

## Article

# Ecology Oriented Agricultural Management and Village Landscape in Northern Part of Vietnam

## Report on VAC System

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### Abstract

It can be said that the open economy policy so called “doi moi” which Vietnam carried out since 1986 effected the form of its agricultural production to change. This paper reports this time is an abbreviation which stands for Vuong (garden), Ao (pond) and Chuong (stable) and they equip them in their holdings which they call “dat de lai 5 phan tran (5% holdings)” and they are engaging in productive activities in these holdings. They raise vegetables and fruits in V (Vuong). They raise fish in A (Ao). And in C (Chuong), they breed hog, poultry and ducks. And they consume their farm products, poultry and fish as food or sell them at market. So it comes to VAC-System and the reason why this system improves their management is that this system is recognized as one cycle as follows: Vegetables are used to feed fish in A or poultry in C besides consuming as food. While manure is made from excrements and human manure together with ash and leaves and is used to fertilize vegetables and fruits in V. And a part of excrements is used to feed fish in A. They utilize small fish in A to feed big fish in A.

Thus VAC-System is ecological and effective in improving productive agriculture. The productivity of their agriculture was remarkably improved by having adopted this system. At the same time it has created a unique Visual Landscape of farm village as well as it is of help to employment for the elderly or to upbringing leaders of village management. I believe it is effective in village management in farm villages which are not engaged in modern agriculture and also effective especially in village management in Asian agricultural countries.

**Key Words:** VAC-System , Village Landscape , Ecology , Agricultural Management , VIETNAM

Vietnam attained low growth and is a very poor country in Asia after the war against the United States of America. However Vietnam has recently developed remarkably because of the success of its open economy policy called “doi moi” started in 1986, the release from the economic sanctions of the United States in 1994 and its affiliation with ASEAN in July, 1995.

Not only big cities such as Hanoi, Ho Chi Minh City and Haiphong, but also every local district has been rapidly modernized and developed.

On the other hand Vietnam is expected as one of the world's most eminent agricultural production regions (rice-growing in particular) and its agricultural areas have also remarkably developed. It can be said that their policy of “doi moi” brought about changes not only in their market economy but also in the form of their agricultural productivity. This trends could be seen because economic sense was implanted in those engaged in agriculture just as Mangenke (a household which earns 10,000 Chinese yuan and 1 RMB.0.12US\$) at that time in China and it was not simply due to the changes in the form of agriculture. The VAC-system which is reported here is an abbreviation for Vuong (garden), Ao (pond) and Chuong (stable) in Vietnamese and

it is a system of ecological and productive agriculture by linking these three facilities. By adopting this system, their agriculture turned out to be more productive. And on the other hand it has created a unique agricultural Visual Landscape.

This report deals with the agricultural system which led to productive agriculture in Vietnam and their unique agricultural landscape and management which were brought by this system.

### An Outline of the Investigation

This report is based on the investigation which was carried out from July 7 to July 21, 1994.

Examples of Da Ton Commune, a Pilot Village and a Model Village of the VAC-System I am going to state about in this report is a village of Thi Xa in the suburbs of Hanoi City (as to the structure of Hanoi City, refer to Fig.1) .

The contents of the investigation were (1) the village lot measured by pacing off and plan, section and elevation of their dwellings (2) an interview with the government officials and others.

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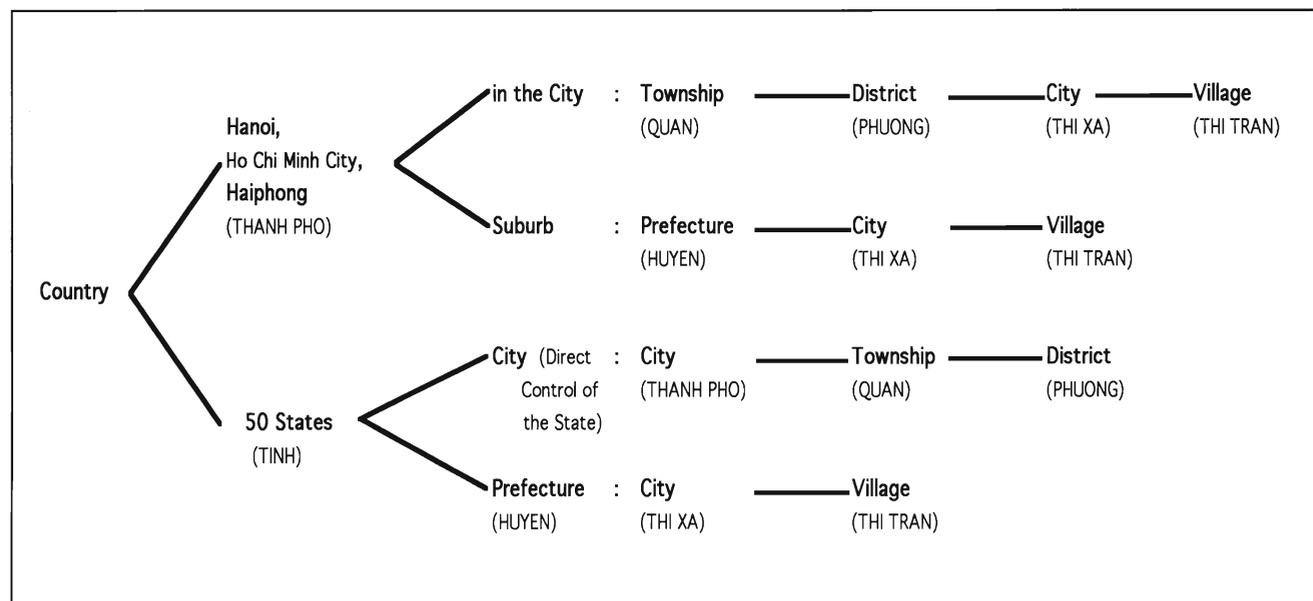


Fig. 1. A system of the administration in VIETNAM (Article 118 of the Constitution)

## An Outline of Da Ton Commune

The structure of Hanoi City is shown in Diagram 1. Dan Ton Commune belongs to Therrnam District which is located in the suburbs of Thi Xa (Fig.1) Hanoi City has transferred a part of the rights of self-governing to this commune.

Da Ton Commune is in a district located in the northern part of Hanoi City and has a population of 8,697 and is 768 *ha* in area with 5 villages.

In this Commune, there is an elementary school (1,500 children), and a nursery center and one hospital which takes charge of the health maintenance of this area. 5 commoners houses and 7 pagodas provide various cultural activities as their cultural facilities.

Rice is the main products, however they have a large income by engaging in hog raising or fish raising. They have also engaged in Carpet making, Muslin weaving and pottery. The sewing industry is still prospering in this district and a factory (with about 400 sewing machines) which was once managed by a cooperative has become under private management.

## An Outline of the VAC-System

In Vietnam under the socialism structure, farmers who join an agricultural cooperative are given land which they can use themselves to produce for self-consuming and they

can hold this land in this cooperative to engage in agricultural activities. And since the land covers 5% of their total agricultural land, they call their holdings "dat de lai 5 phan tran (5% holdings)."

The VAC-System was thought up in order to improve the agricultural productivity in this land. V in VAC stands for Vuong in Vietnamese and it means a garden or a kitchen garden, A for Ao and C for Chuong and they are pond, stable in English. They equip these in their holdings and grow vegetables or fruits in V (Vuong). In A (Ao), they raise fish. In C (Chuong), they raise pigs, poultry or ducks. They consume these as food at home or sell at the market. The proceeds of these become 'home (side business) economy' or their own income in cash. Personal income improves if productivity in their holdings is improved. Thus they adopted the VAC-System and the reason why this system improves productivity is that this system is recognized as being one cycle of agricultural production as follows: Vegetables produced in V are used to feed fish in A or poultry in C besides feed their family themselves. And at the same time, some of the poultry's excrements are utilized to feed fish in A. Small fish are used to feed to big fish in A. Such productive use of excrements once existed also in general farmlands in Japan. However it is quite different because the receptacle of excrements are quite big and the ponds, gardens, toilets and stables are linked together with a pipeline or something (Fig.2).

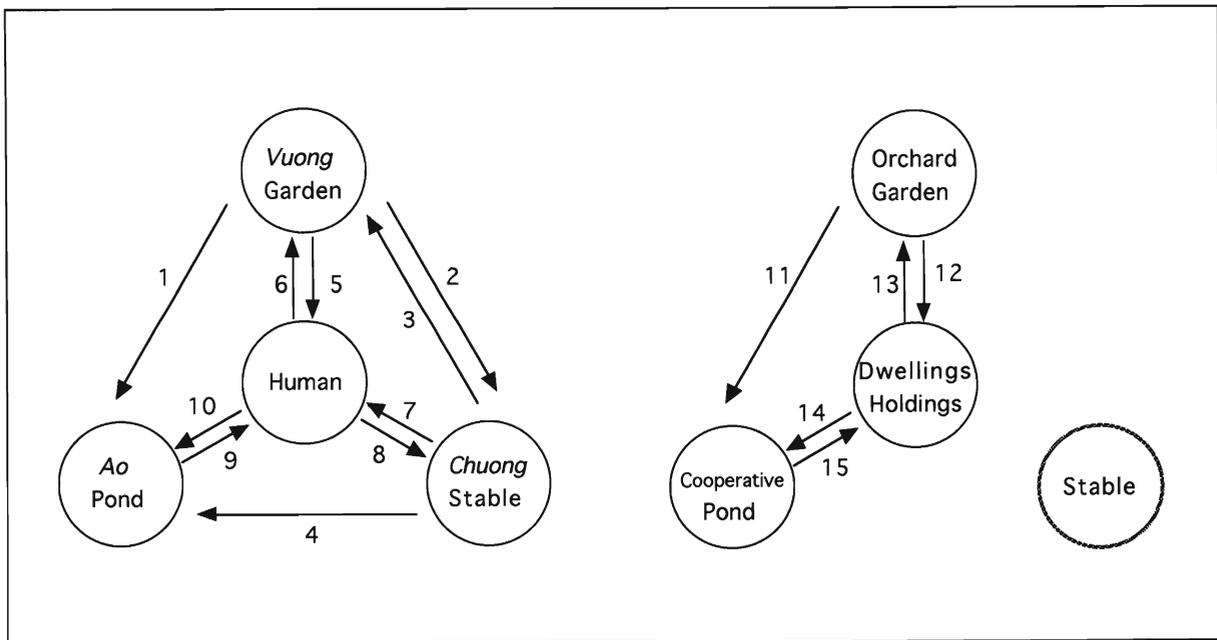


Fig. 2. Cycle of The VAC-system (Left Diagram) and its adaptation to the Village (Right Diagram)

1. waste vegetable 2. provender 3. barnyard manure 4. excrement 5. vegetable 6. human manure 7. meat 8. Scraps of food 9. fish 10. feces 11. compost 12. fruits 13. manure 14. feed 15. fry, fish

The VAC-System spread mainly in cooperatives in 1970s and as the government announced its policy of promoting the farmers' holdings management so called 'home (side business) economy' during the period that Vietnam promoted its economic reform in 1980s, this system all at once attracted attention to have spread into farmhouses.(Photo 1)

Currently, this system has been adopted by many cooperatives as a regional business. By linking an orchards owned by cooperatives with ponds, toilets and the stables of each household with a pipeline, they create in the whole village a larger VAC-System than the one found in the holdings. Da Ton Commune is a pilot village or a model village using the VAC-System.

## The VAC-System in Da Ton Commune

Da Ton Commune is now an advanced village of VAC-System as a pilot or a model village since it adopted this system in 1984. Da Ton Commune evaluates the VAC-system as a system of making their land fertile, securing the residents economical stabilization and with a big force to attract people to settle in the land and the community is not only distributing land to the residents, but also managing public orchards and ponds in the community.

Besides growing two crops of rice a year, this system is very effective in growing fruit trees, and they are planning to raise ornamental plants and export them. They are not managing public stables yet, however in the near future they will complete their VAC-System at village level by owning

some stables and linking them to public orchards, ponds and toilets via a pipeline.(Photo 2,3)

It is not too much to say that this does not only mean they have developed the VAC-System at village level, however it is a brand new system with hierarchical relation such as a linkage with the VAC-System on each household level with a pipeline.

In Da Ton Commune, the VAC-System is not only effective as a productive system, but also effective as a system for upbringing leaders in the community who have a strong sense of economy to improve management at home and finally their village management. It is recognized that a creative human resources full of vitality will be created by planning this system management. For example, we can find that they have developed the VAC-System into one on a village level or they have utilized VAC-System to the elderly's contribution as a member of society or to seniors' industry by adopting the elderly's manpower in their public orchards or by employing the retired elderly as farmers and paying them in cash.

This system was accepted and developed in this community much more than in other districts where the VAC-System was adopted not simply as one productive system. Examples of holdings management in households.

First of all, in the Do Bien Cuong family, a piece of land of 900  $m^2$  is held on lease from Da Ton Commune and for house building.(Fig.3, Photo 4-8) Residents are paying a little amount for this land as a tax. (When interviewed, they could not remember the amount of tax because they had

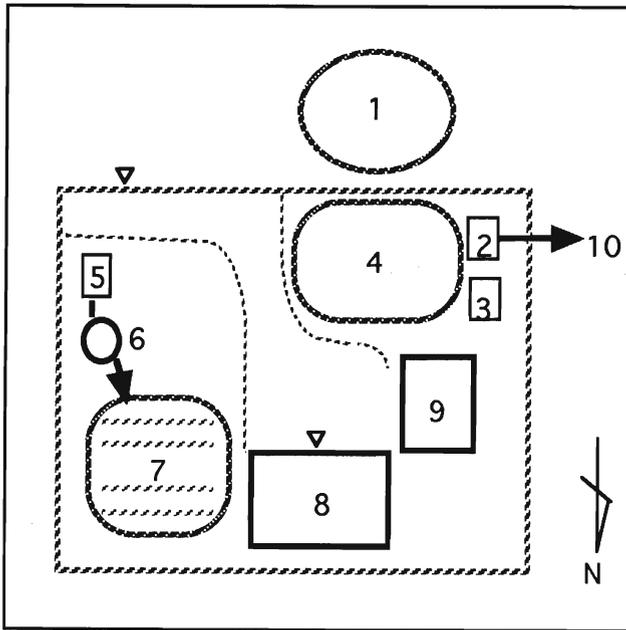


Fig. 3. Arrangement of a site (Do Bien Cuong family)

1. Pond 2. Toilet 3. Henhouse 4. Orchard Garden 5. Livestock shed (stable) 6. Hole for make the Compost 7. Field 8. House 9. Kitchen (detached House) 10. to Field (holdings and cooperative) Pipeline

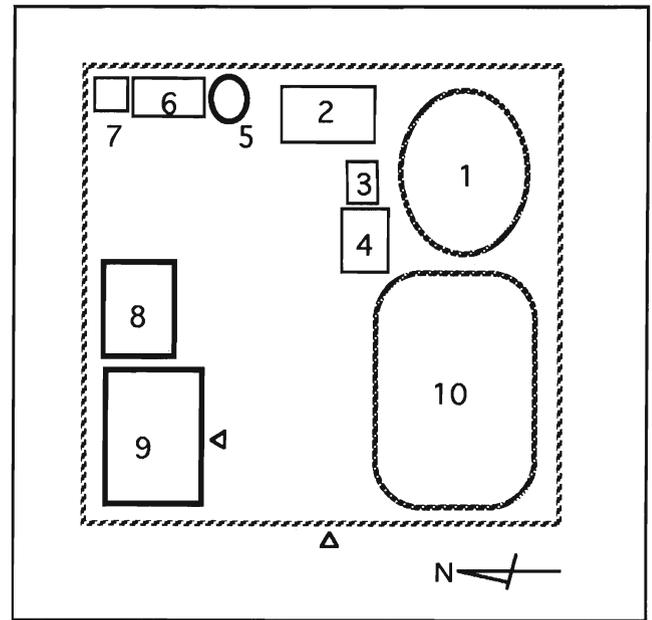


Fig. 4. Arrangement of a site (Dong Xuan Thanh family)

1. Pond 2. Henhouse 3. Bathroom 4. Rainwater tank 5. Hole for make the Compost 6. Livestock shed (stable) 7. Toilet 8. Kitchen (detached House) 9. House 10. Orchard Garden

already payed some months in advance so it must surely be a low amount). The amount of rice harvested on the field on lease from the Commune is 1t a year and after paying a tax of 12.5% and water rights, the rest of the amount turns out to be what the family consumes in a year. The selling price of rice per 1kg is about 1,500 don (1US\$=10,857.80 don as of March, 1994) and they earn about 138\$ a year. This is an average income of the people in Vietnam. However Mr. Do Bien Cuong told us that their income is about 2,000\$ and it is about 15 times as much as their income before they adopted VAC-System. In their holdings, they grow fruits, garlic, potatoes and etc. They are also raising poultry and pigs and selling them.

Just as the Cuong family, the Dong Xuan Thanh family earns 1,000\$ a year mainly by breeding poultry in the holdings. They earn about 7 times as much as their income before they adopted this system.(Fig.4)

## The VAC-System and the Village Structure

As I stated above, each household get quite much income by adopting the VAC-System in Da Ton Commune. (Photo 9) Their houses become more and more luxurious and the village is changing. However in Da Ton Commune, the structure of the village was formed by VAC-System at residential

lot level and at village level, and the land usage and the Visual Landscape cannot easily be changed on a large scale. In one household, there exist a house, a pond, a kitchen garden as elements and on a village level, it is composed from many ponds, orchards, fields and houses. That is to say these elements make a double structure to form one village.

While VAC-System improves productivity, it is a factor to regulate land usage and to definitely form the structure of a village and it can be said that this system serves to preserve the typical farm village landscape.

## Conclusion

Ecological agriculture linked with productivity by utilizing toilet and excrements of poultry once existed generally in farm villages in Japan and every agricultural country must have once experienced. The VAC-System in Vietnam introduced in this report seems to be, at first glance, the same utilization of excrements as others, however, it is very complicatedly related with village management as a whole. It can be said that this is a very effective system for village planning because it is not closed within the holdings of one household, however it has a wide-ranged cycle at village level, it is related to upbringing leaders of village management and employment of the elderly and it is a factor to regulate landscaping of a village.

However, that this system cannot easily be established and developed in every district in Vietnam although they tried to adopt it because it needs human resources to promote it and because of the relation between the sorts of grains they raise and the district of consumption.

Just as this system developed in Da Ton Commune, development of human resources is expected to have appropriate and various systems to be established by considering each nature of local districts as well as further study of the system is necessary. I would like to continue further study this system along with its development in Da Ton Commune. I believe the introduction of this system could be very effective in the management of farm villages which are not engaged in modern agriculture, and also be very effective in agriculture management in other Asian agriculture-based countries.

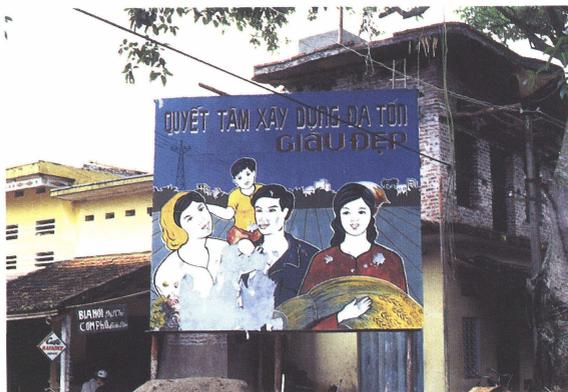
I would like to express my gratitude to Ha Van NAM (Interpreter, Anthropologist) for his cooperation. I am deeply grateful to Yuko NAKAI (Interpreter), Shigeaki KITAMURA (Architect), Tetsuo SUZUKI (Architect) who have assisted me in this investigation to prepare valuable materials.

I would also like to thank Duong Van Lac, staff at Da Ton Commune, Nguyen Van Cisy, the Chief of Cultural Information and all the staff, and Do Bien Cuong, Dong Xuan Thanh who kindly showed us their houses.

Lastly, I thank Miyabi INOUE who helped me translate this report into English.

Received: October 6, 1995.

Accepted: February 13, 1996.



**Photo 1**

A slogan 'be well-off by engaging in agriculture' was written on a big signboard of more than 5 meters long. Formerly all the signboards showed the words for praising the socialism.



**Photo 2** There are two vast public fields in the commune.



**Photo 3** Cooperative pond

Many houses are built around the pond and toilets are built on the pond to let excrements go directly into the pond.



**Photo 4** Field in the holdings

A field with a good harvest. They make a comfortable income out of this field.



**Photo 5** Pond in the holdings



**Photo 6** Chuong (Henhouse<left> and Livestock shed<right>)



**Photo 7** House



**Photo 8** The inside of a house

There equipped many electric appliances such as refrigerator, electric fan, TV set and etc. to prove their richness. Such electric appliances cannot be found in the neighboring villages.



**Photo 9** A new building under construction

The building rush brought by an increasing income. Two storied luxurious houses are being built in the village. Their houses are just like those in big cities such as Hanoi and we can see how rich they are.