

# Terraced Fields in Sustainable Development in Mountainous Regions of Northern Vietnam

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**Abstract:** Terraced farming has contributed significantly to the economic development in mountainous regions. Additionally, it possesses cultural values and expresses the creativity of the native people in the locality. In today's context, the preservation and sustainable development of terraced fields have become a matter of urgency, given their contributions to the preservation and promotion of cultural values, fixed cultivation and sedentarisation, environmental protection and socio-economic development. The sustainable development of terraced fields requires the coordination of many international and local organisations together with the people for the proper management and use of the resource.

**Keywords:** Terraced fields, sustainable development, Vietnam.

**Subject classification:** Anthropology

## 1. Introduction

The terraced field is plots of rice fields created in the form of steps on the basis of a mountainous terrain. Earlier, research on the subject has only mentioned this form as a cultivation method of the mountaineers. However, in reality, the terraced field is an extraordinary product of creativity as well as a cultural symbol demonstrating the people's marvellous adaptability to the mountainous environment. In Vietnam, the method of terraced cultivation has been practiced by inhabitants of the mountainous regions ever since the ethnic groups migrated to and lived there. The article points out a number of

advantages of terraced fields with respect to being a source of economic benefits, cultural creativity, fixed cultivation and sedentarisation and environmental protection, terraced fields in the policy of *tam nông* (agriculture, farmers, rural areas; Vietnamese: *nông nghiệp, nông dân, nông thôn*), and their preservation and sustainable development in Vietnam today.

## 2. The role of terraced fields and their economic benefits with respect to the policy of “*Tam nông*”

Farming land in general is considered an important means of production for all ethnic

groups. It is evident that type of land is a crucial factor on which humans rely to survive and develop. In the most practical aspect, farming land has resolved the issue of food for human beings. The Red *Dao* (Yao) people in Sa Pa often say that farming is like a solid base. Within the scale of a mountainous district, the following data can be presented to prove the important role played by terraced fields: For the whole of Sa Pa district, the area of rice fields is 2,328.96 ha, accounting for 43.58% of the total area of agricultural land of 5,343.37 ha and contributing to ensuring food security for 45,259 people [5, p.30]. At present, nearly 100% of the rice fields in Sa Pa are terraced fields. For the mountainous people, rice is very important, being not only a source of food but also an object of exchange and trade. For the inhabitants, terraced fields act as a basis for the stable production of rice, which is the main source of life, the strength of the ethnic clans and also the dowry for the offspring. For each household, the fields are considered valuable properties. Farmers in the higher regions tend to have many children. Even many families, who are believed to possess a wide area of rice fields, do not have enough of them to provide for all of their children. Although the fields can be transferred or bought/sold, it is very rare for people to do so.

When a family own a number of large terraced fields, their lifestyle would differ from that of those having few or none. The old people are better taken care of. The children wear warmer clothes and join illiteracy-eliminating classes. The head of the family can join cultural and spiritual activities organised by the village. From the

material perspective, the terraced field is considered the most important criterion in assessing of one's wealth. The process of terraced farming by the mountainous ethnic people is considered the wonderful creation and also a basis upon which they can live in harmony with nature. With the plots of terraced fields, the ethnic groups of the mountains have proven that they do not just sit down, waiting for a food security policy from the government. Instead, they are contributing to the stabilisation in regard of food security for each family and community. To achieve food security, the people who produce food are to be able to enjoy security and feel secured themselves. Thus, one can see the profound significance of the ripe rice grains on the terraced fields. This truly represents a significant economic issue in the mountainous regions, especially in today's context when Vietnam is boosting the implementation of the "*Tam nông*" policy.

The issue of agriculture, the farmers and the rural areas, also known as "*tam nông*" in Vietnam at present, is essentially one of sustainable development. For ethnic people in mountainous regions, which are basically considered sensitive and vulnerable, sustainable development is a matter of high importance.

Agriculture, the farmers and the rural areas are closely related to one another. If a synchronised solution is not available, industrialisation and modernisation cannot be accomplished in a sustainable manner. In Vietnam, improvements and breakthroughs in agricultural and rural policies have opened up an era of renovation. Named can be Directive No.100, promulgated on 13 January 1981 by the Secretariat of the 4<sup>th</sup>

Party Congress, and Resolution No.10 promulgated on 5 April 1988 by the Politburo of the 6<sup>th</sup> Congress, focused on the assertion of “liberating the production capacity”. During the *đổi mới*, or renovation, period, agriculture and the rural areas has continued to be sectors that play an important role in the country’s industrialisation and modernisation. Terraced farming in the mountainous regions in general have recently been directly related to “*tam nông*” and become a noteworthy issue.

*First*, terraced fields and agriculture. A major issue for agriculture in the mountainous areas in Northern Vietnam, especially in terraced farming, is the low rice productivity, which on average is 3.5 tonnes/ha [5, p.37] as compared with 7 tonnes/ha in the Red River Delta. In addition, there is only one season (in late spring and early summer) each year for terraced farming. Thus, the rice output has not yet fully met the people’s demand for food.

In terraced farming, farmers are highly dependent on some enterprises, both state-owned and private enterprises, in terms of fertilisers and pesticides, having hardly any rights to bargain in the market.

In order for this problem to be solved, cooperatives need to be established under the new conditions with processing and trading activities emerging. As a result, the distribution would become equal. It is difficult for the government to assist farmers via state-owned enterprises since the latter are aimed at getting profits. Hence, the assistance shall come through public services. At present, such services are still weak, with poor households benefiting quite little from them.

The costs of tending the rice, including those for fertilisers, pesticides and rice varieties, have been rising sharply while the price of rice itself is not high. As a result, farmers get disappointed with agricultural production and the rice plant. A number of farmers have shifted to non-agricultural sectors and services, which directly serve the demand for tourism in the locality. The situation would very likely lead to the risk of losing food security.

*Second*, terraced fields and the farmers. In this part, we will use Sa Pa district as a case study and consider it representative of the rural areas in Vietnam’s mountainous regions. In Sa Pa, farmers account for 85.46% (37,260 farmers/43,600 of the total population) [5, p.26]. They are categorised into urban and rural population. The Mong and Dao (or Yao) people are the two ethnic groups with the largest populations in the district. They are basically farmers living in villages. Only a very small number of them work as government employees at the district and commune levels. And, it is Vietnamese farmers who carry out the renovation policies. Yet, they benefit little from the very policies. Farmers in Sa Pa are still poor. Poverty reduction has not been closely connected to the development of the rural economy and hence is not yet sustainable. Local farmers are therefore still prone to falling back into poverty.

There exists a fact that is happening on a daily basis in Sa Pa that local farmers are lack of employment during the agricultural slack season, which lasts from November of a year to March of the subsequent year. Some of them migrate to the towns to find jobs and work with low pays. They often look for simple jobs such as being

salespersons at souvenir shops selling ethnic brocade fabric products, working as tourist guides, hotel housekeepers, or “*xê ôm*” (motorbike, taxi drivers)...

In Sa Pa, in recent years, an increasing number of Mong girls have been hired as travel guides. Several of them are hired on a monthly basis with a fixed salary (around VND 100,000) and some additional cash for each trip (from VND 30,000 – 50,000, depending on the length of the route) [4, p.92].

The phenomena have been taking place in a spontaneous manner, without any planning or support from the government or the market while they are part of a process which is key in the country’s renovation, industrialisation and modernisation - the process of moving the “redundant” labour to urban areas. Without close management, a host of complicated issues shall arise in the society.

For the development of a commodity agriculture with high labour efficiency and productivity, the factor of the farming household should be highly regarded. A new type of cooperatives where members join in processing and trading together should be organised to expand the scale of production and trade. For households possessing large areas of terraced fields, intensive rice farming should be promoted, whereas for those with fewer fields, they should take measures such as *dồn điền đổi thửa* (the exchange and combination of plots for land consolidation), liberating the labour capacity of a number of farmers, so that they can participate in forestation and planting of black cardamom and medicinal herbs.

While conducting research in Sa Pa, one can realise the latent risks when the land is

becoming more and more a tourist attraction though the risks are yet to be developed into social ills. The peripheral rice cultivation areas of the town have quickly become the targets for real estate investors with an eye for tourism. Farmers are a group with the least power. They barely have the right to bargain in the market and are lack of the right of the land. They are taken advantage of and, in case they are deprived of the land, no one would defend them. Following the “advice” of a number of investors, they have sold the land, which leads to land speculation, and then, soaring land prices.

*Third*, terraced fields and the rural areas. To speak of the rural areas is to speak of the rural economy, rural society and rural life. During the process of renovation, agricultural development equals economic development, and rural development equals social development. In mountainous regions, if focus is only directed at agricultural development, especially the absolute position of the rice on terraced fields, the restructuring of the rural economy would be a very hard task. As extra jobs cannot be created and labour productivity fails to be enhanced, the farmers’ incomes remain low. Agricultural development requires professionalisation while developing the rural areas demands diversification.

While the level of contribution of farmers in rural areas is high, they receive little welfare. They do not benefit much from investments by the government in infrastructures and social welfare.

Cultural changes are also worth paying attention to in the rural society of agricultural inhabitants of the mountainous areas. Essentially, to mention the rural

society is to speak of the people and the man-to-man relation.

The rural areas still lack a social security system while the farmers' incomes are not high. To ensure sustainability, issues must be comprehensively resolved. Strategies must be set up to guard against natural disasters, epidemics and risks in the agricultural market. The government is to provide assistance for capacity enhancement for rural communities so that farmers can participate in the rural development.

Resolving the issue of "*tam nông*" is crucial to the country's industrialisation and modernisation. At the moment, rural industrialisation has not been sufficiently proceeded due to the lack of land, a high-density population, small-scale production and low labour productivity. Rural industrialisation is mainly focused on enhancing the quality and added values of agricultural products, the labour productivity and the rural economy. The quality of farm products includes both the quality in value and food hygiene.

For high-quality industrialisation of rural areas, a new pool of *workers – farmers*, or *industrial farmers*, shall be developed, the majority of whom are the rural youth.

Young people should not be let to look for jobs in towns and cities in a spontaneous manner as they are doing now. The youth should be trained right in their own village environment.

The protection of farming land requires for policies to manage pieces of agricultural land risked of being converted into that of industrial or tourism purposes while the land supply has been shrinking. Speculation of farming land for illegal gains cannot be allowed to be made.

### 3. Cultural values of terraced fields

The terraced field is the cultural creation of the many ethnic groups in the mountainous regions. Since some centuries, the farmers did not have any kind of measurement equipment or machines, even the most rudimentary ones. They only had "*cuốc bướm*", "*cuốc chim*" (two kinds of hoe), crowbars, knives, ploughs and rakes, which were self-made farming tools. However, one generation after another gradually discovered how to create a water source from the ravine of the stream, accumulate water from the rain and then direct it back along the winding ditches, turning the high and dangerous mountain slopes into spectacular terraced field plots.

One of the reasons why many researchers pay attention to terraced fields is the wet rice culture that bears the uniqueness of ethnic groups in the mountainous regions. The fields also prove that people in the lower and middle regions are not the only ones to have a water rice civilisation, but those in the mountainous regions are also very good at water rice farming.

During the course of doing research on terraced fields, attention should be paid to the names of a number of villages which are linked to those of the rice fields. Several regions where the ethnic groups doing terraced farming reside are the lands that welcome bouts of migration of minority people. In such places, most of the village sites are named in a dialect of Mandarin Chinese that is spoken widely in the Chinese provinces of Yunnan, Sichuan and Guizhou [2, p.43]. Additionally, there are sites that are in close connection with the names of the residing ethnic groups,

the surnames of the first people to reclaim the land, and natural elements. Specifically, the names include elements that are closely linked to the topography: *phìn* (flat): *Tả Phìn*, *Tả Giàng Phìn*; those related to rivers and water: *Séo Trung Hồ*, *Ma Quảng Hồ*, *Nậm Ngán*, *Nậm Sang*, *Suối Thầu*... (rivers, lakes); those closely connected to administrative sites: *Sín Chải* (new village), *Lao Chải* (old village), *Trung Chải* (middle village).

In addition, there are also sites in close connection with the names of the residing ethnic groups: *Tả Van Giáy* (the enormous arc where the Giáy people live), *Tả Van Mông*, *Tả Van Dao*, *Suối Thầu Mông*, *Suối Thầu Dao*, *Mông Súa*...; in connection with the surnames of the first people to reclaim the land: *Lý Lao Chải* (old village of the Ly family), *Giàng Tra* (the Tra family), *Mã Tra* (the Ma family); and in connection with natural elements: *Vù Lùng Sung* (rainbow), *Pờ Xi Ngài* (the white rock).

Terraced fields also play a significant part in the development of tourism. The terraced fields in Mu Cang Chai and Hoàng Su Phì in Sa Pa can be put in comparison with those in the rice terraces of the Philippine Cordilleras on the island of Luzon, which are owned by the Ifugao. The Filipino terraced fields were inscribed on the [UNESCO World Heritage List](#) in 1995, under the cultural landscape category [1, p.55]. The terraced fields of the Hani people in the Ailao region, Yuanyang county, Yunnan province in China was acknowledged as world cultural landscape heritage in 2008. The terraced fields in Vietnam in the above-mentioned regions are situated within the human ecosystem, including elements such as a subtropical

climate, a multi-colour picture of ethnic cultures with friendly and hospitable groups of inhabitants like the Mong, the Dao, the Giáy, the Hani... and their unique customs. These characteristics represent a huge advantage in attracting tourists.

#### **4. Terraced fields as regards to fixed cultivation and sedentarisation**

Ethnic people in the mountainous regions of Vietnam have been conquering the sloping lands and turning them into green and lush rice fields for the past few hundred years. Terraced fields represent a wonderful result of labour created by the people within the typical ecological complex of the mountainous areas. The forests, rice fields, gardens, village, and system of rivers and streams are the core elements for man's fixed cultivation and sedentarisation. They form the space for existence, provide the conditions in terms of the food, apparel, residence and protecting the livestock. The fields also serve as the place where there are the fauna and flora that can be of use in their lives. Of the five core elements mentioned above, the rice field holds a central position, being a cultural creation that reflects the perfect harmony between humans and nature, and a rational structure and diverse values. At the same time, it represents the advantage of agriculture in the mountainous regions.

Given their advantages, terraced fields hold a very important position in the fixed cultivation and sedentarisation of ethnic minorities in Vietnam's mountainous areas. The structure of a village in the mountain tends to be unstable. The cultivation

method of swidden farming with the set of slashing (the bushes and plants) – burning – poking (to make holes) – and sowing (seeds) does not facilitate the concentration of the population. Ethnological documents have shown that, with this form of cultivation, there are only 5 to 7 roofs in a village. It is a rarity to find cases where the number of roofs reaches 10 to 15.

Nomadism is a backward production process of ethnic minorities [3, p.12]. The fact shows that only terraced fields and the rice sown on the fields, which yield a high and stable productivity, can keep the ethnic people from wandering in the forests to engage in slash-and-burn farming. Terraced fields can be developed for once and then cultivated multiple times. They are also considered properties of private ownership. The factor acts as an element that keeps the people in place and serves as solid premises for the fixed cultivation and sedentarisation of ethnic groups in the mountainous regions.

## 5. Preservation of terraced fields in the current period

Terraced fields are cultural heritage, being a continuous and complicated technical system. To preserve and develop such values, it is very crucial to set up a mechanism, which can be simply summarised as “five in one”: *One*, international organisations. Terraced fields are cultural and agricultural heritage of the mankind. For their preservation, coordination is needed between the United Nations and inter-governmental organisations. *Two*, domestic organisations, including those at the central, provincial and district levels. Directly

participate in preserving the heritage, they shall both coordinate and supervise the implementation of the tasks related to heritage conservation. *Three*, enterprises. In economically underdeveloped regions like the mountainous areas, their participation can play a major role in promoting the advantages of terraced fields. *Four*, scientific and technological organisations. Terraced fields possess the values of tangible, and also intangible, heritage, being the cultural creation which is related to a multitude of fields: sustainable development, livelihood, ecology, agriculture, forestry, water resources, ethnology, folklore, community management, cultural landscape tourism and many others, all of which require thorough research. *Five*, the people, the community and community-based organisations. The community of the local inhabitants comprises those who adapt to the specific social and ecological conditions of the locality. The Mong, the Dao, the Hani and the La Chi are ethnic groups that can represent the interests of the localities. They are the ones who understand the most profoundly and are the most familiar with ecological changes in the locality and the traditional practice of resource management. Once the elements are completely apprehended, they can mobilise material and mental resources to put forward decisions in order to protect and develop terraced fields in the close relationship with nature in a more and more responsible manner.

## 6. Conclusion

Terraced fields in all domains that range from ensuring food security and fixed

cultivation and sedentarisation to cultural creativity and tourism development have truly been a major source of benefits for people in Vietnam's mountainous areas. They also play a role in ensuring national security and sustainable socio-economic development in the country's frontier regions. Local and international organisations as well as the people need to join hands to preserve and promote the terrace fields.

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