Pollution on Rural Areas Situation and Solutions

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1. Situation

Up to the end of 2007, there were 13.78 million families in rural areas; 70.9% of them were in farming business; 10% in manufacturing and construction business and 14.8% in the service sector. Rural population amounted to over 61.5 million accounting for 71% of the population. Rural labor accounted for 60% of the working population and 80% of them do farming business. Agricultural land comprises some 9.3 million hectares and 6 million hectares were used for crop growing (four million of which were use for rice growing).

In the years 2001-07, the policy to change the structure of agricultural products, urbanization and development of industrial parks made the farming land to contract by some 90,000 hectares a year on average while the area of reclaimed land was very small and rural population rose by one million a year. This situation made the per capita farming area fell from 0.11 hectare in 2005 to 0.9 hectare in 2007 and the farming area per peasant fell from 0.26 to 0.23 hectare in the same period.

The forest area was 14.6 million hectares; 5.4 million of which are exploited forest; 7 million hectares were protective forest and some two million hectares of specialized forest. The sea-farming area comprises 700,000 hectares. Thus, all farming areas have been reduced by urbanization and industrialization while the rural population kept increasing with the result that contradiction between natural resources and personal income becomes more serious and pollution widespread in rural areas.

After 20 years of the economic reform, the living standard in rural areas has been improved to a certain extent but the ecosystem and environment are increasingly polluted by different factors and causes.

a. Development of industrial parks and export processing zones: Seventeen years after the industrialization program, there were some 150 IPs on a total area of 32,325 hectares and most of them were built in rural areas around towns and cities. Some 53.4% of total IP area (or 21,367 hectares) have been filled with factory buildings. In the populous Hồng Delta, 34 IPs with a total area of 6,455 hectares have been developed, mostly from rice growing land. In addition, provinces in the delta have had plans to develop thousands of hectares of farming land into IPs. In the Eastern South, hundreds of IPs have been built in Đồng Nai, Bình Dương, HCMC and Bà Rịa- Vũng Tàu to the detriment of farming land. These IPs have helped increase the industrial output, create new jobs for local residents and change the face of rural areas but they produced bad effects on the environment and natural resources. According to the survey "Estimate of management of IPs in some provinces" conducted by the Federation of Scientific and Technological Associations in October 2007, effluent from the Sông Công IP in Thái Nguyên Province is not clear enough to be dumped at canals or streams flowing through rural areas. Concretely, its zinc content is from two to 4.5 times higher than the standard; and NH4 content from 1.4 to 3.0 times higher. Unwanted substance in the effluent from the tile factory Việt Ý was 2,212.9 mg per liter, or 22 times higher than the acceptable limit. The air in the IP was also polluted seriously, especially in areas around the zinc factory. The air pollution around the zinc factory in the Sông Công IP was two to 13.46 times higher than the limit set by the Vietnamese Standard, especially in content of dust and NO2. In the Tiên Sơn IP in Bắc Ninh, the air was polluted by smells from such food processing factory as Acecook Vietnam, Asia Beer Factory, and EH Bran Factory, which caused unpleasant feelings to local residents. The situation was more serious around IPs in other provinces. The main cause of this situation is the fact that most IP built no works for solid waste and effluent treatment. According to official statistics, only 33 out of 150 IPs built effluent treatment plants, and the rest kept polluting sources of water around the IPs.

For example, there is no effluent treatment plant in the Sông Công IP but many factories in there have come into operation and only a few of them had effluent treatment works and most of them dumped their waste and effluent on surrounding fields and canals.

b. Pollution in traditional guilds in rural areas, and farm product processing concerns in suburbs: At present, there are some 1,200 traditional guilds in rural areas producing various products (building materials, sugar, and paper, etc.) or processing farm products. Besides creating new jobs, these guilds emit more solid waste, effluent, noise and dust than the IPs did, because machines used by these guilds are too simple to prevent pollutants; general skills of laborers are very poor and all guilds have no knowledge of environmental issues. In most guilds, there is no mechanism or plan to gather and transport solid waste and control effluent. According to a survey conducted by the Federation of Co-operatives in Vietnam in 2006, the pollution in traditional guilds was very worrying, which affected badly the public health and agricultural production.

In the metal recyclying guild of Đa Hội (Bắc Ninh), from 259 to 400 cubic meters of effluent polluted with acid, heavy metal and others are dumpted at the Ngũ Huyện Khê River every day. Tests show that the effluent from traditional guild to canals and rivers contain a BOD content that is seven times higher than the official standard and a COD content of eight times higher than the standard. In the paper recyclying guild of Phong Khê (Bắc Ninh), there are some 900 production lines that dump some 300 cubic meters of effluent at the Ngũ Huyện Khê River. Solid waste and effluent from the guild have turned some three hectares of rice in Cầu Tiễn into waste land for years. In the animal slaughtering guild of Phúc Lâm (Bắc Giang), there are 30 slaughterhouses that dump some nine tones of waste polluting all ponds, lakes, wells and the air of surrounding communes. In Vĩnh Lộc Guild specializing in making farming tools that consume some 2,000 tonnes of scrap metal a year, rain water and effluent carrying waste materials to lakes and canals pollute them threatening the public health and agricultural production in surrounding communes.

Farm product processing plants in rural areas are also factors causing pollution. These plants are usually near zones supplying raw materials and both of them produce a lot of pollutants. There are some 400 seafood processing plants in Vietnam and all of them are in rural areas. They emit from 160,000 to 180,000 tonnes of solid waste and from eight to 12 million cubic meters of effluent every year. In plants producing sugar and various by-products from sugar canes, transport of raw materials and processing of sugar canes produce a lot of pollutants (dust, smoke, and effluent, etc.) causing harm to water and air in rural areas.

c. Urbanization: The urbanization led to construction of plants and factory building of various sizes along with production of manufactured goods causing harm to the environment. It also means reduction in areas of green trees and ground and underground water; and rises in noise and dust. New towns in Vĩnh Yên, Phúc Yên and Hương Canh (Vĩnh Phúc Province) and development of production of building materials there leading to increases in the noise and dust and effluent along the National Road II are typical example. Similarly, the urbanization in Sài Đồng, Trâu Qùy (Gia Lâm District, Hà Nội), and in suburbs of Hưng Yên Town in recent years has polluted the air and water of communes along the National Road 39.

d. Modernization of the agricultural production also causes pollution. Profit motive drives peasant to overuse fertilizer, insecticide and other chemicals causing harm to the environment and producing food hazardous to health. Changes in selection of crops and animals raised, especially the process of turning rice fields and protective forests into fish farms in Cà Mau and coastal provinces in the Central Vietnam, have upset the ecosystem. Destruction of protective forests, especially in such mountainous areas as in the Western Highlands, for farming land in the past decades have led to disastrous consequences. Numerous fish farms that have gone bankrupt because of death of fish and shrimps caused by polluted water in recent years are also sign of serious pollution. Exploitation of aquatic resources by using explosives has become widespread and uncontrollable with the result that the ecosystem was destroyed.

e. Large- scale animal farms: To limit spread of animal diseases and increase the output of the animal husbandry business, many local governments have encouraged development of animal farms (there are 16,708 anumal farms in Vietnam in 2007). But they have soon turned out to be sources of pollutants. Animal excrement and urine, leftover, and sim-

ply- treated effluent produce bad smell and good environment for bacteria, which make living condition around animal farms unbearable. On surrounding fields, no vegetables could be grown. Measurement of unwanted substances around animal farms shows that the dust density is from two times (about 0.62 mg per cubic meter of air) to five times (or 0.82 mg per cubic meter) higher than the required standard; the NH3 content from 1.6 to 2.5 times higher; and H2S from 2.5 to 4.0 times higher. The volume of bacteria in the air is six times higher than the required standard. Tests of water taken from Cầu and Nhuệ Rivers – main sources of water for animal farms in Hà Tây, Bắc Giang, Thái Nguyên and Vĩnh Phúc - done by the Center of Technology and Environment in 2006 show that all indicators (BOD, COD, SS and coliform) are much higher than required standards.

2. Solutions

a. Beefing up awareness of environmental issues and their effects on economic growth and life quality among local authorities, companies and individual peasants: This solution is very essential but time- and energy- consuming. Most local authorities have paid to much attention to job creation, improvements in personal income, and economic growth in general with the result that nobody cares about the environment. They encouraged changes in the structure of farm products, and exploitation of water, forests and land at any price. When the ecosystem loses its balance, it affects badly the economic growth: area of exhausted land increases, area of forest contracts, shortage of clean water becomes widespread, and floods and other natural disasters are more frequent in all provinces, either in plain or mountainous regions. In 2007, natural disasters cost us VND11,600 billion, or 1% of the GDP. Effort to protect the environment must be supported by the public and it must become a movement. So this solution is very basic and urgent.

b. Perfecting the plan to develop rural areas: The plan should determine what crops or animals are the most appropriate to specific areas and zone land for industrial parks, traditional guilds, animal farms, farm products processing concerns, infrastructure, and waste and effluent treatment plants. Local authorities must prevent productive activities that harm the environment and introduce advanced and eco-friendly farming techniques to peasants in order to help them improve their annual income without causing harm for the ecosystem. Changes in the structure of farm products must be carried out according to the approved plan and unruly developments must be stopped in time. For districts with good irrigation systems, strong measures must be taken to maintain crop farming business with a view to ensure the supply of rice and vegetables. In mountainous areas, destruction of forest for farming land by ethnic minorities must be preventd effectively.

c. Policies on sustainable development: From now to 2015, the area of rice (two crops a year) must be kept at four million hectares. In the Mekong Delta, local governments should discourage the third crop in order to prevent the land from getting exhausted. Technical solution is to apply technical advances to all fields of the agricultural production in order to enhance both productivity and product quality instead of increase the area of farming land at any price.

d. Developing cooperatives of environmental services in rural areas: At present, there are only 134 cooperatives of environmental services in rural areas; 90 of which are speciallied in collecting trash and 47 supplying clean water. They operate well and profitably but they are not present in all communes and there is no policy to encourage them. In the coming years, Ministries of Agriculture and Rural development, of Resources and Environment, and of Science and Technology should introduce policies to encourage the cooperatives of this kinds. Moreover, such cooperatives should be trained in methods of protecting sources of waters, forests and land, and of treating pollutants at small scale. Development of such cooperatives can create more jobs and new sources of income in rural areas, and enhance the awareness of environmental issues among rural residents.

e. Modernizing techniques of storing, preserving and processing of farm products: Besides projects to develop rural infrastructure, the modernization of farming and processing techniques allows us to introduce eco-friendly techniques to peasants, thereby limiting activities that overexploit natural resources. New policies must be adopted to encourage foreign investment in rural areas and farm product processing industry. All plans to urbanize rural areas must include projects to protect the environment and natural resources.■