

The impact of rural tourism on GIAHS site: from the perspective of smallholder farmers

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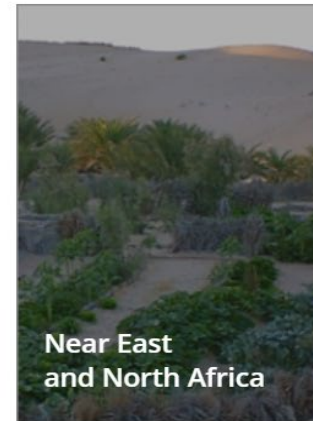
Discussions

Backgrounds

A legacy for the future

- In 2002, the FAO launched the Programme on Globally Important Agricultural Heritage Systems (GIAHS).
- A GIAHS is a living, evolving system of human communities in an intricate relationship with their territory, cultural or agricultural landscape or biophysical and wider social environment (FAO, 2021).

74 systems, 24 countries



Backgrounds

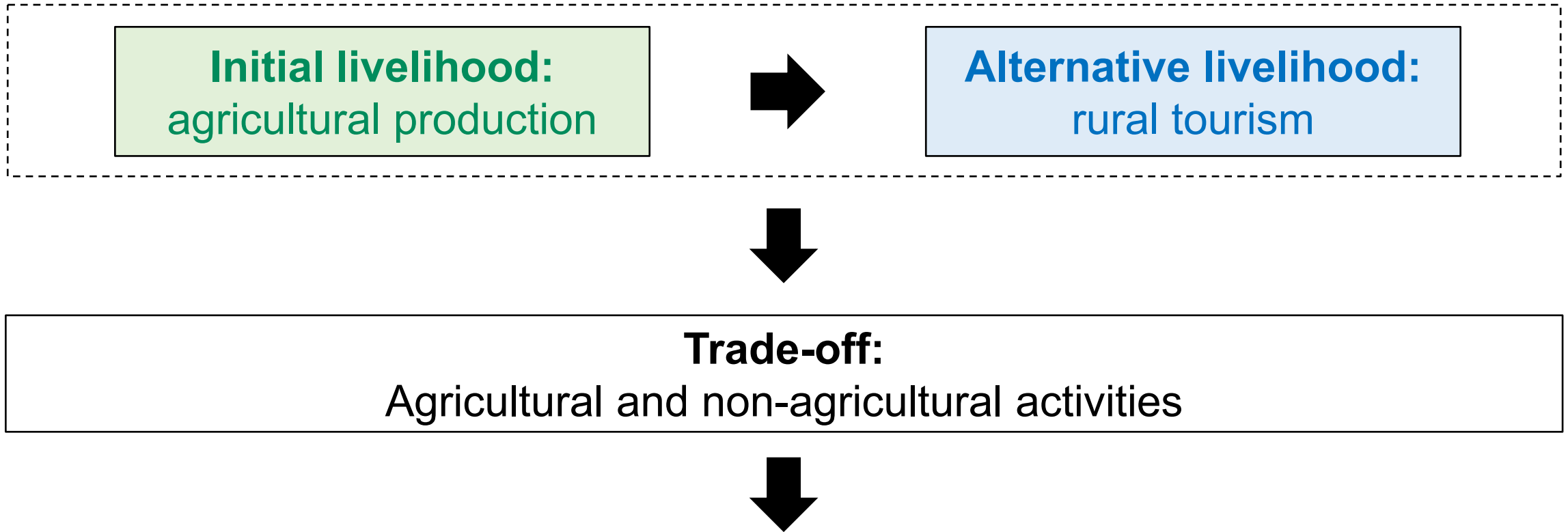
The importance of farmers' livelihoods

- At GIAHS sites, the smallholder farmers' livelihood activities shaped the landscape and the biological environment of agricultural systems to different degrees.
- Diebu Zhagana Agriculture-Forestry-Animal Husbandry Composite System in Gansu Province



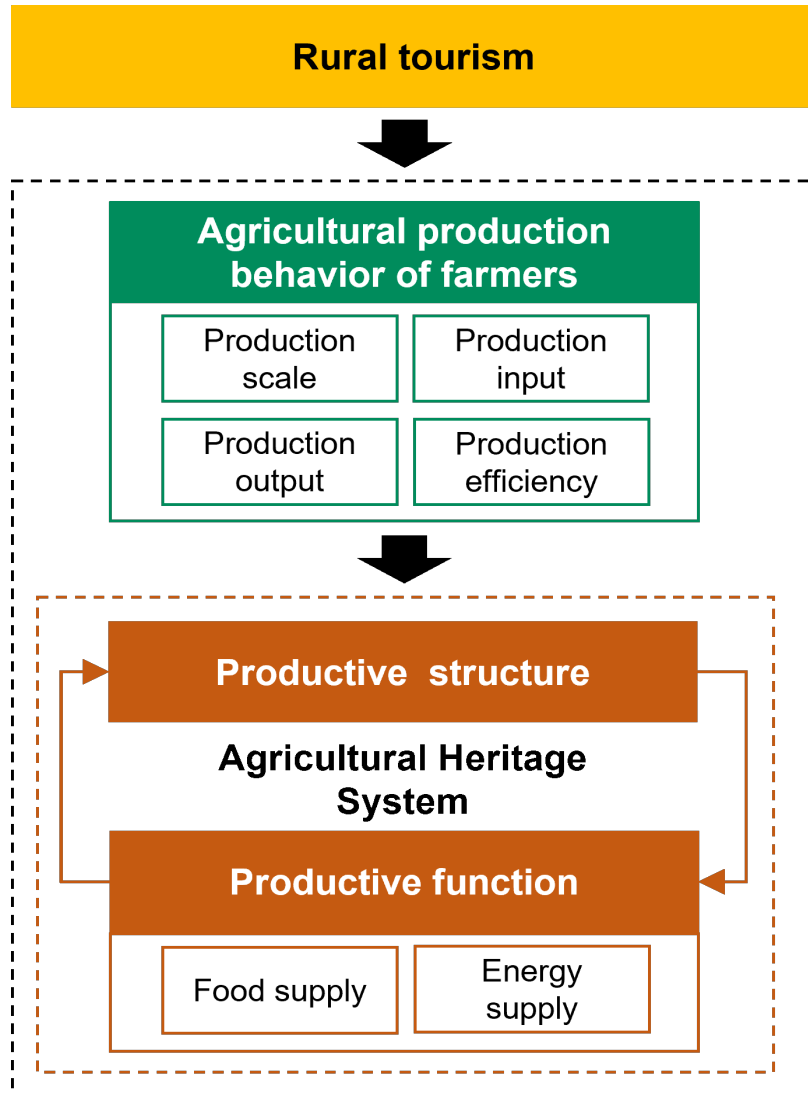
Backgrounds

Livelihood transformation



- **Key issue:** at the GIAHS site, how is agricultural production changing under the development of rural tourism?

The conceptual framework

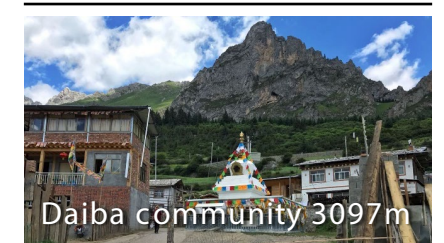
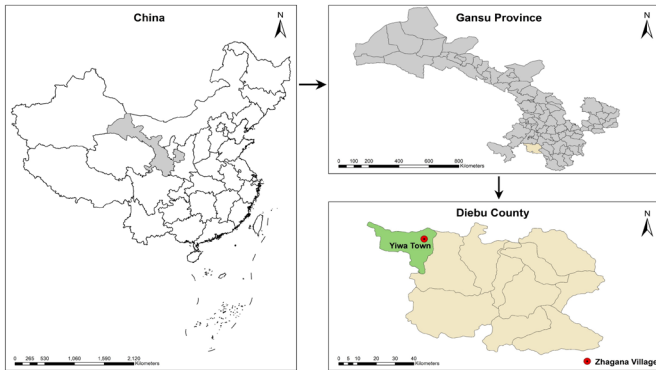


Index type	Index name	Index definitions
Production scale	Area of farmland	The area of farmland is operated or utilized by farmers.
	Number of livestock on woodland	The number of livestock farmed by farmers on woodland.
	Number of livestock on grassland	The number of livestock farmed by farmers on grassland.
Production input	Material input on farmland	The amount of seeds, fertilizers, and pesticides put into farmland.
	Labor input on farmland	The human force and animal force input by farmers to farmland.
	Material input on woodland	The actual amount of feeds that farmers put into woodland.
	Labor input on woodland	The human force and animal force input by farmers to woodland.
	Material input on grassland	The actual amount of feeds that farmers put into grassland.
	Labor input on grassland	The human force and animal force input by farmers to grassland.
Production output	Food products from farmland	The number of products that farmers can obtain as food from farmland.
	Energy products from farmland	The number of products that farmers can obtain as energy from farmland.
	Food products from woodland	The number of products that farmers can obtain as food from woodland.
	Energy products from woodland	The number of products that farmers can obtain as energy from woodland.
	Food products from grassland	The number of products that farmers can obtain as food from grassland.
	Energy products from grassland	The number of products that farmers can obtain as energy from grassland.
Production efficiency	Material input efficiency of farmland	The ratio of farmer's total output of farmland to total material input.
	Labor productivity of farmland	The ratio of farmer's total output of farmland to total labor input.
	Material input efficiency of woodland	The ratio of farmer's total output of woodland to total material input.
	Labor productivity of woodland	The ratio of farmer's total output of woodland to total labor input.
	Material input efficiency of grassland	The ratio of farmer's total output of grassland to total material input.
	Labor productivity of grassland	The ratio of farmer's total output of grassland to total labor input.

Methods

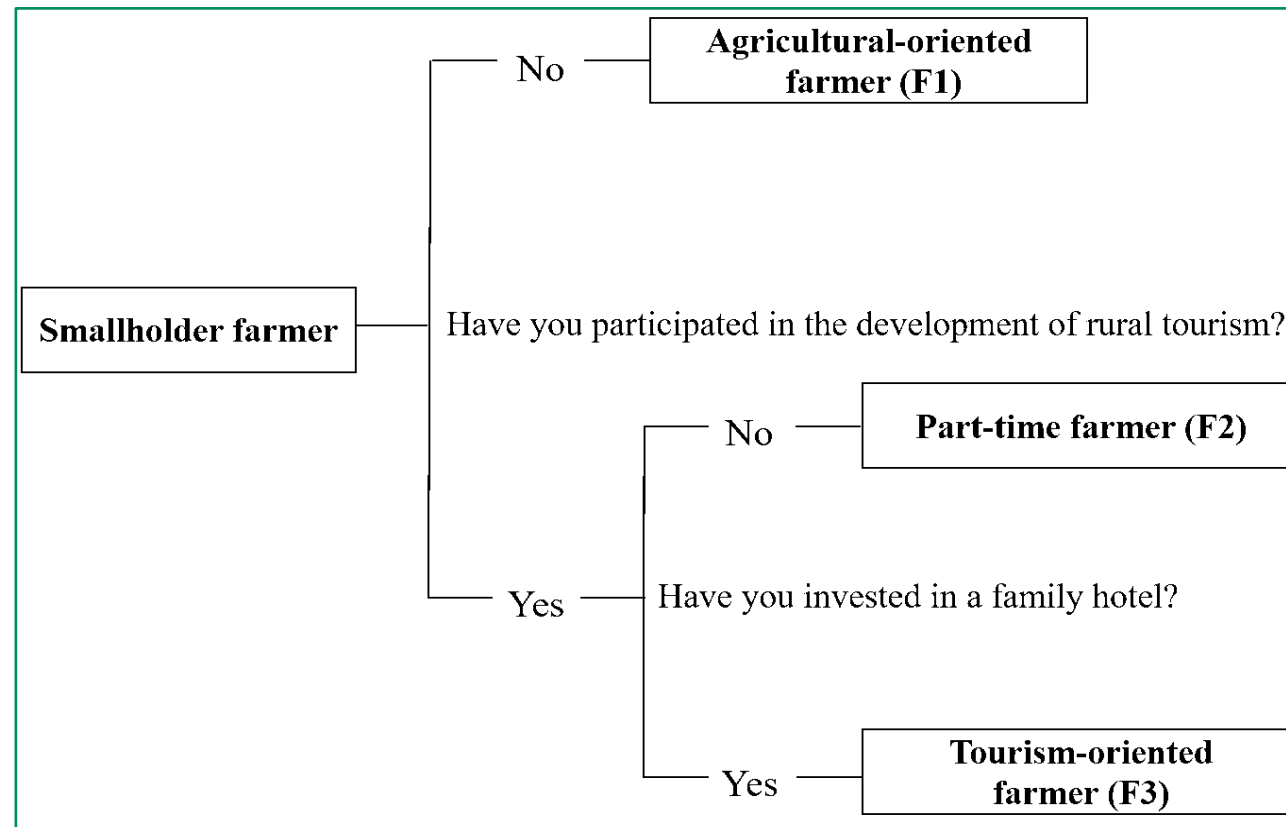
The empirical case

- The first GIAHS site in the Qinghai-Tibet Plateau
- Diebu Zhagana Agriculture-Forestry-Animal Husbandry Composite System in Gansu Province (Zhagana system)



Development process of rural tourism

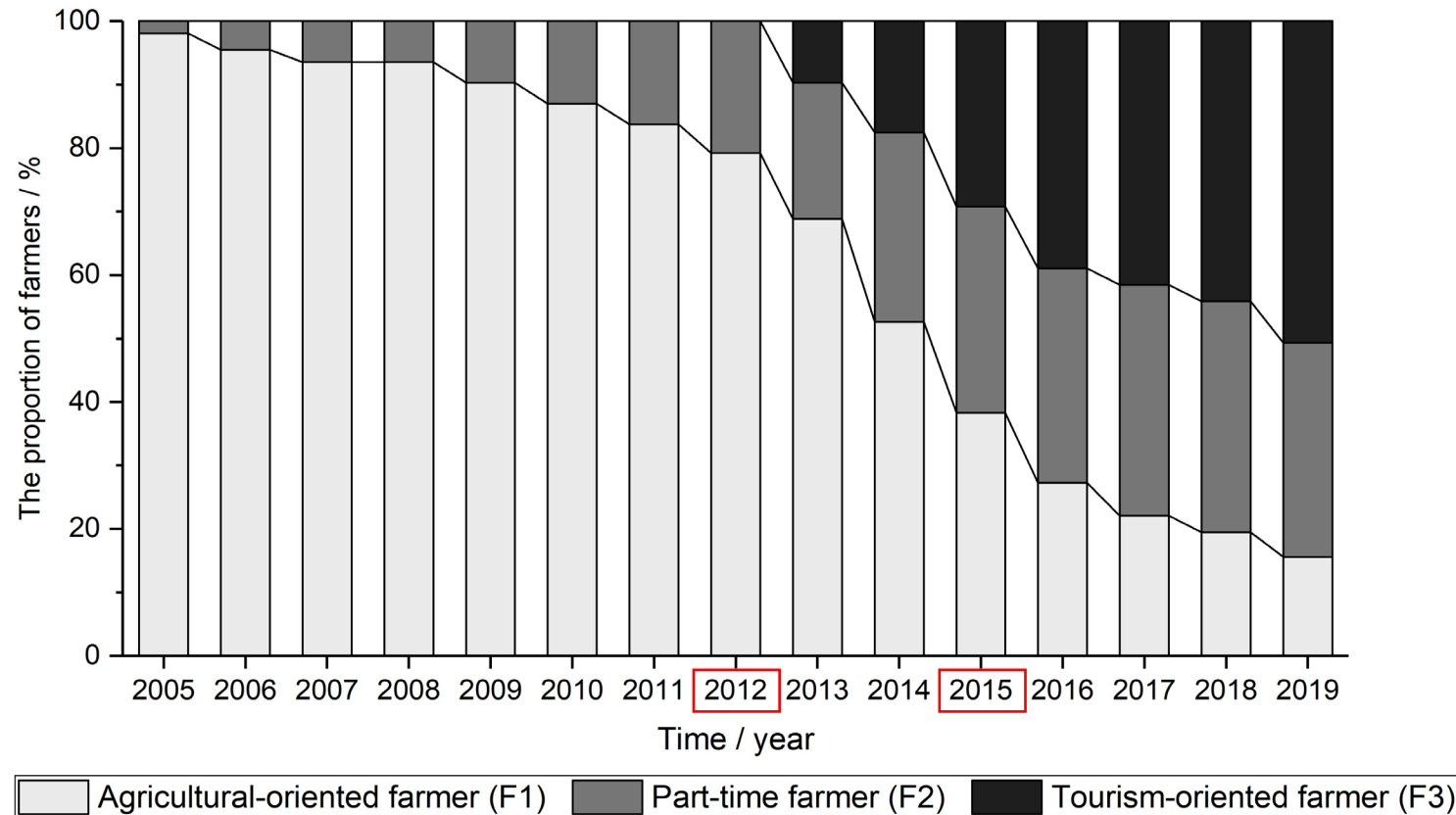
- Based on the decision-making tree analysis, all farmers can be divided into three groups.



Results

Development process of rural tourism

- Regarding farmers' types, regional rural tourism development can be divided into three main stages.

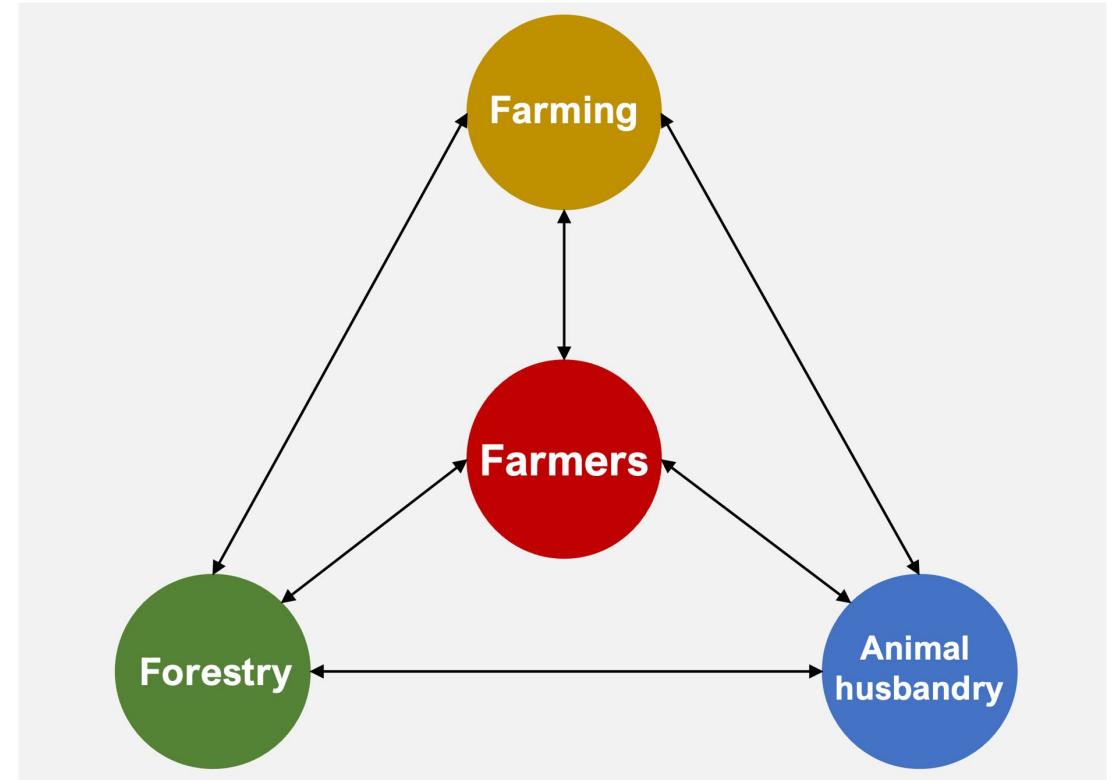


- 2005~2012:** Beginning stage of rural tourism.
- 2013~2015:** Developing stage of rural tourism.
- 2016~2019:** Stable stage of rural tourism.

Results

Regional agricultural production under rural tourism

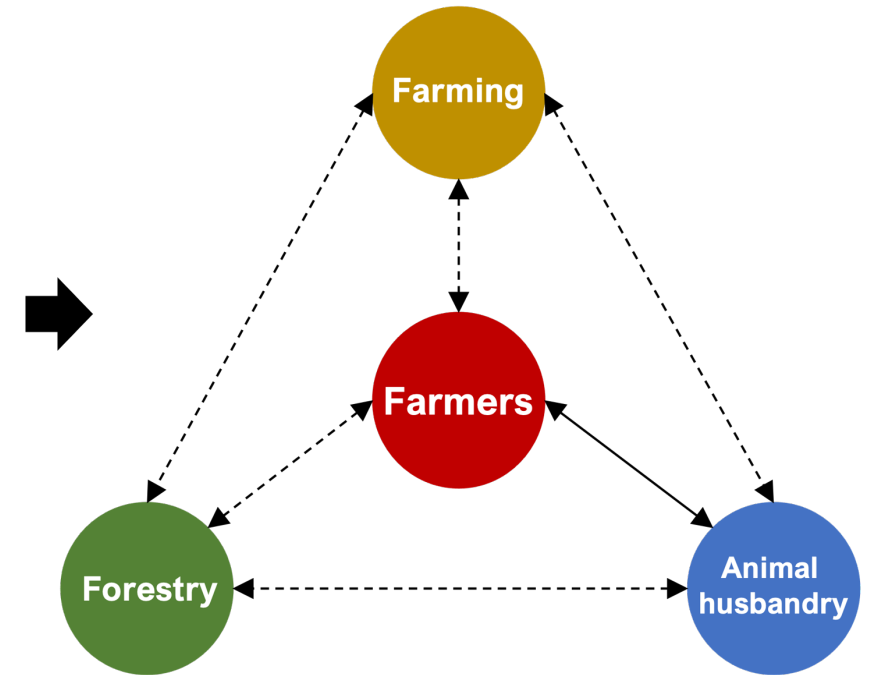
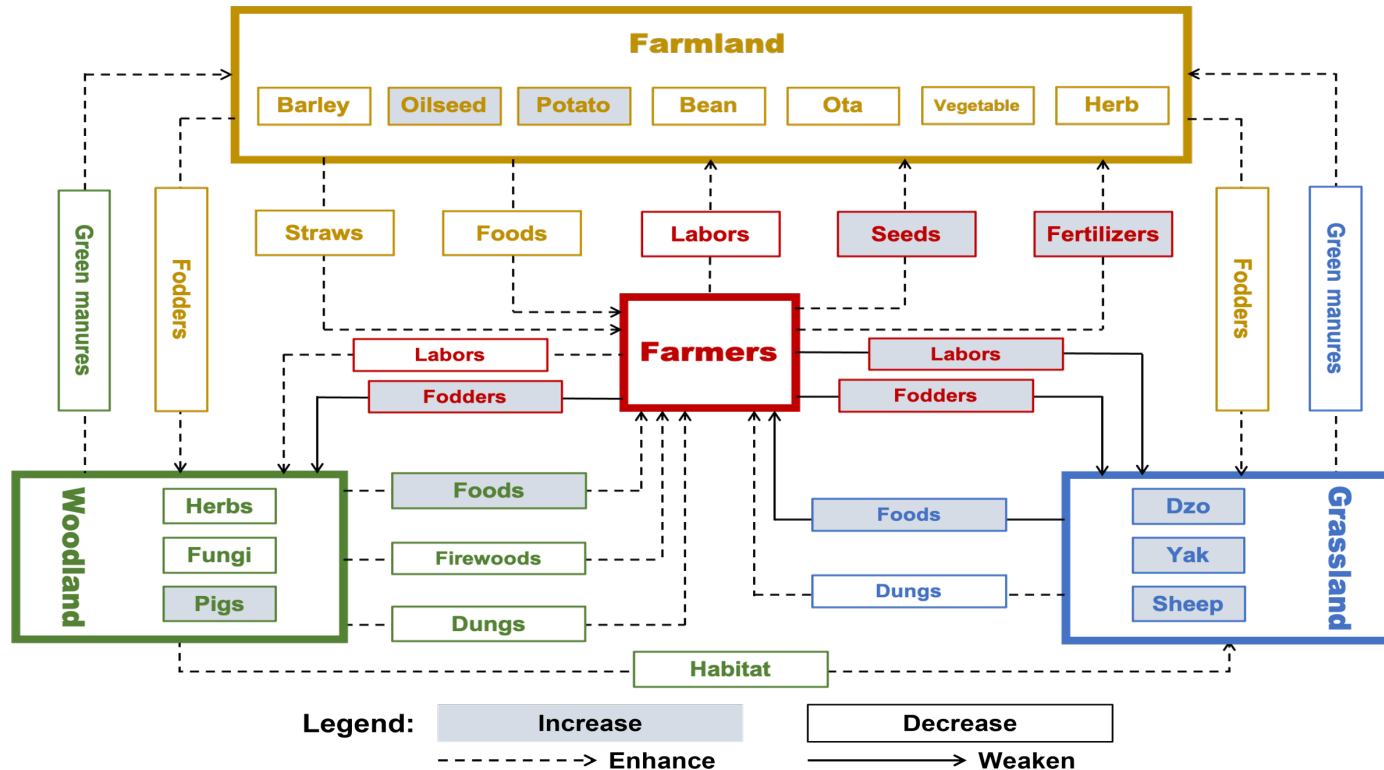
- **Productive structure:** a composite agricultural system integrating farming, forestry, and animal husbandry.



Results

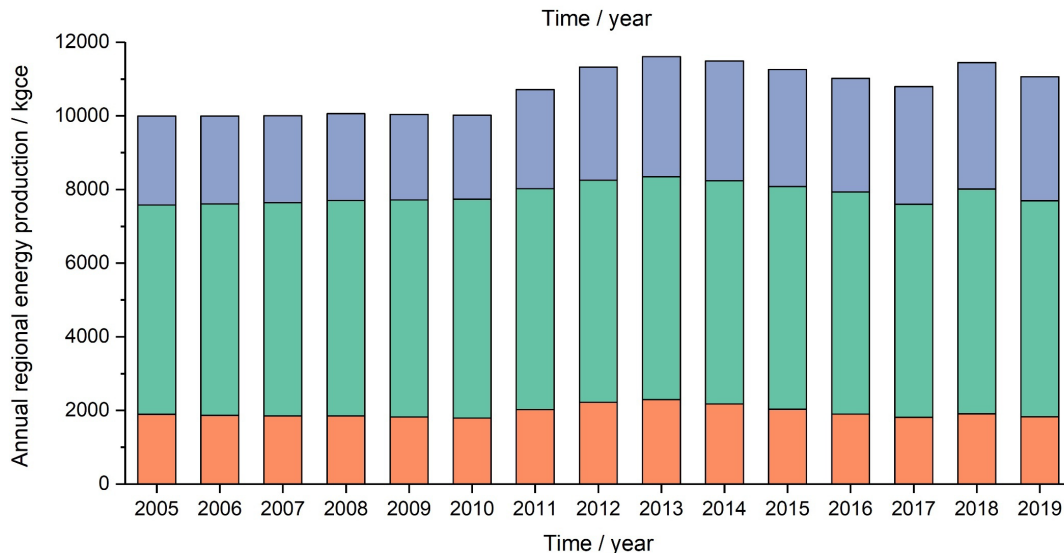
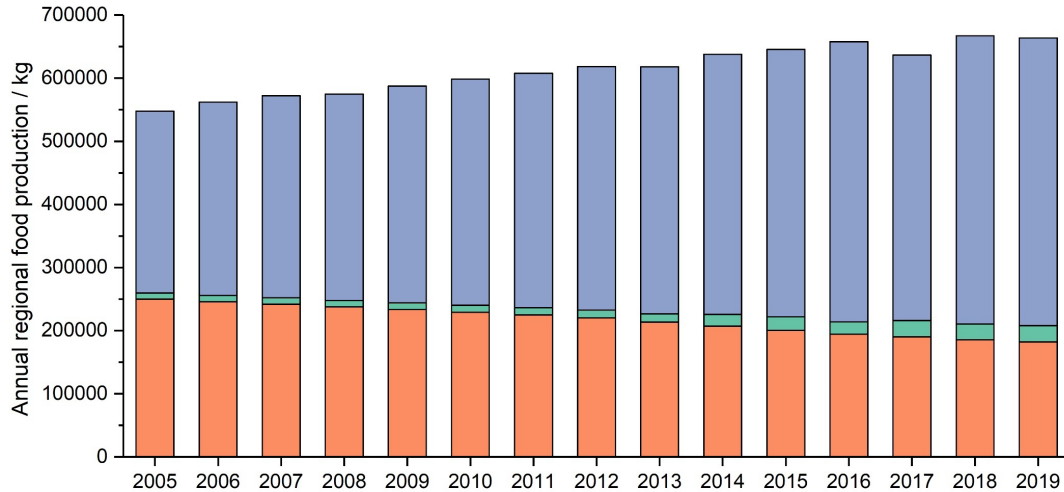
Regional agricultural production under rural tourism

- Productive structure change:** from the integrated management of farming, forestry, and animal husbandry to the animal husbandry-based structure, supplemented by farming and forestry.



Results

Regional agricultural production under rural tourism



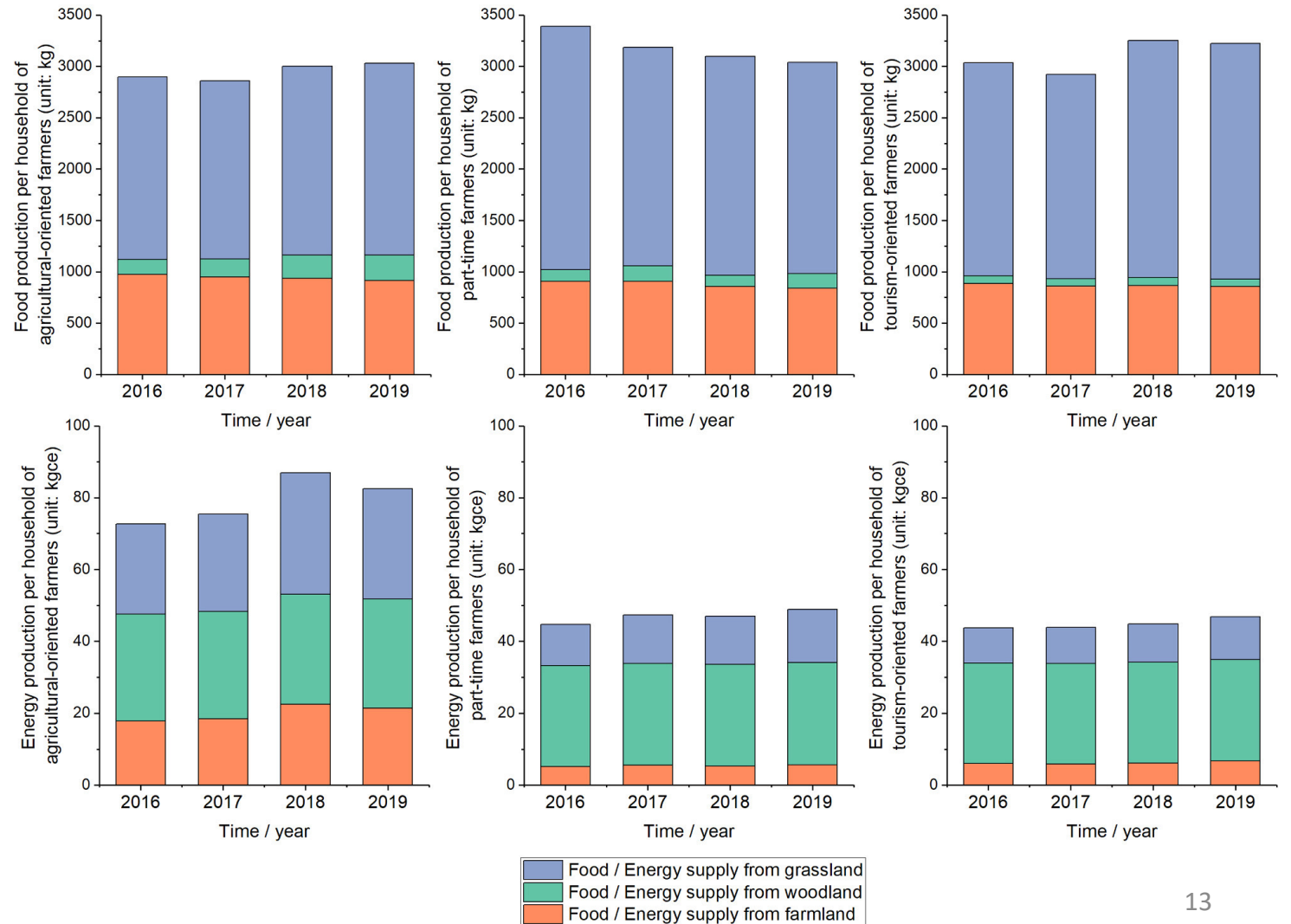
Farming Forestry Animal husbandry

- **Productive function**
- Animal husbandry and farming served as the primary food sources. And forestry functioned as a primary energy source.
- **Productive function change**
- In the context of rural tourism, the productive function has remained almost at a stable level.
- The average annual output of food and energy products was enhanced in fluctuations.

Results

Agricultural production behavior of farmers

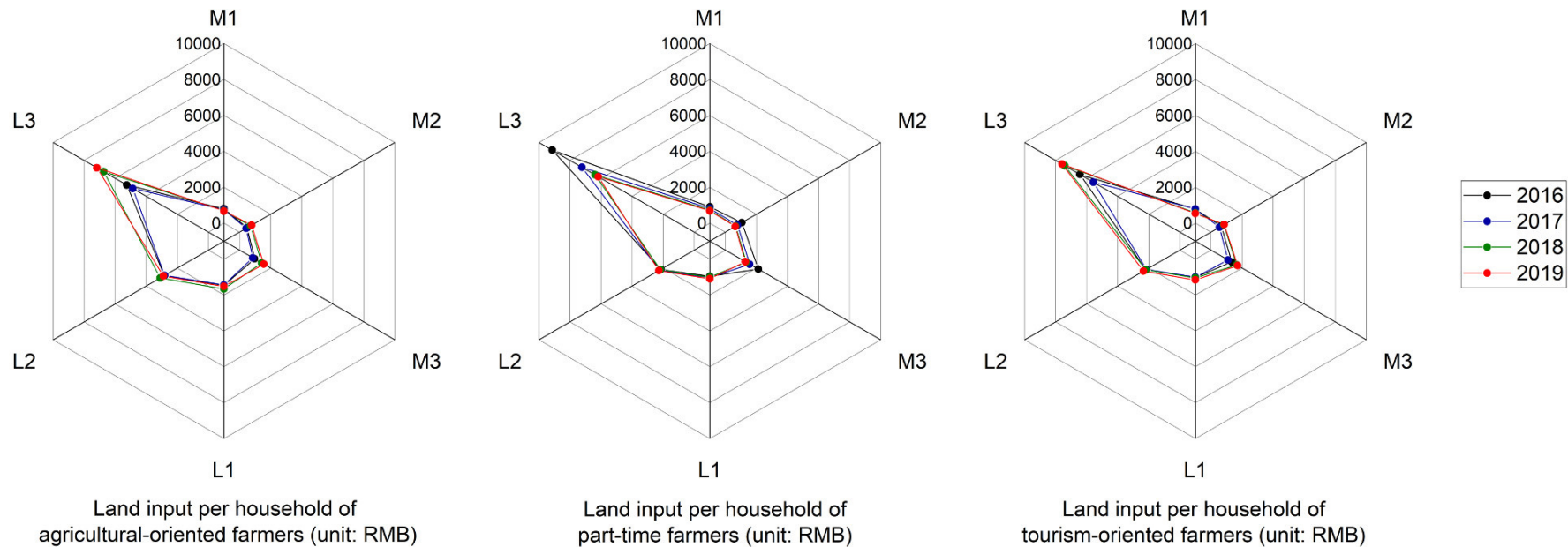
- **Production output**
- The average annual output of food products yielded by farmers was 3,077.89 kg and showed a decreasing trend.
- The average annual output of energy products was 57.08 kgce and demonstrated an increasing trend.



Results

Agricultural production behavior of farmers

- **Production input:** the annual material input by farmers has decreased; the total yearly labor input has increased.
- **Production efficiency:** the average values of material input efficiency and labor productivity showed an increasing trend, reaching 12.25 and 3.38.

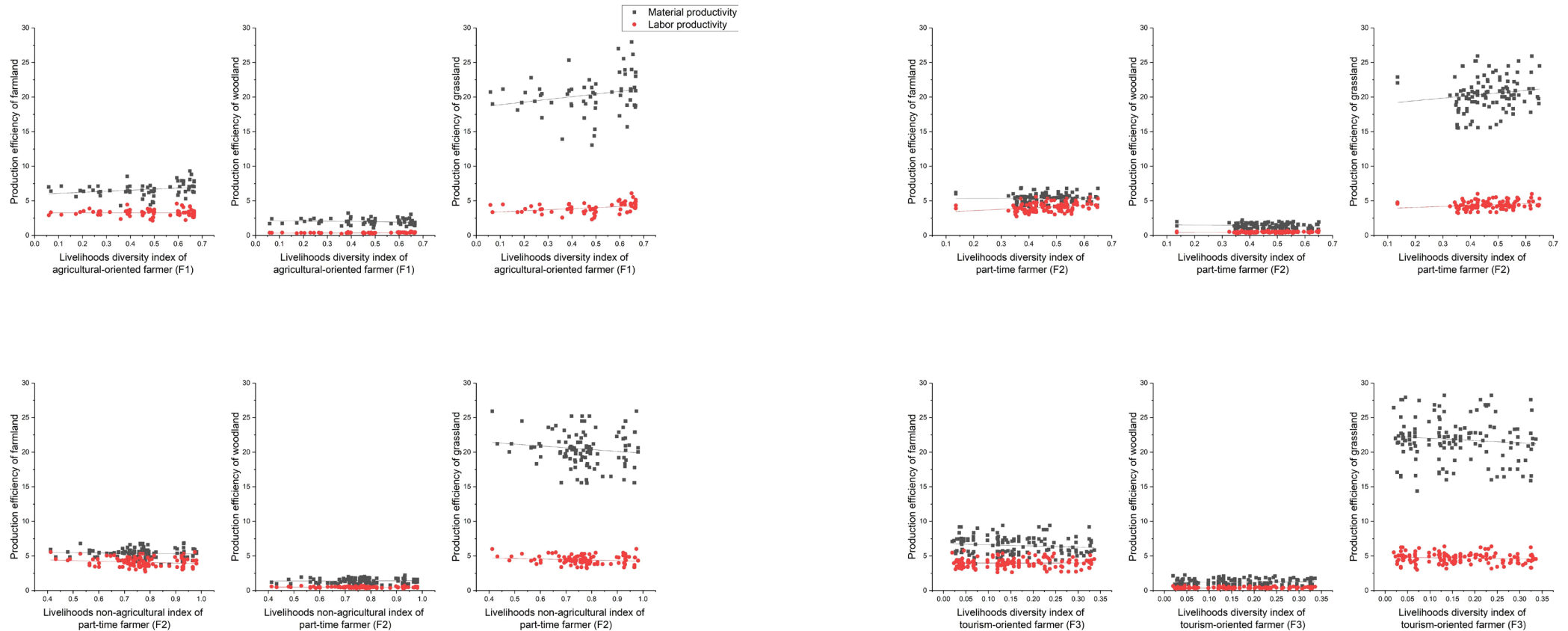


M1: Material input (seed & manure & pesticide) for farmland. M2: Material input (feed) for woodland. M3: Material input (feed) for grassland.
L1: Labour input (human & animal force) for farmland. L2: Labour input (human & animal force) for farmland. L3: Labour input (human & animal force) for woodla

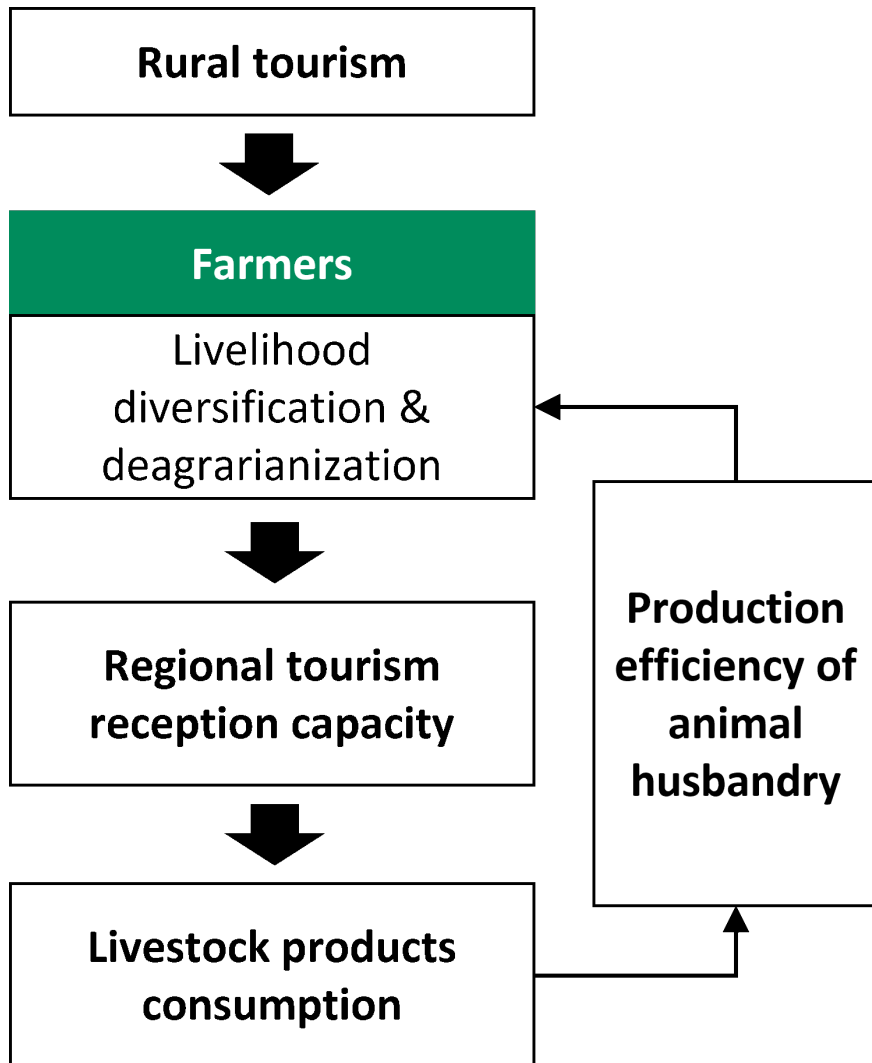
Discussions

The secret of regional productivity

- Two-round regression



The secret of regional productivity



- **Sustainable or not?**
 - The trade-off between agricultural and non-agricultural production will continue.
 - With the development of animal husbandry, the problem of grassland-animal imbalance has become increasingly prominent.
- **Improving the productivity of the farmland and woodland**
 - Land transfer and intensification.
 - Agricultural brands.
 - A rural tourism development model that combines natural landscape sightseeing with agricultural culture.



THANK YOU

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