

SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT IN VIETNAM

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I. INTRODUCTION

Situated in South East Asia in the Indochinese Peninsula, Vietnam territory is lasting from 8.45-23.22 latitude and between 102.08 and 109.30 longitudes. It has 330,990 sq. km of natural area, in which 7,348.5 thousand hectares (22.2%) is arable land. Today, Vietnam has reached its security in food for national scale to the demand of its population of 83 million people. Food production in Vietnam is of 36 million tonnes annually on the total cultivated area of roughly 11 million ha. Being a country used to import food, now Vietnam is in the second place among the world largest rice exporters.

Vietnam lies in the region of monsoon, tropical climate with a high temperature (the average temperature varies between 21°C and 27°C), rainfall volume of 1800-2000mm/year and is not evenly distributed among the months of the year. Versatile and various climates of the regions create a variety of vegetation and domestic animals (originated in the temperate area, sub-tropical and tropical areas). The bad thing of climate is drought in the dry-season and floods and storms in the rainy season.

As of 2003, the use of 33,099,093 ha of natural land is as follows:

- 7,348,449 ha for agriculture (annual arable land of 5,523,899 ha, long term plant: 1,247,161 ha, meadowland for husbandry: 304,274 ha and water surface for agriculture: 273,115 ha).
- 9,641,142 ha (29.13% of natural land) for forestry, in which planted forest of 779,438 ha and natural forest of 8,841,704 ha.
- 773,960 ha (2.3% of natural land area) for Inhabitant land
- 14,217,845 ha (42.95% of natural land) for virgin land

In the total cultivated soil, more than 50% has problems such as arenolsol, thionic fluvisol, acrisols. The following is main cultivated soils available in Vietnam.

N.	Soil group name	FAO- Unseco	%
1	Sandy soil	Arenosol	4.61
2	Saline soil	Salic fluvisol	8.39
3	Acid sulfate soil	Thionic Fluvisols	16.10
4	Alluvial soil	Fluvisols	29.38
5	Red Soil	Ferralsols	26.02
6	Grey Degraded soil	Haplic Acrisol	15.48

Beside the two alluvial soils of Vietnam (Red River and Mekong River Delta), soil fertility in Vietnam is not very high. The widespread soil in Vietnam has low pH, C and N. It is especially true for soil with light texture as sandy soil or Acrisol.

The whole country has 11,478,000 ha of bald hills and empty land, which need measures of investment and improvement in order to bring high effect to socio-economy and ecological environment.

Being an agricultural country, 75.8% of Vietnamese labour-force is engaged in agriculture, forestry and fisheries. This sector contributed roughly 23.0% of the GDP in 2002 and 21.8% in 2003. In the year 2002, the output value structure of agriculture, forestry and fisheries was 76.90%, 4.33% and 18.77%, respectively.

However, so far Vietnam economy is still classified as one of the under developed countries in the World. Average GDP in 2005 was only USD643 per capita. Production infrastructure, social understructure is still poor and backward. Agricultural production is mainly manual with small scale and low productivity. The yields of crops and animals are only 60 – 70% compared with other countries in the region. Market for export of agro-products is not stable with price of 60 – 70% in comparison with that of other countries in the region. Deforestation rate is fast, with 29% nationwide. Presently, 10 million hectares of bare hill and empty land are in danger of erosion, affecting badly to ecological environment. Vice-versa, there has been a warning of overloading nutrient to soils in arable areas. Recently, organic farming has been promoted as an alternative to common agriculture in Vietnam. The adverse effect is some fertilizers and organic materials contain not only nutrients but also heavy metals. This may cause toxin to some extent with high accumulation with the time. In some areas of highly intensive cropping systems with cash crop such as vegetable and flower, with high rate of fertilizer uses, both for inorganic and organic materials, the soil would probably be overloaded with nutrient.

The annually average birth-rate of 2.2% nationwide is still high, esp. it is higher in rural areas, causing a big difficulty in economic development.

II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

Despite many challenges of natural calamities such as droughts, storms and flooding; widespread of bird-flu; and unfavorable market changes, especially those of the international market, Vietnam could maintain their focus on agriculture and rural development, by issuing a lot of new policies to create more motivations mobilizing internal resources, expanding the international cooperation relations, etc. Therefore, the agricultural and rural development sector could maintain its remarkable development steps on a wide scale, the most notable of which are:

1. The structure of agriculture and rural economy has been actively moving towards stronger production of valued and profitable agricultural products on the market's demand.

1.1 The rice growing area has been reduced to increase aquaculture and promote cultivation of other crops of higher value; however, rice growing has been developed for better quality and higher efficiency in close linkage with the market's requirements. Therefore, though the rice growing area has been seen a considerable reduction, the rice yield and production have increased and food security has been assured.

Over the 4 recent years, the rice growing area has decreased by 222,000 ha, from 7666 million ha in 2000 to 7444 million ha in 2004.

Maize production has been developed rapidly as well, from 2 million tons in 2000 to 3.45 million tons for the year 2004.

The output of grained crops was increased from 34.5 million tons in 2000 to 39.3 million tons in 2004, i.e. by 1.2 million tons a year (or 3% increased a year). The target of export of 3.5 – 4 million tons of rice per year has been gained while the output has been interruptedly increased, and the national food security has been maintained.



Fig. 1. Sowing soybeans directly to the rice field without tillage, just after rice harvested

1.2. Production of industrial crops and fruit trees has been aligned with the market's demand, and many concentration areas of commodity production have been established in close linkage with the processing industry.

Under quite favorable conditions of the market, with strong investment in intensive farming, most of cultivated area of industrial crops was expanded, and the yield and production were also considerably increased. Compared with 2000, in the year 2004 the area of rubber trees was increased by 39,000 ha (by 9.5%), that of black pepper increased by 23,000 ha (83%), and cashew nut – 86,800 ha (1.44 times). Though the tea market seen some challenges especially in 2003, the area of tea growing was still increased by 31,000 ha in 2004 vs. 2000 (i.e. increased by 35%). Outputs of these crops were increased by 37%, 90%, 3 times and 45%, respectively. The coffee area in 2004 was 503,000 ha, i.e. reduced by 59,000 ha compared with 2000 (10.5% decrease).

The area of short-term industrial crops was also extended very quickly. That of soybean in 2004 was increased by 58,400 ha (47%) compared with 2000, peanuts – increased by 14,000 ha (5.7%), cotton – 8,000 ha (43.2%). The area of sugarcane however remained at 300,000 ha. Outputs of these crops were also increased by 62.1%, 27%, 57.4% and 5.5%, respectively.



Fig. 2. Peanut is mulched by PVC film



Fig. 3. Peanut is intercropped to sugarcane

Due to the increasing trend of domestic consumption and export, the area of all fruit trees was extended over the last 4 years. From 565,000 ha in 2000, it increased continuously to 747,800 ha in 2004, i.e. by 182,800 ha.

The pineapple area was increased from 37,000 ha in the year 2000 to 44,000 ha in the year 2004. Processing factories are also closely working with local provinces to invest in developing material zones for the processing industry.

Vegetable and food crops have also been developed over the last 4 years, from 662,300 ha in the year 2000 to 799,600 ha in the year 2004, i.e. increased by 137,300 ha (20.7%). Models of clean vegetable producing households and cooperatives that provide vegetable of good quality through a network of distribution agents and vegetable shops in big cities appeared to be successful and very effective, with the output valued up to VND 50 – 100 million a year.

To improve the soil quality and increase yield as well as output of agro-products, the Vietnam Institute of Agricultural Engineering and Post-harvest Technology has studied and applied many technological projects into agricultural production and people's life such as system of advanced technology and equipment for mechanization of sugar-cane cultivation, including the main equipment as sugar-cane-leaf rotary chopper BLM-1.2, deep chisels XS-1.2, XS-1.8, stump cutter, etc.



Fig. 4. Sugar-cane-leaf rotary chopper BLM-1.2



Fig. 5. Deep chisels XS-1.2

Recently, VIAEP has applied a model of earth-worm keeping to treat agricultural waste, to make the soil more fertile and the worm itself to be added as edibles for raising of pig, chicken, fish, tortoise, eel, etc.



Fig. 6. Keeping earth-worm to improve soil quality and to add nutrients for animals

Beside the above-mentioned, balance fertilization in relation to organic fertilizer is also very important. Integrated nutrient management is the efficient use of all types and forms of nutrients, both those originating from the field or farm and those from outside the field or farm. Balanced fertilization achieved when the cropping system is supplied with the correct proportions of N, P, K, Mg and other nutrients.

There are three main approaches to soil fertility and plan nutrition management:

- Plant crops adapted to indigenous soil nutrient supply;
- Improve the soil fertility to meet the crop's requirement;
- Fertilization with organic and inorganic materials.

Crop residue management is a subject to study and to practice in Vietnam especially for the sloping area and degraded soil (acrisols). Normally the soil in the area is very low in cation exchange capacity, low in organic matter, N, P and K. Returning crop residue to soil improves significantly soil physico-chemical properties. However, inappropriate agricultural practices and continuous cropping without adequate nutrient are occurring in many places in Vietnam fields. Recent research results urge that there is a large potassium imbalance for paddy for example, because each tone paddy exploits from soil about 20 kg K_2O , it means 200 kg K_2O per ha for a rice annual yield of 10 tons. The nutrient depletion is also indicated not only for other major elements (N, P, K, S, Mg...) but also for micro-elements (Mo, Bo). Further, more imbalance (depletion or eutro-phication) and not friendly fertilization alters the chemical and physico-chemical characteristics of soil and destroys the microorganisms' lives. The management of the soils requires integrated practices that can increase fertility, and the nutrient and water holding capacity. Biological management of the soils can be an effective way to increase soil quality through management of biomass, i.e. farmyard manures, crop residues, green manures, and alley cropping. In addition, the effective management of the soils needs careful consideration of appropriate techniques not only to address the issue of low productivity, but also to protect the environment.

1.3. Animal husbandry continued to develop with high growth rate to meet the increasing domestic consumer's demand of meat, eggs and milk products.

Fig. 7. Plant for manufacturing microorganism fertilizer



1.4. Forestry has made greater contribution to agro-forestry economy. Natural forests have been better protected and restored, while man-made forests have had initial and positive signs of quality and efficiency improvements.

Forestry activities have moved from reliance on state owned agencies to social forestry development with participation of many economic sectors. The forestry sector has seen a lot of strong changes from exploitation, as the major activity in the past, to protection of natural forests and promotion of giving forest lands to people and increasing the sense of ownership of forests. As a result, natural forests were restored quite fast.

Economic afforestation was also strengthened on the basis of new technologies and techniques that bring higher productivity for man-made forests. Exploitation of natural forests therefore has been limited and man-made forests are now greater resources to ensure the domestic demand of wood, as well as the requirements of “socializing” forest protection and development.

Apart from investment in forest development and restoration-oriented protection, many localities have followed integrated exploitation by combining business with ecological tourism, creating new jobs and increasing income for people doing forestry business.

Rural industries and services, especially traditional handicraft villages, have experienced fast developments over the last 5 years, with the average growth rate of about 11%/year.

2. The agro-forestry sector has followed the intensive development trend towards improved productivity, quality and efficiency (most of agro-forestry products now have had better quality and higher output).

2.1 Most new sciences and technologies have been widely applied in agriculture. The new varieties program has appeared to be highly effective and contributed to the increase of agricultural productivity and quality over the last 5 years.

In animal husbandry, new breeds have been used to improve the productivity and quality of meat, egg and milk products.

In forestry, many new and advanced techniques and technologies have been applied and helped to improve the forest productivity and quality, especially such technologies as selection and creation of new varieties of trees, quick multiplication by cell cultures or cutting. The success rate of plantations has reached 80%, instead of 50% in the past years. In many plantations, the productivity is up to 15 – 20 m³/ha/year.

2.2. Weights of commodities have increased and become more strongly export-oriented.

The shift in the rural and agricultural economic structure has led to rapid increases of commodity weights in the agricultural sector. The ratio of exported products to total products has been increased to 20% in terms of rice, 95% (coffee), 85% (rubber), 75% (tea), 90% (cashew nut), and 98% (black pepper), etc.

The value of agricultural production is increased annually by 5.1% on the average, compared with the target of 4.5 – 5%, and the value of products gained from one hectare of agricultural land has been increased from VND 17.5 million in 2000 to VND 19.4 million in 2003, and VND 22 million in 2004.

2.3. There have been positive developments in consumption of agro-forestry commodities, accompanying with strong growth in export.

Export of agro-forestry products continues to be expanded. Some products have earned large market shares in the region and in the world such as rice, rubber, coffee, black pepper, cashew nut, furniture, etc. The export revenue of agro-forestry products in the 5 year period 2001 – 2005 was estimated at USD 17.5 billion, i.e. about USD 3.5 billion a year on the average, and increased by 10% a year. The actual export revenue in 2004 was USD 4.35 billion, more than USD 1 billion higher than that in 2003, i.e. increased by 34%. In particular, the export revenue of forest products was increased quite strongly, reaching USD 1.123 billion, i.e. 1.77 times higher than in 2003.

3. Production arrangements in the agro-forestry sector have had new development

For state owned agricultural or forestry farms, the MARD has worked with provinces to do review and assessment of their land use situation and production/business activities, and formulate plans on organizing, reforming and developing state owned agro-forestry farms. The household economy has made new development steps, with larger scale, which is based on increased and extended premises of small industries, handicrafts, services and rural side jobs. The farm economy has also increased fast in terms of quantity, and enlarged its scale, as well as invested more in improving productivity, quality and efficiency. Now there are more than 80,000 households doing agricultural production under the form of agricultural farms. Especially large scale animal husbandry farms have been developed in almost every region. Many farms are raising hundreds of sows, thousands of porkers, and tens of thousands of chicken or other poultry.

Over the past years, the private sector made strong steps forwards through small and medium enterprises. Many private enterprises have invested in processing rice, cashew nut, tea, coffee, vegetable and fruits, and salt.

4. Rural infrastructure has been strengthened and improved.

The rural socio-economic infrastructure has been improved and developed, especially those for irrigation/drainage, contributing to promoting production and improving the population's living conditions.

4.1 Irrigation/drainage facilities

- Water supply and irrigation

Water supply and irrigation have basically met the demands on socio-economic development, including in the agricultural and rural sector. Over the last 5 years, the Government has invested VND 21,511 billion (excluding investment in dykes and embankments), of which VND 9,874 billion managed by the MARD and VND 11,637 billion managed by provinces. Over the same period of time, the Ministry has also invested in constructing 244 facilities, of which 156 facilities have been completed and put into operations, creating more 94,000 irrigated hectares, 146,000 drained hectares, preventing salinity intrusion for more 226,000 hectares, providing bulk water for 206,000 hectares, and improving quality of water supply for 1 million hectares. The total irrigation and drainage capacities by 2005 have reached 8 and 1.7 million ha of cultivated land, respectively.

- Dyke protection and flood control

Over the last 5 year period of 2001 – 2005, VND 896 billion managed by the MARD were invested to rehabilitate dyke systems in 19 provinces in the North, Northern Central Coast, and support a part of similar efforts in the central coastal provinces. The amount of excavation and earthfill works were more than 10 million m³, and 880,000 m³ of rock were used to construct bank protection works.

4.2. Other infrastructure systems

Other infrastructure systems in rural areas such as transport, power supply, have also been improved.

5. There has been strong development in rural areas, the people's life has been improved, and poverty reduction has been promoted.

Rural economy has achieved significant development, with the average agricultural growth rate of 5%/year; rural industries and services have developed quite well, especially the agro-forestry and marine product processing industry has grown at 11 – 12% a year in the recent years.

Infrastructure in many rural areas have been improved, irrigation schemes have been able to irrigate 90% of the rice cultivation area. Tens thousands of subsidiary crops, industrial crops and fruit trees have been grown; the dyke system has been strengthened. So far, 98% of communes have had automobile roads linked to the centers. More than 90% of the communes have had access to power supply, 58% of rural population have had domestic water supply, 99% of the communes have had health care stations, and 100% of the communes are now in the service area of national television.

6. Administrative reform and human resources training have been promoted for agricultural and rural sector

Administrative reform has been promoted over the recent time and shown positive results: implementation of the state management function, advising on dealing with macro-level governance, issuance of policies to overcome difficulties in production and consumption of agricultural products, mobilization of resources for agricultural development.

The actual process of dealing with natural disasters (droughts, floods, and forest fire), avian influenza, foot-and-mouth diseases, and pests in crops has shown clear and significant improvements in the sense of responsibility and executive capacity of the entire management system.

III. MAJOR REASONS FOR THE ABOVE ACHIEVEMENTS

The Government has always paid attention to agricultural and rural sector, and issued many new policies to conform to the reality and the people's desires. Close and regular guidance from the Government has helped to take many measures to timely resolve difficulties and challenges, giving assurance for development of production. Other reasons include active and effective support from Ministries and sectors and close guidance from party committees and authorities of various levels, in addition to the unit-level initiatives and determination to overcome difficulties as well as enormous efforts from farmers all over the country.

Many advanced techniques and technologies have been applied. So far, more than 90% of rice growing area, 80% of maize area, 60% of sugarcane area, cotton, fruit trees, etc. have used new varieties. In animal husbandry, new breeds have also been used and helped to increase significantly the productivity and quality of meat, eggs and milk products. In forestry, many new technical advances have been applied, especially the techniques of quick selection and creation of new varieties, and quick multiplication by cutting and cell culture techniques. As a result, the productivity and quality of forest plantations have got extensive improvements. Mechanization, new farming techniques, harvesting/preservation and processing techniques for agro-forestry products has been used widely and extensively, and new side jobs have also been developed.

The concern about sustainable land use has become a worldwide issue, and finding the ways to achieve synchronic increase in food production and preservation of natural resources requires the world common efforts. In this context, conservation farming or conservation agriculture has become the most promising way to maintain agricultural production sustainable.

IV. DEVELOPMENT DIRECTIONS

1. The modernization program in the agro-forestry sector

1.1. To implement the modernization program in the agro-forestry sector in the view of increasing the productivity and the output; improve the quality, the effectiveness and the competitiveness of the sector on the market orientation.

With regards to paddy and rice, in order to continue to put in value the comparative advantage on rice cultivation in the delta areas, especially in the Mekong River Delta area; to concentrate in increasing the productivity and the quality of rice by utilizing new varieties with high productivity and quality that meet the demand of the domestic and export markets; to apply in a uniform manner measures aiming at reducing the production costs of paddy to less than 1000 VND/kg, the target is to expand the program of cross-bred varieties so that the total rice production reaches about 39 million tons in 2010, and to export 3.5 – 4 million tons of rice per year.

In the mountainous areas, especially in remote and highland areas, it is necessary to invest on small irrigation infrastructures together with the establishment of terrace fields, intensify activities aiming at encouraging agriculture development and assisting the farmers in the production of food and food staples for local demand.

1.2. To develop the cattle breeding at large scale following the form of farming, industrial grown; ensure the epidemic-free, in order to meet the domestic and export demands.

To develop different breeds of cattle and poultry in the view of establishing concentrated breeding regions in the form of farms, industrial grown, and linked to processing premises and waste treatment.

1.3. To implement a high socialization of activities regarding protection and development of forest resources; increase the forest coverage to 43-44%; increase the forest quality and efficiency.

1.4. To concentrate on application of measures aiming at improving the productivity and quality of salt

The plan is to stabilize the salt production area of 15.000 hectares, invest in modernizing salt production by clean technology in the view of increasing the productivity and the quality of salt, to provide sufficient materials for the chemical industry and meet the domestic demand, with an annual production of 1.5 million tons by 2010.

2. To strongly development of rural industries and services to accelerate the economic restructuring process and the labor repartition in rural areas

To develop the processing industry for agricultural and forestry products in order to create a stable consumption market for producers and increase significantly the value of agricultural products. The processing industry for agricultural products will be focused on leading export products that are worldwide competitive and can bring a high export value to Vietnam such as rice, coffee, rubber, cashew nut, vegetable, meat...in order to ensure a growth rate of at least 12% per year.

3. Construction and development of the rural infrastructure

3.1. Irrigation

- Concentrate on investments aiming at modernizing and improving the management efficiency and the exploitation of irrigation projects. Apply new and advanced technologies on the design, building and management of irrigation projects; implement the socialization in the investment and management of irrigation projects; develop co-operatives and the organizational management of agricultural irrigation for farmers.
- Concentrate on investments aiming at restoring and ameliorating, upgrading and renovating the management of irrigation projects so that to enable to increase at least 10% more of the utilization performance of the output of existing projects and augment the area of land irrigated by 700 thousand hectares.
- Continue to develop irrigation by taking advantage and exploiting the valley of rivers in order to provide water to the agricultural production, salt production, aquaculture, tourism, prevention and minimization of calamities. Move towards the allocation of investments on irrigation projects that aim at watering coffee, tea, sugar cane, and vegetable plantation, as well as producing salt and developing aquaculture. Give priority to investments on developing irrigation systems for mountainous, central coastal areas, Central Highlands; resolve promptly the situation of lack of fresh water for agricultural production and daily life of the population in these regions.
- Implement vigorously the canal strengthening program; together with applying water saving technologies in irrigation process, improve the efficacy of utilization of irrigation projects.

3.2 Dyke management and flood control

- The task of flood control and natural disaster relief has to meet the requirements of sustainability and security in the face of natural disasters to mitigate the damages caused by the natural disasters. The assurance of dikes security must be considered as that of the national security especially in the context that the economy is increasingly open and developing.
- Increase protection measures of project development, the task of forecast and warning of floods with the view to enhancing the possibilities of the prevention to reduce the damages by the natural disaster; find the solution to distribute and slow down the flood to ensure the security of

dike system in Red river delta; intensify the forestation of riverhead, the density of trees in the forest to keep water and soil against sweeping floods; clear the river-beds and river-mouths to let the flood out under the Ordinance on Dyke management and flood control.

3.3 Rural water supply and sanitation

-Implement socialization of the investment in the development and management of exploiting and using water supply facilities in rural areas to mobilize a lot of investment capital and use effectively as well as intensify the sustainability of the projects; encourage and support rural households to invest in rural sanitation projects (animal sheds, latrines, bathrooms, biogas pits).

3.4 Rural transport

The Government will assist to meet a part of capital and technical needs; taking advantage of financial assistance from international organizations and foreign countries; mobilizing contributions of the people (in cash or in kinds) to quickly develop the rural transport system to meet the demands of agro-forestry commodity production and people's travel. Ensure that most of the communes have automobile roads to their central areas; reach the 95% rate of paved roads in districts and communes, of which 60% being concretized roads; and ensure that 90% of roads are safe for travel in all 4 seasons around the year. Reach the 50% rate of constructed permanent bridges and sluices, and eradicate rope bridges.

3.5 Development of the information system

- Increasing the investment in the information networking system from the ministries to localities and enterprises; regularly providing information on production, market & prices, plague and disaster prevention.
- Developing the application of information technology in agriculture and rural sectors as a breakthrough in the transition of production, management and business method in this area.

4. Building the new production relation

- The Government continues its policy to facilitate the development of household economy to both higher level and wider range. Encouraging households with enough financial capacity, labour and experience to develop farm economy. Supporting and creating favourable condition for the poor households to develop their production to eradicate hunger, reduce poverty and enrich themselves.
- Developing the programs which allocates, renovates and enhances the production and business activities of state-owned farms and plantations according to the Decree 170/2004/NĐ-CP and 200/2004/NĐ-CP. Completing the transformation of state-owned enterprises to joint-stock enterprises; or the handing over, sale, lease, dissolution and bankruptcy of enterprises in order to increase the production and business capacity of the enterprise system, which acts as the mid-wife of the development of cooperatives and households.
- Supporting and facilitating the quick, effective, sustainable development of cooperative economy based on the voluntary cooperation between households and farms in different forms and various levels to increase the effectiveness of household and social-rural economy.

5. Building and developing a new rural area

5.1. Building new villages and urbanizing the rural area

- Implementing the rural planning in accordance with the structural transition and sustainable environmental and social development.
- Establishing the institution and mechanism to coordinate the major national programs, international humanitarian aids project and inter-sectorial policies to collectively and effectively implement the poverty reduction and hunger eradication strategy. Establishing the farmer community organizations in villages to actively control and receive the rural development as well as poverty reduction and hunger eradication projects.

5.2. Implement program on hunger eradication and poverty reduction

- Prioritize methods of subsidizing areas in difficulties, especially mountainous and remote, ethnic areas, supporting poor families for the goal of social equality in the cause of rural and agricultural industrialization and modernization.
- The State makes investment in or providing loans to people for going to reclaim new land, forestation, planting industrial or fruit trees, developing cattle breeding and seafood catching for the development of industries and services. Meanwhile, the State promulgates favorable policies to encourage enterprises to invest in rural area for the shake of providing more rural employments.

5.3. Take the advantages of each agricultural investment area for reducing/restricting the gap of income and living standards between different areas

V. CONCLUSION

In the past 20 years, Vietnamese agricultural production has obtained rapid, steady growth. The agricultural production value achieved an average increase of 5.5% per annum. Thanks to this, Vietnam basically ensured its food security, paved the path for shifting structure of agricultural economy and for developing non-agricultural industries. Several export agro-products of Vietnam have been in the world highest rank such as black pepper, coffee, rice and cashew nut. In the past 10 years, average per-capita income in the rural areas of Vietnam has increased roughly twice.

According to the Ministry of Agriculture and Rural Development of Vietnam; however, Vietnamese agricultural economy has achieved great initial results, but process of its development is seen not completely sustainable. The rapid shift of structure of crops and domestic animals makes changes of exploitation mode of resources of land, water and biology in large scale. Moreover, activities of survey, design, control and supervision are still insufficient; therefore, many dangers occur such as ecological imbalance, threat to the competitive ability of agricultural sector.

For this reason, simultaneous with application of safer technology to reduce environmental pollution, Vietnam has done its utmost to prevent deforestation, conserve biological diversity, control birth-rate, improve environmental hygiene, create jobs and increase standard of living for the people. To protect the environment, many countries have waged environmentally friendly movements in various names as sustainable agriculture, ecological agriculture, appropriate agriculture, integrated agriculture, etc. with the activities of research and application of production modes oriented to sustainable development in all sectors.

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