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SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT IN VIETNAM

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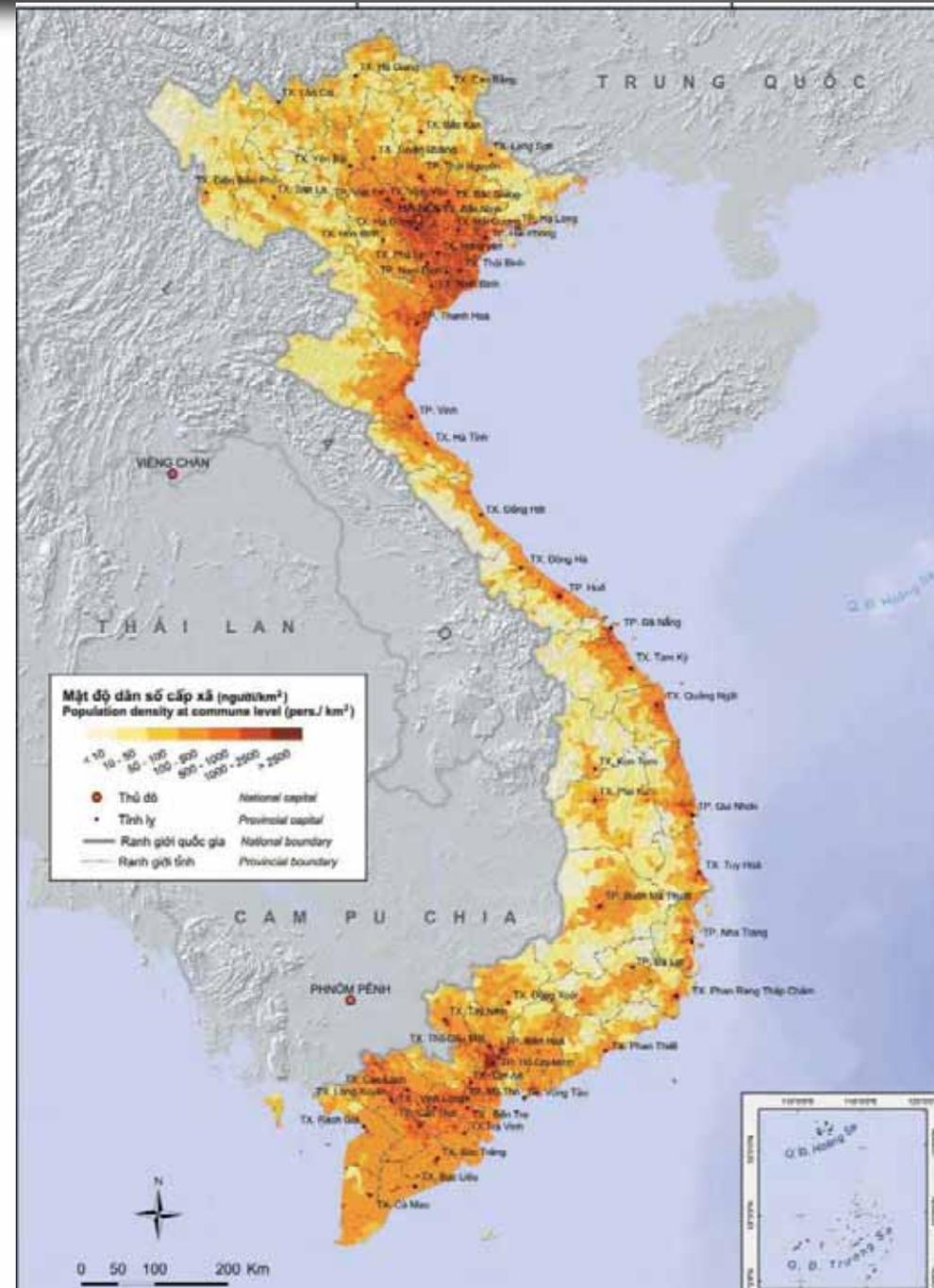


I. INTRODUCTION

❑ Vietnam lies in the region of monsoon, tropical climate with a high temperature (average between 21° C and 27° C), rainfall volume of 1800-2000mm/year and not evenly distributed among the months of the year.

❑ Versatile and various climates of the regions create a variety of vegetation and domestic animals.

❑ Bad thing of climate is drought in the dry-season, floods and storms in the rainy season.





I. INTRODUCTION

- ❑ 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.
- ❑ 11,478,000 ha of bald hills and empty land, need measures of investment and improvement to bring high effect to socio-economy and ecological environment.
- ❑ 75.8% of Vietnamese labour-force engaged in agriculture, forestry and fisheries.
- ❑ Average GDP in 2005 only USD643 per capita. Agricultural production mainly manual with small scale and low productivity. The yields of crops and animals only 60 – 70% compared with other countries in the region.



I. INTRODUCTION

- ❑ 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 been a warning of overloading nutrient to soils in arable areas. Recently, organic farming promoted as an alternative to common agriculture in Vietnam. This may cause toxin to some extent with high accumulation with the time.
- ❑ In some areas of highly intensive cropping systems with cash crop (vegetable and flower), with high rate of fertilizer uses, both for inorganic and organic materials, the soil would probably be overloaded with nutrient.

II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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

- ❑ Rice growing area reduced to increase aquaculture and promote cultivation of other crops of higher value; however, rice growing developed for better quality and higher efficiency and food security has been assured.
- ❑ Maize production developed rapidly from 2 million tons in 2000 to 3.45 million tons for the year 2004.
- ❑ The output of grained crops from 34.5 million tons in 2000 to 39.3 million tons in 2004.



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



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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□ Production of industrial crops and fruit trees aligned with the market's demand, and many concentration areas of commodity production established in close linkage with the processing industry. Maize production developed rapidly from 2 million tons in 2000 to 3.45 million tons for the year 2004.

□ In comparison with the year 2000, in the year 2004 the total area, the yield and production of some industrial crops were also considerably increased:

Crop	Area increase	Output increase
Rubber trees	39,000 ha (by 9.5%)	37%
Black pepper	23,000 ha (83%)	90%
Cashew nut	86,800 ha (1.44 times)	3 times
Tee	31,000 ha (35%).	45%
Soybean	58,400 ha (47%)	62.1%
Peanuts	14,000 ha (5.7%)	27%
Cotton	8,000 ha (43.2%)	57.4%

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❑ The area of all fruit trees was extended from 565,000 ha in 2000 to 747,800 ha in 2004, i.e. by 182,800 ha.

❑ Vegetable and food crops also been developed from 662,300 ha 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.



Fig. 2. Peanut is mulched by PVC film



Fig. 3. Peanut is intercropped to sugarcane



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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□ 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 (VIAEP) has studied and applied many technological projects into agricultural production 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.

II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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



Fig. 5. Deep chisels XS-1.2

II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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□ 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



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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

❑ 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.

❑ 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.



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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

Fig. 7. Plant for manufacturing microorganism fertilizer





II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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

□ Forestry activities have moved from reliance on state owned agencies to social forestry development with participation of many economic sectors. The forestry sector changed from exploitation, 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.

□ 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.



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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).

□ 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.

□ Export of agro-forestry products 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.



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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.



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

4. Rural infrastructure has been strengthened and improve

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



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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

- ❑ 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.**



II. RECENT ACHIEVEMENTS IN DEVELOPMENT OF AGRICULTURE AND RURAL AREAS

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



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.**



III. MAJOR REASONS FOR THE ABOVE ACHIEVEMENTS

- ❑ Many advanced techniques and technologies have been applied 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

- ❑ 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.**
- ❑ 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 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.**



IV. DEVELOPMENT DIRECTIONS

- 2. To strongly development of rural industries and services to accelerate the economic restructuring process and the labor repartition in rural areas*
- 3. Construction and development of the rural infrastructure*
- 4. Building the new production relation*
- 5. Building and developing a new rural area*



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.



V. CONCLUSION

□ According to the MARD 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.



V. CONCLUSION

□ 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.

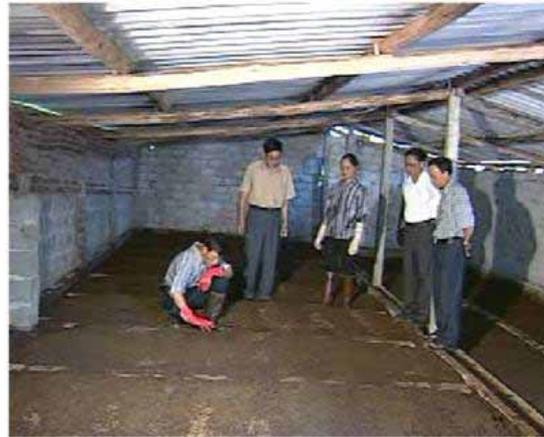


Equipment for manufacturing microorganism fertilizer





Breeding and keeping earth-worm to improve soil quality, to treat animal waste, agro-by products and to add nutrients for animals





Thank you very much for attention!

