

Poverty and Natural Environment in the Sustainable Development in the Mekong Delta

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The Mekong Delta is the leading supplier of farm products in Vietnam. In spite of its role in export of farm products, the Mekong Delta still suffers a high proportion of poor families. Most of them are in rural areas, coastal or remote districts where they live on natural resources. High degrees of poverty has become a threat to the sustainable development. This paper covers three aspects: causes of poverty, facts and suggestions to policy-makers.

1. Causes of poverty and facts

C.H.H. Rao and K.Chopra (1991) argue that both extensive and intensive farming can lead to poverty in rural areas. In the extensification, excessive exploitation of land and increases in farming areas at the expense of forests can produce bigger output in a short run. When the environment is damaged, however, the output and income from the agricultural production will fall while the population rise. And as a result, poverty and unemployment make their appearance. In the intensification, overuse of chemicals (fertilizer and pesticide) with the aim of increasing the output damages the soil and water; and this damage, in its turn, causes the output and income to fall while the population keep increasing. Poverty and high unemployment rate appear.

A. Shepherd (1998) examines causes of poverty in rural areas from another aspect and says that application of eco-friendly techniques also leads to the poverty. The application of technical advances differs between regions because of their differences in natural conditions. The application of new techniques requires big investments (in new strains, fertilizer, pesticide, machine, and irrigation, etc.) and involves high degrees of risk, therefore only rich farmers can do so and they benefit very much from technical advances in the first stage of development. In the next stage when governments start supporting the application and new techniques (by giving subsidies and low-interest loans for example), poorer peasants can reform their farming techniques. This reform leads to higher output and prices usually fall, and as a result, average income

of peasants fall accordingly. If this process prolongs, they may run into debt and poverty. Low income and high unemployment rate leads to low opportunity cost. In such a situation, poor peasants are ready to exploit natural resources to make some money (destroying the forests, hunting and fishing illegally, etc.). The environment, therefore, is damaged, and all of them fall into a vicious circle.

Thus, the poverty in rural areas becomes ones factors affecting the sustainable development of the agriculture. Identifying causes of the poverty can help establish a basis for policies to reduce poverty, thereby ensuring the sustainable development of the agriculture.

According to Waheed (1996), Dominique V.D.W and Dileni G. (2000), Bales S. (2001), Wan D.W and Cratty (2002), WB (2007), Ình Phi Hổ và Nguyễn Trọng Hoài (2007), factors that causes poverty in rural areas are as follows:

- Employment: Poor people are usually jobless and work as farm hand or tenants while the rich have well-paid jobs, such as traders or civil servants.

- Education: The poor have low educational levels because they have to work for a living from childhood. As a result, the poor lack knowledge and ability to absorb new techniques; and fall into a vicious circle formed by poverty and poor education.

- Gender: In reality, households run by women are more likely to be poor than the ones with male head. This situation is common in poor rural areas where women hardly get a well-paid jobs and they have to to be housewives and live on income earned by men.

- Size of the household and number of dependents: The bigger the household, the lower the personal income. And such households tend to get poorer. The bigger the number of dependents, the higher the danger of poverty because of higher expenses on education and health care.

- Size of farming land: In rural areas, land is the main means of production and source of income. lack of land or small area of farming land means poverty.

- Size of loans from formal sources: Lack of investment leads to low productivity and low income. Loans from formal sources are important to their effort to reduce the poverty.

- Difficulties for minority groups: Most minority groups live in depressed or remote areas. Poor living conditions and education make them poorer than other groups in vast plains and towns.

- Access to infrastructure: Rural infrastructure includes roads, electricity, fresh water, and communications that are important to poverty-reducing programs. When the rural infrastructure develops, especially by carrying out infrastructure projects, more jobs are created in rural areas.

2. Econometric model used for identifying factors determining the poverty in Vietnam and the Mekong Delta

$$Y = \beta_0 + \sum_{i=1}^n \beta_i X_i + U_i$$

Y is a dummy variable equaling 1 (if the family is poor), or 0 (for the rest). Xi includes factors affecting the poverty (i = 1 - n).

The general formula of the logit model is as follows:

$$E(Y = 1 | X_i) = \beta_0 + \sum_{i=1}^n \beta_i X_i + U_i$$

$$E(Y=1 | X_i) = 1.P(Y=1 | X_i) + 0.P(Y=0 | X_i) = P(Y=1 | X_i)$$

$$P_i = E(Y=1 | X_i) = \beta_0 + \sum_{i=1}^n \beta_i X_i \quad (1)$$

Pi is the probability of poverty.

Data from a survey of living standard of 360 households in 120 communes of 26 districts of seven

coastal provinces in the Mekong Delta conducted in 2004 (VHLSS, 2004) produce the following table.

- The column P (probability) shows values of factors that affect the poverty: gender, family size, farming and non-farming jobs, land area, sum borrowed from formal sources, education and rural infrastructure.

- The column 'simulation of probability' shows that important factors comprise gender, farming and non-farming jobs, and rural infrastructure.

Example: If the initial probability of the poverty for a family is 10%. If this family lives near a big road and other factors don't change, its probability of poverty reduces to 2.8%. Similarly, the initial probability of 20% can reduce to 6%, or from 30% to 9.9%, and from 40% to 14.5%.

Thus, the poverty is always a threat to the sustainable development and it is affected not only by technologies but also socioeconomic issues. Policy makers had better pay attention to the following issues: operation and lifestyle of women in rural areas, performance of agricultural production, availability of non-farming jobs, development of rural infrastructure, size of rural family, and loans needed for education and business of a family.

3. Suggestions on measure to reduce the poverty in rural areas

Measures to reduce the poverty differ between provinces based on their natural conditions, so we only offer suggestions that may be useful to most provinces in the Mekong Delta.

a. More opportunities must be offered to women so they can stop being only housewives, thereby reducing inequality between men and women: To achieve this aim, civic organizations and mass media should help disseminate new concepts of the women's roles in family life and society.

Independent variables	β_i	P	Simulation of probability of poverty when the independent variable rises or falls by one unit and initial probability is: %			
			10	20	30	40
Constant	-1.33866	0.0004				
Gender	-1.23688	0.0000	3.1	6.8	11.1	16.2
Family member (person)	0.413104	0.0000	14.4	27.4	39.3	50.2
Farming job	-1.2858	0.003	3.0	6.5	10.6	15.6
Non-farming job	-0.99704	0.0244	3.9	8.4	13.7	19.7
Land area (ha)	-0.1902	0.0003	8.4	17.1	26.2	35.5
Sum borrowed (VND1,000)	-0.04919	0.0005	9.6	19.2	29.0	38.8
Education	-0.3486	0.0244	7.3	15.0	23.2	32.0
Availability of road	-1.3667	0.000	2.8	6.0	9.9	14.5

Note: Significance of independent variables vary between 5% and 10%. Collineation checked
Source: Trương Thanh Vũ, 2007.

b. Various incentives can be offered to projects to create non-farming jobs as additional incomes for rural residents: The Government had better allocate sources of finance from foreign aid and sponsorship to job-creating projects in rural areas in order to help local residents to diversify their sources of income and avoid dependence on farming businesses. These projects can focus on the following aspects based on natural conditions:

- Restoring and developing traditional handicraft: With their long history, these traditional guilds can make the best use of skills of craftsmen, their brand names and traditional markets.

- Financial support to small and medium enterprises: These enterprises can create jobs for idle labor and employ retired laborers in rural areas to produce handicrafts, consumer goods, or materials for agricultural production.

- Various services can be developed in rural areas, such as supplying credit, insurance, technical materials, consumer goods, and building materials; processing food and aquatic products for export; transport and construction; running resorts, spas and tours based on local landscapes and traditional culture.

- More infrastructure projects (roads, electricity, communications and telecommunications) must be carried in rural areas in order to reduce the gap between urban and rural areas and create more non-farming jobs for the poor. Moreover, this effort illustrates the policy to offer equal opportunities to both urban and rural areas.

c. Improving performance and income of the agricultural production: Agricultural extension system should play an active role in training and transferring new technologies to peasants. Within framework set by the WTO, the Government can increase resources allocated to this system, especially in training its officials and providing with facilities and funds needed for their tasks.

d. Reducing the average size of family by promoting birth control: Most big families are found in remote and coastal areas where residents have no awareness of their vicious circle. The birth controlling program must be linked with poverty-reducing ones, and top priority should be given to these areas.

e. More loans with longer terms for feasible projects:

- Disseminating necessary information and procedures for securing formal loans among the poor,

especially among minority groups, to encourage them to borrow money when necessary.

- Supply of loans must be diversified in terms of conditions, interest rates and repayment schedules; and this effort is not limited to banks for social policies. Projects to provide banking services in rural areas should be supported actively.

- Banking institutions can cooperate with agricultural extension agencies to provide peasants with advice on effective use of loan capital and prevention of risks.

f. Changing peasants' view on importance of education and ensuring equal opportunity to acquire education:

- In remote and coastal districts, general education and textbooks must be totally free for children from poor families in order to help them to get better skills and jobs.

- Provincial governments should pay salary and other allowances timely to teachers in remote districts, and in rural areas in general.

- The education service must be really open to all economic sectors in order to attract contributions from private companies, local and foreign charities and NGOs to development of schools and army of teachers. ■

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