

VAC and VACVINA

**VIETNAMESE COMMUNITY
ACTION PROGRAMME
AGAINST
POVERTY
HUNGER
MALNUTRITION
ENVIRONMENTAL DESTRUCTION**

VIETNAM GARDENING ASSOCIATION



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VAC AND VACVINA

- *What's VAC ?*

- *VAC models*

- *VAC development and its
results*

- *VACVINA organization and
activities*

- *VACVINA : Its goals and
perspective*



I - WHAT IS VAC :

VAC is an acronym formed from the three Vietnamese words : Vườn, garden or orchard, **AO** - fish pond and **CHUỒNG** animal shed (stable, pigsty, poultry shed).

VAC refers to a form of small-scale bio intensive farming where gardening, fish rearing and animal husbandry are closely integrated. VAC makes optimal use of land, water and solar energy to achieve high economic efficiency with low capital investment . VAC stems from long standing farming methods developed in the Red River delta.

In the fertile plain of the Red River delta, a major rice growing area, farmers have traditionally had gardens around their houses for growing produce for their domestic needs.

As the level of soil is low and the delta floods each summer, farmers dig a pond the soil of which is used to raise the foundations of the dwelling house and animal shed and to raise garden beds. Farmers use this pond to rear fish. Thus an area is created in which gardening, fish rearing and animal husbandry can all take place in an interrelated fashion adjacent to the house

Plants are grown in the garden in a system of tiered cultivation in which various species are intercropped and overlapped to make full use of solar energy and soils nutrients. Fruit trees are intercropped with vegetables, legumes and crops tolerant to shade. All around the garden timber trees and rattans are planted as green fences.

In the pond various kinds of fish are reared so that food resources are fully used at different water depths (for example, tenth feed at the top, roach, in the middle and carp and tilapia at the bottom). Taro is planted around the pond and marsh lentils are put in a part of its surface. Gourds or loofahs are grown on the trellises just above the water. The pigsty and the poultry shed are situated close to the pond.

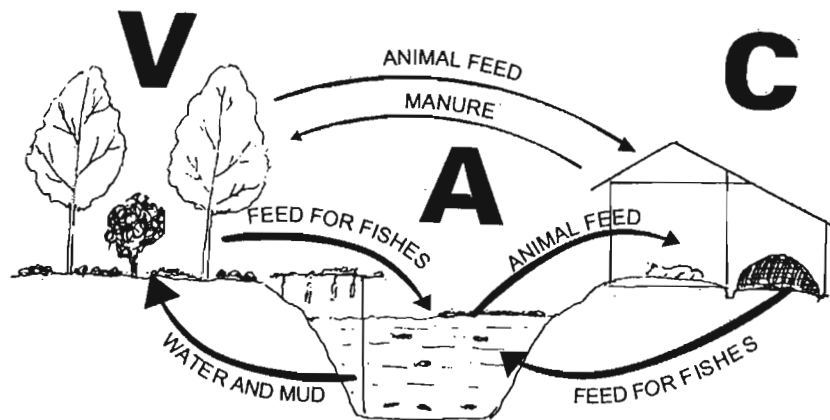
There is an interactional relationship in VAC. Some of the products from the garden is used to feed the fish while the fish pond provides water and slime to irrigate and fertilize the garden. Some of the fish (generally the cast off fishes) can be used as nutritious animal feed. Animal manure is used for plant and for fish food. In some households, farmers put animal manure into biogas digester to produce gas before using for plant and fish food.

The whole VAC system is operated by farmer's family. They consume meat eggs, fish, fruit and vegetables and in turn they contribute waste products to the system. The main strategies adopted in any eco-VAC system are :

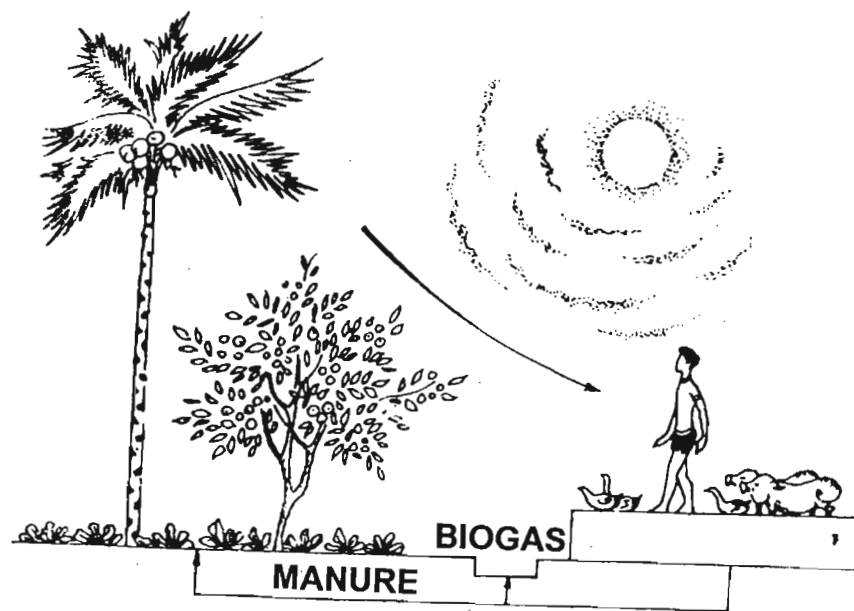


VAC ecosystem in Red River delta

- Recycling of solar energy mainly through spatial arrangements of crops and
 - Recycling of wastes/residues: using residues from a farming system as materials to be feed in another one.
- It can be said that VAC is one of highest effective agricultural development method in Vietnam. VAC is based on the energy recycle strategy, sustainable development and economical effectiveness at farm level.



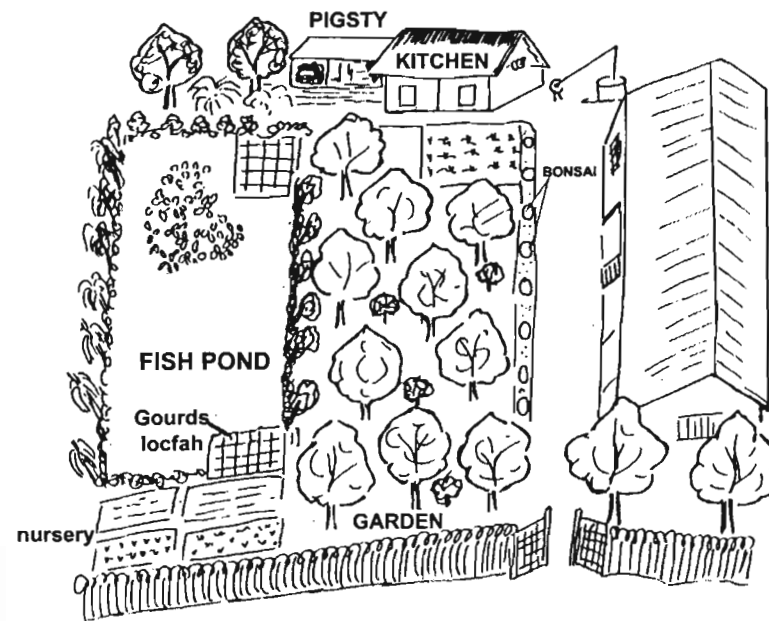
Drawing : VAC ECOSYSTEM



REPRODUCTION OF SOLAR ENERGY



VAC in Red River delta



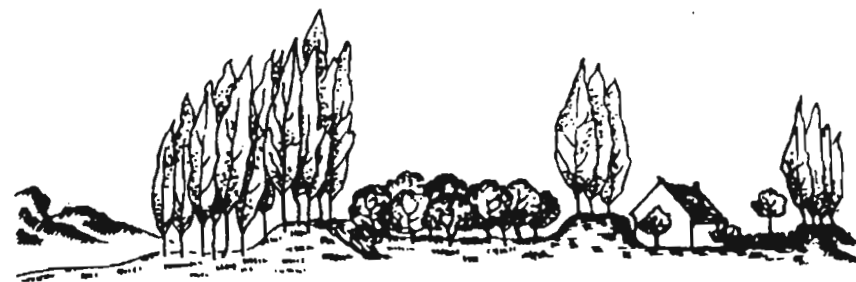
Drawing : TRADITIONAL VAC MODE IN THE RED RIVER DELTA

II - VAC MODELS :

The VAC technology has been promoted throughout the country and the original VAC model as practiced in the Red River delta has been modified to suit the conditions of various regions. The three main VAC models are outlined below :

VAC IN COASTAL SANDY AREA :

In this area there are frequently typhoons, drought and moving sand. A belt of *casuarina equisetifolia* planted along the coast acts as wind break and hinder drifting sand . Timber trees and rattans are densely planted on a causeway that is banked up all around the garden as a protective fence. In the garden a variety of fruit trees is grown (coconut trees, bananas, jujube, guava, custard apple, etc...) plus mulberry tuber crops such as arrow root, sweet potato. Fish and prawns are raised in brackish ponds and canals. The most common form of livestock raised are buffalo, cattle, pig and poultry especially ducks.



Drawing : VAC MODEL IN THE COASTAL AREA

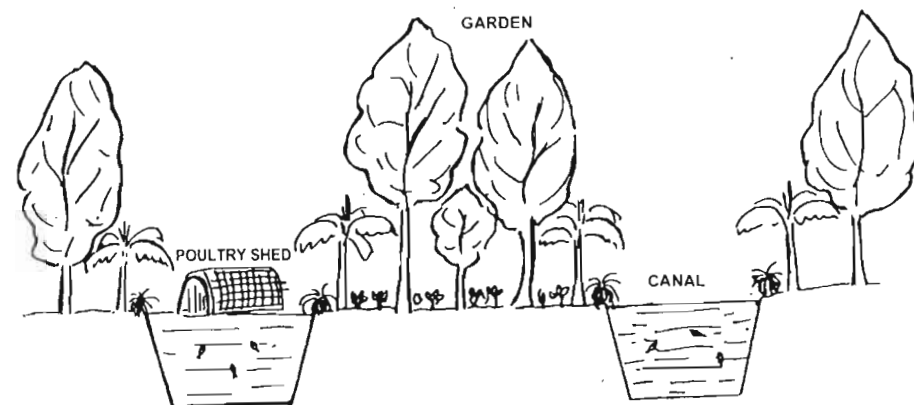


VAC in coastal sandy area

VAC IN THE MEKONG DELTA :

The Mekong delta has saline and aluminous alluvial and a wet and semi dry season. People dig canals around and between their garden to achieve better drainage and to wash salt, alum from the soil . The fruit trees are grown in the beds between the canals (coconut, longan, rambutan, mangosteen, mango, citrus, guava, banana, pine-apple) They are selected according to their suitability to the available water (either brackish or fresh) and to the type of soil.

Fish and prawns are reared in the canals with pigsties and poultry sheds situated beside the canals. Bee hives are kept beneath the tree canopy.



Drawing : VAC IN THE MEKONG DELTA



VAC in Mekong delta

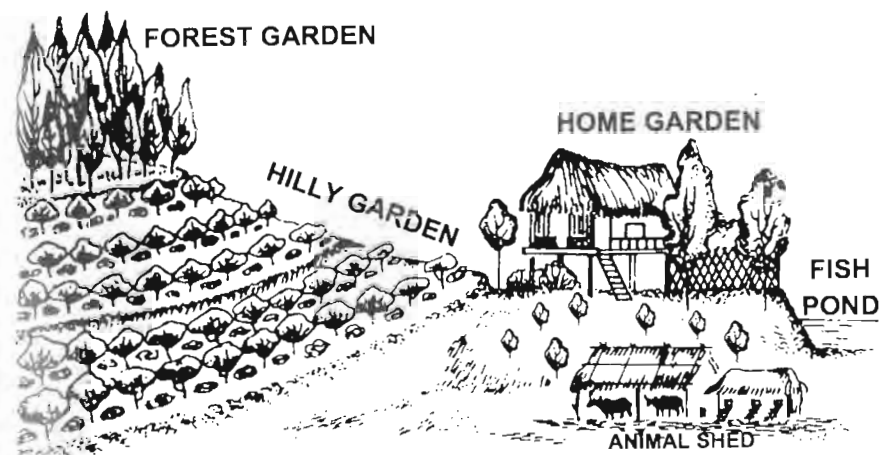
VAC IN THE MIDLANDS AND MOUNTAINOUS AREAS:

Sloping lands are planted with hilly and forest gardens. Forest garden is arranged on the steeper slopes with timber trees in mixed cropping with nitrogen fixing plants and trees such as cassia, acacia and other legumes. Lower down the steep slope is the hilly garden where trees are mixed-cropped with tea, coffee or with fruit trees such as apricot, plum, persimmon, longan, litchi; peanuts, pulse legumes, medicinal herbs and tuber crops are planted beneath. Series of small ditches and contour banks are built along the slope and pine-apples are grown along the contour banks to prevent soil erosion.

The house is built near the bottom of the hill surrounded by orange trees, bananas papayas, vegetables and medicinal herbs.

The fish pond is at the foot of the hill with animal shed nearby with a composting heap to produce organic fertilizer. If there is a stream, fish are often raised in the running water in "fish cages".

Animals in hilly area are buffaloes, cows, pigs, chicken and sometimes goats and horses.



Drawing : VAC ON SLOPPING LAND



VAC in mountainous area

III - VAC DEVELOPMENT AND ITS RESULTS :

VAC is a traditional farming system and VAC income constitutes the main component of farmers family economy. But after the cooperation of agriculture family economy and VAC system were neglected. VAC is only restored and developed with the new policy of Renovation (DOI MOI) which encourages the development of family economy. Since 1985 VAC practice has expanded rapidly in different regions all over the country and has got remarkable results in social and economical as well as in environmental aspect.

VAC RESULTS :

1 - VAC : nutritional impacts and health benefits :

VAC improves nutritional standard of the family diet by providing vegetable of high nutrient value (such as sauerkraut, amaranth, legumes, carrots...) fruit e.g. bananas, papayas, citrus..., meat, eggs and fish for family consumption.

Results received from investigations in some areas of VAC implementation (Household food security (HFS) project supported by UNICEF) show that :

Fish increased by 3.14 times

Meat increased by 2.40 times

Eggs increased by 2.90 times

Fruits increased by 3.14 times and VAC can contribute efficiently to reduce the rate of malnourished children.

VAC garden can fill the "hunger gap" between rice harvest and can be quickly replanted by easy to grow vegetable and tuber crops after natural disasters.

VAC practice create the opportunity to work in a sound environment and to have access to fresh and wholesome food so can contribute to improving the health conditions.

Many old men and patients suffering chronic sickness when practicing VAC gardening have had their health conditions much improved because they can have an "active" rest with better recreation, mental relaxation, job satisfaction and deeper love of nature.



2 - VAC and economic development :

VAC economy is a key component of agriculture production and constitutes important part of household income.

Research has shown that in many communes in the Red River delta where VAC farming is being practiced, VAC income constitutes 50-70% of farmer's income and is 3 to 5 times higher (and sometimes as much as ten times higher) than that derived from growing two rice crops per year in the same area.

Many farmers become rich by practicing VAC farming. VAC economy has a great potential and should be incorporated into the strategies of social and economic development.

VAC development will contribute to restructuring the agricultural production towards intensity, diversification and sustainability . It will provide more products for consumption for export and for the development of industry.



3 - VAC and social problems :

VAC is increasingly playing an important role in solving social problems largely brought by poverty . VAC practice leads to increased income and improved standards of living.

VAC practices provide more productive work for people (unemployment and underemployment is high in large families in rural areas) VAC tries to intervene in the life of the rural poor to reduce the migration of people to cities. VAC also offers produce and additional income for elderly people (government pensions are very small or non - existent and many old people live in penury).

Employment is provided for people of all ages because hard manual labor is not required . Vietnamese women commonly have to work on the roads, on the construction sites and distant rice fields. VAC practices allow women to work in healthy environment close to their home and children, instead of going to distant rice field and leaving young children at home for many hours.

"VAC of gratitude" have been set up for war invalids and war martyrs families . Many VACs have been also established in kindergarten and resident school for ethnic minorities to improve the nutritional standard of children and pupils.

School's VAC can be used as demonstration centers to introduce VAC techniques to pupils and farmers.

Commune and village VACs have been started to allow orphans, handicapped people and elderly people to work together for food and income.

VAC activities also result in a variety of by-products. Fruits and vegetables can be processed and crafts such as weaving, spinning and basket making contribute significantly to family income and the quality of life.



4 - VAC and environmental repair :

Like other developed and developing countries Vietnam suffers from agricultural and industrial pollution of air, water, soil and food.

The development of VAC systems can contribute to limiting pollution and improving environment . VAC methods use land, water and solar energy optimally . All wastes passe through the closed production cycle . By its use of bio-intensive techniques the environmental quality of water, soil and air is improved over time as the system develops.

IV - VACVINA : ORGANIZATION AND ACTIVITIES :

VACVINA is the short name of "Vietnam gardening association". Founded in January 1986 by a group of eminent scholars, agronomists and outstanding farmers with only 300 members in 2 provinces VACVINA has rapidly developed its organization from central to provincial, district and commune level and now has more than 370.000 members in all the provinces of Vietnam.

VACVINA is a technical, economic and professional organization, a voluntary mass organization a NGO which aims to:

- Promote VAC ecosystem and sustainable agriculture.
- Introduce improved and appropriate technologies into VAC implementation.
- Establish and promote healthy relations with international organizations for humanity and sustainable development .

VACVINA gives its priorities to the places suffered from war devastation, natural calamities and less developed regions (such as coastal, mountainous and remote areas) to the most vulnerable people such as child-bearing women, children of ethnic minorities, disabled or old persons and unprotected orphans.

ORGANIZATIONAL STRUCTURE :

1 - At the central level :

The Executive Board is voted by VACVINA congress every 5 years. It consists of 48 members. The Board realize the action program of the congress, makes relevant decisions and vote the Steering committee. The steering committee comprises 13 members having the responsibility of undertaking daily activities under the decision of the Executive Board .

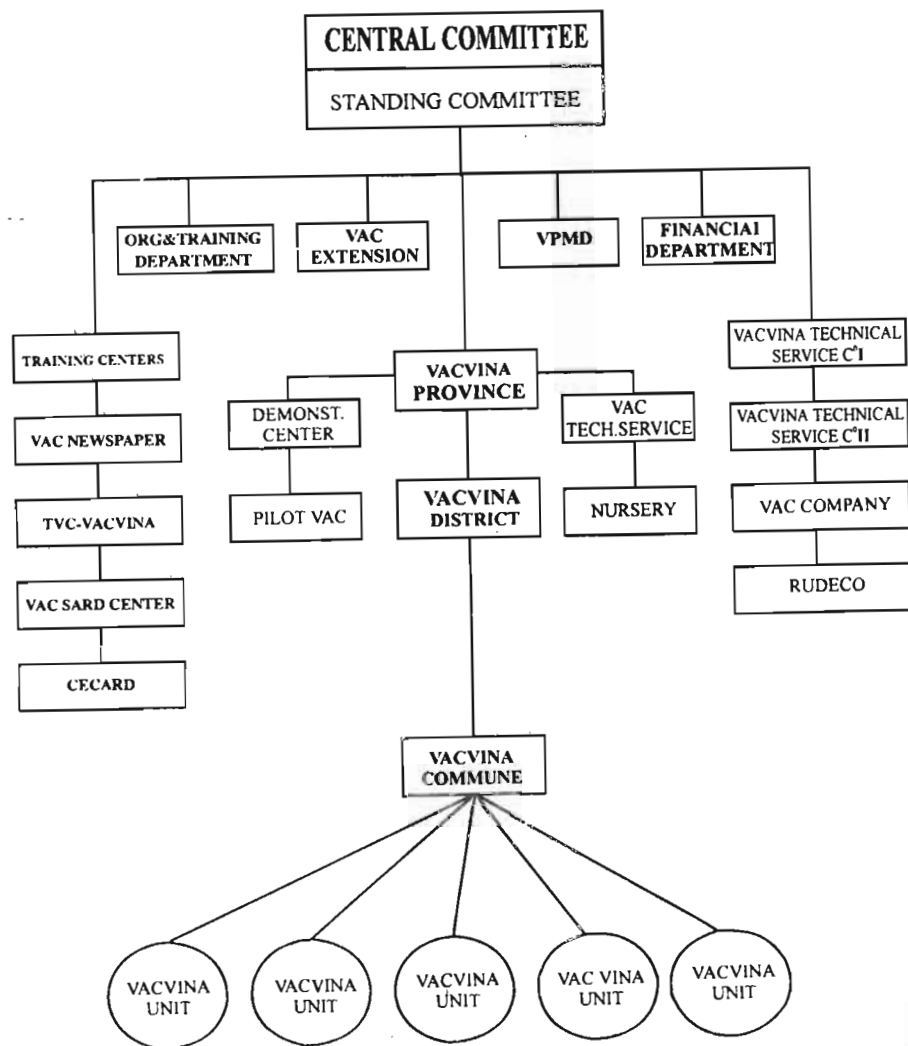
Central office : There are now 30 staffs working full time in VACVINA office . They are allocated in 7 departments.

VACVINA affiliated units :

VACVINA has 10 affiliated units covering many working fields such as consultancy, transfer of technology, professional training supply of improved varieties of seeds, seedling, stocks, fingerlings...

2 - At local level :

All the provinces of Vietnam have VACVINA provincial branches. They undertake development activities in the province under the guidance and coordination of VACVINA central. 416/592 district and 6442/communal VACVINA have been established with a total of more than 370.000 members.



VACVINA ORGANIZATION SCHEME

MAIN ACHIEVEMENTS :

Over 12 years of development VACVINA has :

1 - Restored and scaled up VAC economic model- put VACecosystem in practice as a nation-wide movement attracting a lot of social forces : farmers, pensioners, employees, teachers, veterans.

- Rehabilitated more than 54% of total home garden acreage in the country (150.000 ha) and a big idle surface utilized. The income of hundred thousands farmers has been improved and VAC system has been regarded as the best way for farmers to become rich.

Through VAC movement a new high and effective model of cooperatives has emerged that is completely different from the old cooperative type. This is a new trend VACVINA is analyzing and experimenting.

2 - Developed a large VAC extension work by organizing training courses on VAC techniques and sustainable agriculture, seminars, workshops on specific VAC topics, distributing leaflets, booklets, posters, organizing meetings and cross visits of members with common interests to exchange experiences.

VACVINA has 3 training centers in Hanoi, Quang Tri and Ho Chi Minh city for North, Central and South Vietnam 2,500 local staffs have been trained to become provincial and district VAC promoters. Beside VAC and sustainable agriculture knowledge they have also been also provided with new working

methodologies such as adult teaching method (ATM), participatory approaches ...

All the provincial VACVINA have their demonstration centers. Many demonstration centers produce good seedlings, stocks and fingerlings for VAC praticians.

A part from publishing its journal "VAC Economy" and magazine "The Gardener", VACVINA closely cooperates with mass-media to disseminate knowledge on VAC and sustainable agriculture.

VACVINA has produced a kit of gardening guidances consisting of 559 improved techniques that should be applied in gardening. This kit via 2000 communal radios has been broadscated widely over the country.



3 - Established a network of technical service centers and supplied a big quantity of materials, good seeds, seedlings, stock, fingerlings to VAC movement.

- Helped hundreds of pilot communes in many provinces to establish microcredit with revolving funds to provide capital for farmers with total outstanding amount of more than 20 billions VN dong (\$1,5 milion).

4 - In addition to promote VAC movement, VACVINA has successfully accomplished a number of projects funded or jointly implemented by international organizations such as UNICEF, AusAID, QSA, CARE International, CIDSE, IIRR and others. These projects have included for example :

- a household food security project undertaken in conjunction with UNICEF

- a project funded by AusAID and QSA to establish VAC system in 2 communes of the coastal area of Quang Binh province (one of the poorest provinces of central of Vietnam) to limit the damage caused by typhoon and improve the living standard of the farmers.

- a project to assist three ethnic communities in the mountainous region of 3 provinces Ha Tay, Hoa Binh and Lang Son.

- an industrial environment protection project in Ha Noi.



- a project to increasing income from household gardens by reducing post - harvest losses undertaken in conjunction with IIRR .

- Some small projects performed in collaboration with JIVC, HELVETAS, DED, JCNC...

Recently VACVINA has been assigned by Government the duty of conducting the gardening extension program and building agroforestry model .

By its activities VACVINA has been making important contribution to the social and economic development of Vietnam.

With the working principle "for humanity and sustainable development " VACVINA has committed to work with and for people especially those living in rural areas.

VACVINA is a member of Vietnam Fatherland Front and member of Vietnam Union of Science and Technology Associations (VUSTA).

VACVINA has a close working collaboration with governmental ministries such as Ministry of Agriculture and Rural development (MARD), Ministry of Health, Ministry of Education and Training, Ministry of Labor and Social Affairs.



Pilot VAC in Dong Thap province

V - VACVINA : ITS GOALS AND PERSPECTIVE

In the recent years, the VAC movement has been strongly developed and got excellent achievements, contributing to the elimination of hunger, reduction of poverty, solution to the rural unemployment problem, protection and improvement of environment.

VACVINA is one of the initiators of the movement and is playing an important role in promoting VAC development. Its activities are based on the principles of organic and sustainable agriculture . VACVINA has committed to pursue the building up of sustainable agriculture in Vietnam and contribute to the development of this movement in Asia and the world . The philosophy of VACVINA is "for an organic and sustainable agriculture, for a better life".

Recently the government of Vietnam has decided to implement the process of the "industrialization and modernization" of the country. In this process, agriculture must be diversified with high productivity to produce more material for industry and more commodities for the market.

The government has also planed to reforest 5 million hectares of bare land (national reforestation program) and to eliminate hunger, reduce poverty in 1715 porest communes in the mountainous and remote areas.

In the new stage of development of the country VAC movement will play more important role and will attain much more achievements especially in diversification in land farming preservation of natural resources and environment protection. VACVINA has to strengthen its organization, develop more strongly and efficiently its activities to maintain its leading role in VAC movement and sustainable rural development.

However, there are many challenges VACVINA has to cope with while struggling for sustainable development :

- There are local farmers and even technicians who do not believe in the effectiveness of organic agriculture and are not aware of the negative effects of the development of an energy agriculture according to the western model.

- Legislation on environmental conservation has been enacted but its enforcement does not seem to be easy.

- Natural resources, in particular natural forest (including mangroves in large coastal area) are being destroyed. Forest products and the biodiversity prevailing in these forests continue to be threatened by timber poachers and illegal traders of wild animals and their products .

- On the other hand, some foreign companies especially chemical firms now operating in Vietnam have not invested enough resources for the treatment of their wastes and protection of environment.

- Government investment on research and technical services is still limited to meet the VAC movement needs.

The struggle for a sustainable development in Vietnam will be facing with many difficulties but VACVINA, with the new policy of the government and the support of the people, will work at the front line with many other active and progressive institutions to achieve its goal and vision. /.