces, Southwest China

The rice–fish–duck system is an important traditional agroecosystem in Hani terraces in Yunnan Province, Southwest China. Integration of crops and animals and circular economy are at the heart of this system. Fish and ducks eat weeds and pests and loosen the soil to improve the growing environment for rice, while rice provides food, shade and shelter for fish and ducks.

Pesticides and herbicides cannot be used in this system because of their toxicity to fish and ducks. Therefore, products from rice–fish–duck systems are very popular in consumer markets. Their prices are usually several times higher than the prices of conventional products. For example, the prices of red rice, fish and ducks raised in paddies in Hani terraces are respectively 5, 3 and 2.5 times higher than conventional prices.

An improved rice–fish–duck system has been experimented with in Hani terraces and is now popularized. The agroecosystem efficiently exploits the three-dimensional space (and seasonality) of paddies for developing rice–fish co-culture during the crop growing season while ducks are reared in winter during the fallow period. Its economic value is estimated to be 7.8 times that of the current

Box 27 A successful multi-stakeholder collaboration to develop agroecosystem multi-functions for maintaining eco-agricultural landscapes in China

Longji terraced landscapes in Guangxi Zhuang Autonomous Region, southwest China, designated by FAO as a GIAHS in 2018, are a land-use mosaic comprised of forests, villages, rice terraces and rivers. The forests on the top of the mountains conserve water for rice-growing and domestic water for residents. Terraces produce food and conserve soil and water. Villagers persist in repairing terraces and using clean production patterns for food. They commonly form a circulatory agroecosystem. With urbanization, low economic benefits have challenged its viability. To address this problem, local farmers cooperate with tour companies to develop tourism, taking advantage of the outstanding rice-terraced landscapes and clean farming approaches. They commonly made and agreed on a series of contracts for terraced-landscape conservation and sustainability of tourism development. Local villagers can expect to obtain earnings from not only agriculture, and the services they provide for tourists such as restaurant and hotel operation, but also the tourism income dividend (TID) and the compensation fund for maintaining terraces (CMT) paid by the tourism industry. In 2017, the average total income of households was Yuan Renmimbi 78 131. Of this, agricultural income constitutes just 7 percent of the total local income; the services for tourists account for 71 percent; TID and CMT constitute 19 percent and 4 percent, respectively. Overall, the goal is to develop agroecosystem multi-functionality sustained by local stakeholders who protect terraced landscapes effectively and benefit through improved household income.

Source: Zhang *et al.* (2017)

3. Sustainable environmental management and maintenance (cont.)

- Adopting environmentally friendly ecological agriculture, farming practices (wide use of organic fertilizers, recycling use of resources, etc.).
- Sustainable and scientific management of natural resources such as soil and water (e.g. the water distribution system in Hani rice terraces)
- Highly efficient management and use of natural resources contribute to the environment protection.

Comparison between contents of soil nutrition in the Hani terraces and national standards of pollution-free food (2012)

Nutrient types	Mean value of soil of rice field in Hani terraces	National standard on green food producing area (NY/T391—2000)	
		Grade	Content
Organic matter (g/kg)	25.09	I	>25
		Ⅱ	20～25
		Ⅲ	<20
Total N (g/kg)	1.25	I	>1.2
		Ⅱ	1.0～1.2
		Ⅲ	<1.0
Available P	15.48	I	>15
		Ⅱ	10～15
		Ⅲ	<10
Rapidly available K	120.16	I	>100
		Ⅱ	50～100
		Ⅲ	<50

4. Healthy diets and rich nutrition

- The agricultural products produced from GIAHS are original, diversified, natural and fresh, considered as high-quality;
- The food has the following characteristics: **healthy, tasty, diversified, nutritive, local, unique**, etc.
- Healthy diets are conducive to prevent malnutrition and obesity (balanced intake of nutritional elements)

4. Healthy diets and rich nutrition(cont.)

- 15 GIAHS-theme restaurants are opened in Huzhou, China (where mulberry dike-fish pond is located) and have been well received and widely praised by consumers.

创意“全羊宴” 美食甲天下



Selected food from GIAHS in China

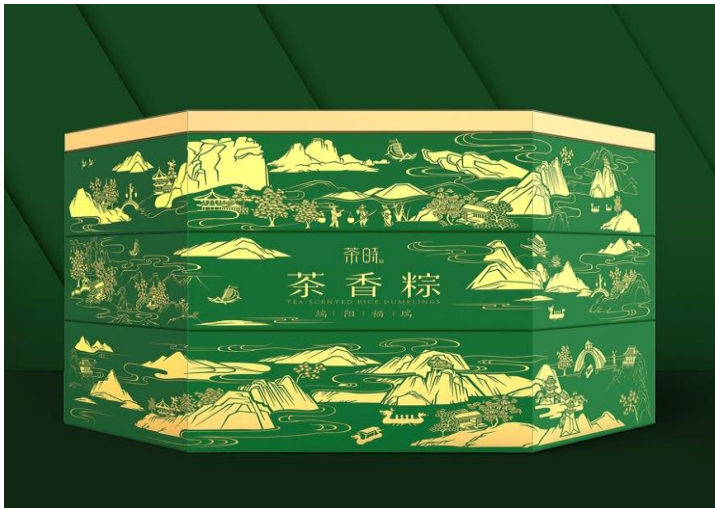
Special food and local cuisine



Dried fish in Qingtian



Hani Sauce comprising 30 ingredients



Tea flavored rice dumplings, Fujian



Jiema pork in Diebu, Gansu

特色餐饮

垛田地区土地肥沃、物产丰富，鱼、虾、蟹、鳖、螺、蚌、蚬等水产品四时不绝，并有藕、菱、芋头、茼蒿、茨菇、香葱等特色农产品，为餐桌提供了丰富的食材，其中兴化龙香芋为《舌尖上的中国》所推荐，“芋头红烧肉”、“蟹黄汪豆腐”等成为兴化特色美味，更有“吃芋头、遇好人”的美好祝愿。



芋头红烧肉



清蒸大闸蟹



清水小龙虾



茨菇炒大蒜



蟹黄汪豆腐



扁豆烧芋头



鱼圆



醉虾



香葱炖蛋



Long Street Banquet, Hani, Yunnan (from Internet)

5. Better and happy life

- Natural and beautiful landscapes, Pastoral Life
- Traditional, unique, interesting, exotic, well-preserved culture
- Rich historical and human stories
- Employment creation

...Natural and beautiful landscapes, Pastoral Life

- Natural and beautiful landscapes attract the tourists;
- Traditional food from the land brings people back to a simple and happy life;
- More urbanites are taking their children on trips to the countryside to feel and experience the farming culture and agricultural production process.





[兴化风光]班映 摄

...traditional culture and historical stories

- Traditional culture created within GIAHS is preserved and passed on.
- The production and harvest celebration processes of GIAHS have formed unique historical and human stories that enhance people's attachment to their hometown and land.

...employment creation

- Promote rural employment, especially for women (women account for about 50% of the agricultural labor force for farming activities).
- Meanwhile the development of the whole industry chain of GIAHS and the emergence of new business models are attracting more and more young people returning to their hometown to start their own businesses.

Although China now has 15 GIAHS, ranking first in the world, it is still far from enough compared with the people's expectation for a better life and the requirements for the transformation of the food and agricultural systems.

Thanks for the Chinese government agencies for providing photos in this presentation.