

APPENDIX P : HUMAN DEVELOPMENT INDICATORS

**THE STUDY
ON
MODEL RURAL DEVELOPMENT
IN
NAM DAN DISTRICT, NGHE AN PROVINCE**

FINAL REPORT

APPENDIX-P : HUMAN DEVELOPMENT INDICATORS

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APPENDIX-P : HUMAN DEVELOPMENT INDICATORS

P.1 Introduction

P.1.1 Objective of the Study

Human development indicators is the comprehensive socio-economic index that is recently adopted by UNDP to display degree of relative development for each country and is considered to replace the traditional GDP index. However, it is utilized presently in the analysis at the country level and is not adopted as an analyzing method for a development plan in a limited area. So that, some studies or modifications are necessary in order to adopt this methodology for the analysis of present conditions in specific farming areas. The adoption of this methodology will be considered in the Study based on its effectiveness of analysis of the present conditions in the objective area by unifying indices for different dimensions such as life span, knowledge and living standards of the people in the area.

The objectives of the study are to try to find out what are the development conditions in the Study Area and to try to evaluate effect of integrated project consisting of several sectors projects with different characteristics applying the Human Development Index (hereinafter referred as "HDI"). In the calculation, some assumptions will be required due to the nature of the HDI methodology. Thus, it is quite difficult to get on exact value of HDI. However, it will be possible to make a comparison between the with and without projects situation as the same assumptions will be applied.

P.1.2 Summary of the Study

(1) Data Collection and Estimation for HDI Computation

The data and information concerning following factors at Nam Dan District in 1995 were collected and some of data were estimated based on them.

Life expectancy : 66 years (Health Care Center in Nam Dan District)

Adult literacy: 98% (Estimation based on illiteracy data, Department of Education and Training)

Combined enrollment ratio: 64% (Estimation based on population data, Nam Dan District)

Adjusting real GDP per capita : PPP\$ 835 (Estimation based on actual GDP per capita and comparison of Hanoi and Vinh market price for 109 items)

The same factors for the without-projects were estimated for the year 2010 based on the growth trend of each factor.

Life expectancy : 70 years (Based on the present tendency)

Adult literacy: 99% (Estimation based on present conditions)

Combined enrollment ratio: 75% (Estimation based on present conditions)

Adjusting real GDP per capita : PPP\$ 1,993 (Estimation based on actual GDP per capita growth trend)

(2) Computation of HDI in Nam Dan District

Applying these conditions Nam Dan District's, HDIs for 1995 and 2010 without-projects situation are calculated preliminary as shown below;

Year	Life expectancy index	Education attainment index	Adjusted real GDP per capita (PPP\$) index	HDI
1995	0.683	0.867	0.124	0.558
2010	0.750	0.863	0.319	0.644

(3) Recommendation of Monitoring for Project Effect

For the formulation/implementation of an integrated agricultural development plan consisting of many sector projects, one of the important factors to take into consideration is to continuously monitor the project effects based on the changes of conditions in the project area.

In the Study, the present condition of the Study Area was evaluated applying the HDI method; by doing so, the basic material for the project evaluation in the future was obtained. By monitoring the results of the implementation of the project, it will be possible to have a feedback from the monitoring results to the project which will be useful for other similar projects in other regions. This is one of the objectives of the present Study concerning the formulation of a Model Rural Development Plan. Thus, it is strongly required to execute a continuous monitoring for the rural living conditions applying the HDI method.

The GDP in Viet Nam is doubled within the recent 2 years and a drastic change of economic conditions which is observed also in Nam Dan District has been under way, nationally. On the other hand, life expectancy in Nam Dan District increases by 1 year for each year within the last 4 years. Also, literacy rate reaches to nearly 100% in the District. The combined enrollment ratio almost reaches its maximum rate under the present situation of school facilities. With the consideration of above-mentioned conditions, the frequency of monitoring is considered to be once in 1 to 2 years in order to view a HDI value representing the changes of conditions in agricultural society and economics.

If the method of monitoring requires complex and lengthy investigation, it becomes impossible to conduct monitoring continuously. So that, investigation for monitoring should be conducted simply and quickly maintaining necessary accuracy. There are no major difficulties on the data of average life expectancy and education achievement rate. Because, they are employed based on the official data provided by the Statistical Department. It will be difficult to calculate an actual GDP by employing traditional method. So that, it is recommended to employ a conventional method to calculate an actual GDP based on PPP rate of Viet Nam announced by UNDP, GDP of national average and of Nam Dan District, and comparison of market prices in Vinh and Ha Noi on 20 major food items. The HDI value calculate by employing this conventional method is considered to be sufficient for the purpose of comparing changes in the

society. The list of candidate of major food items to be employed in the study of Nam Dan District is prepared based on the results of this study as follow:

Rice	Fresh vegetables
Bread	Potatoes
Bakery products, biscuits, cakes, etc.	Manioc & other tubers
Noodles, macaroni, spaghetti	Tea
Beef and veal	Sugar
Pork	Chocolate, ice cream, confectionery, etc.
Poultry	Mineral water
Fish fresh/frozen	Soft drinks
Eggs & egg products	Beer
Fresh fruits	Cigarettes

With the consideration of extending the study into the similar integrated project in other area, the monitoring should be executed uniformly by an appropriate organization in the central government, namely MARD which supervise agriculture and rural development in the country.

(4) Preliminary Study for Computing HDI with Project Situations

There is some possibility to measure indirect effects (including synergistic effect) of proposed projects using HDI, if an adequate way to convert project effects into HDI indexes. Basically, as the comparison will be done between effects of the with and without - projects situation, the indexes for the with - projects situation will be calculated based on the estimation of socio-economic conditions after completion of the implementation of the projects. To find out of the factors with projects, the factors for other areas with similar conditions will be considered. However it will be necessary to estimate some factors using the several assumptions. **Thus, the results of HDI computation in the with-project situation will not always explain the actual value for human development. However, it is assumed that it is possible to make comparisons of the effects among the projects if the same conditions are applied.**

A preliminary conversion method to convert projects effect to HDI factors was studied. The main ideas are summarized below:

Preliminary Idea of Converting Manner

Sector	Major converting factor	Life expectancy index	Education attainment index	Adjusted real GDP per capita index
Agricultural plan				
- Land use plan	Non applicable			
- Agriculture	Increasing of agricultural production and productivity			●
- Irrigation and drainage	Increasing of actual irrigated land and mitigation of flood damage			●
- Marketing system and agro-industry	Increasing of agricultural production value			●
- Farmers' organization and supporting system	Smooth and effective implementation of project			□
Health and sanitation	Projects target	□		
Education	Projects target		●	
Transportation and	Differences of conditions between	□	□	□

Sector	Major converting factor	Life expectancy index	Education attainment index	Adjusted real GDP per capita index
Communications	with and without projects			
Electrification	Differences of conditions between with and without projects	☐	☐	☐
Rural water supply	conditions of water related decrease	☐		
Environmental conservation	Non applicable			

Note ●: direct relation, ☐: indirect relation

Based on this idea, HDI with some of proposed projects in some sectors are estimated just for the first trial and results are summarized below;

Trial Computation of HDI with Project

Projects	Estimated Direct Effect	Increased Value of HDI
IR. Irrigation Improvement	2,300 ha of actual irrigated area is increased	0.013879
FD. Inundation Mitigation Plan	Inundation damage for 1,200 ha of cultivated area is mitigated	0.000534
AS2. Seed Supply Plan	Average 10 % of Rice Production will Increased	0.003722
AS4. Agricultural Mechanization Service Center	Average 15 % of Rice Production will Increased	0.000576
A11. Agro-processing Complex	Average 15 % of farm gate price will Increased	0.000432
A12. Market-oriented Forwarding Center	Average 20 % of Rice Production will Increased	0.000576

Combined Case	Increased Value of HDI	Simple Sum	Difference	Portion
IR + FD	0.014725	0.014412	0.000313	2.17%
IR + AS2	0.018012	0.017600	0.000412	2.34%
IR + AS4	0.014743	0.014455	0.000288	1.99%
IR + A11	0.014373	0.014311	0.000062	0.43%
IR + A12	0.014570	0.014455	0.000115	0.80%
IR + FD + AS2	0.019202	0.018134	0.001068	5.89%
IR + FD + AS4	0.015375	0.014989	0.000386	2.57%
IR + FD + A11	0.015279	0.014844	0.000434	2.93%
IR + FD + A12	0.015463	0.014988	0.000475	3.17%
IR + FD + AS2 + AS4	0.021240	0.018711	0.002529	13.52%
IR + FD + AS2 + A11	0.019792	0.018566	0.001226	6.61%
IR + FD + AS2 + A12	0.019989	0.018710	0.001279	6.84%
IR + FD + AS2 + AS4 + A11	0.021892	0.019143	0.002749	14.36%
IR + FD + AS2 + AS4 + A12	0.022109	0.019287	0.002822	14.63%
IR + FD + AS2 + AS4 + A11 + A12	0.022239	0.019719	0.002521	12.78%

As the above calculation is a first trial based on the rough estimations, it is recommended to carry out the further detailed analysis for this point in the future.

(5) Tasks in the Future

1) Feedback of Monitoring in Developing Area by HDI

It is extremely important to classify HDI in developing areas into two categories namely HDI affected by implementation of development projects and HDI affected by changes in the area through the time, for results of monitoring to be reflected on modifying project or planning another projects in other similar areas. In order to achieve this, analyzing data collected from wide range. There is a possibility that a change of HDI affected by the project can be separated by comparing a change of HDI in the project area with a change in the area without project. Accumulation of data and results of study are expected in the future.

2) HDI Application for Steps of Planning Project

In planning integrated agricultural development including wide range of sectors such as society, economic and living conditions, clarifying the results of developing plan integrally not limited within an individual sector is extremely important. Employing a new access of evaluation which can express changes by implementing projects in rural areas can support the most effective planning. HDI considered at this stage itself is insufficient to evaluate the absolute quantity of project effects, however, it is considered to be a great help to compare results in a planning stage.

In this study, an integrated effect resulted by major components in the project is obtained by employing the simplified method which can be formulated at this stage. As a result, the increase of HDI in the area is obtained as a value of 0.022. Some of the components in the rural development plan are difficult to apply reasonably and simply in an evaluation of HDI after the completion of a project. However, further study in the future is expected together with realizing simplified calculation method and improved evaluation accuracy.

P.2 Human Development Indicators

P.2.1 General

Human development indicators have been reported in "Human Development Report 1996, UNDP" and 36 kinds of indicators as shown below were suggested to try to measure development degrees of the countries in whole over the world.

Human Development Indicators

No.	Indicators	No.	Indicators
1	Human development index	19	Military expenditure and resources use imbalances
2	Gender-related development index	20	Growing urbanization
3	Gender empowerment measure	21	Demographic profile
4	Profile of human development	22	Natural resources balance sheet
5	Profile of human deprivation	23	Energy consumption
6	Trends in human development	24	National income accounts
7	South-North gaps	25	Trends in economic performance

No.	Indicators	No.	Indicators
8	Rural-urban gaps	26	Profile of human development
9	Women and capabilities	27	Profile of human distress
10	Women and political and economic participation	28	Violence and crime
11	Child survival and development	29	Health profile
12	Health profile	30	Education profile
13	Food security	31	Communication profile
14	Education imbalances	32	Unemployment
15	Communication profile	33	Aid flows
16	Employment	34	Urbanization
17	Wealth, poverty and social investment	35	Environment and pollution
18	Resource flow imbalances	36	Status of selected international human rights instruments

HDI is one of indicators and it is considered that the results of all indicators may be reflected by this index.

The basic principle of HDI methodology is expressing degree of development for each country by a numbers between 0 (as the foundation of intended development) and 1 (as the final condition of intended development). Degree of development for each country is categorized into the following three groups:

- 1) less than 0.5 : low developing group
- 2) 0.5 - 0.8 : middle developing group
- 3) more than 0.8 : high developing group

The proposed factors and categories that should be considered in the Study are listed in Table P.2.1. However, some difficulties in implementing this methodology may exist in the process of collecting reliable information representing the survey area, analyzing the collected data or judging the results of analysis. Data collection is mainly done through socio-economic survey in villages. However, it is necessary to pay special attention when selected the optimal farm household to be surveyed in order to collect additional representative data for each area.

P.2.2 Computing the HDI

The HDI is based on three indicators, as measured by life expectancy at birth, educational attainment, as measured by a combination of adult literacy (two-thirds weight) and combined primary, secondary and tertiary enrollment ratios (one-third weight); and standard of living, as measured by real GDP per capita (PPP\$). For the construction of the index, fixed minimum and maximum values have been established for each of these indicators.

- Life expectancy at birth: 25 years and 85 years
- Adult literacy: 0% and 100%
- Combined enrollment ratio: 0% and 100%
- Real GDP per capita (PPP\$): PPP\$ 100 and PPP\$ 40,000

For any component of the HDI, individual indices can be computed according to the general formula:

$$\text{Index} = (\text{Actual } x_i \text{ Value} - \text{Min. } x_i) / (\text{Max. } x_i - \text{Min. } x_i)$$

If, for example, the life expectancy at birth in a country is 65 years, the index for this country would be:

$$\text{Life expectancy index} = (65 - 25) / (85 - 25) = 0.667$$

The construction of the income index is a little more complex. The average world income of PPP\$ 5,711 is taken as the threshold level (y^*), and any income above this level is discounted using the following formulation based on Atkinson's formula for estimation of utility of income:

$$\begin{aligned} W(y) &= y^* && \text{for } 0 < y < y^* \\ &= y^* + 2[(y - y^*)^{1/2}] && \text{for } y^* < y < 2y^* \\ &= y^* + 2(y^*)^{1/2} + 3[(y - 2y^*)^{1/3}] && \text{for } 2y^* < y < 3y^* \end{aligned}$$

To calculate the discount value of the maximum income of PPP\$ 40,000, the following formula is used:

$$W(y) = y^* + 2(y^*)^{1/2} + 3(y^*)^{1/3} + 4(y^*)^{1/4} + 5(y^*)^{1/5} + 6(y^*)^{1/6} + 7(y^*)^{1/7} + 8[(40,000 - 8y^*)^{1/8}]$$

This is because PPP\$ 40,000 is between $7y^*$ and $8y^*$. As a result of the calculation above, the discounted value of the maximum income of PPP\$ 40,000 is PPP\$ 6,040.

The construction of the HDI of Japan and Vietnam is illustrated below:

Conditions:

Country	Life expectancy (years)	Adult literacy ratio (%)	Combined enrollment ratio (%)	Real GDP per capita (PPP\$)
Japan	79.6	99.0	78	20,660
Viet Nam	65.5	92.5	51	1,040

Life expectancy index

$$\text{Japan} = (79.6 - 25) / (85 - 25) = 0.910$$

$$\text{Viet Nam} = (65.5 - 25) / (85 - 25) = 0.675$$

Adult literacy index

$$\text{Japan} = (99.0 - 0) / (100 - 0) = 0.990$$

$$\text{Viet Nam} = (92.5 - 0) / (100 - 0) = 0.925$$

Combined primary, secondary and tertiary enrollment ratio index

$$\text{Japan} = (78 - 0) / (100 - 0) = 0.780$$

$$\text{Viet Nam} = (51 - 0) / (100 - 0) = 0.510$$

Educational attainment index

$$\text{Japan} = [2(0.990)+1(0.780)]/3 = 0.920$$

$$\text{Viet Nam} = [2(0.925)+1(0.510)]/3 = 0.787$$

Adjusting real GDP per capita (PPP\$) index

Japanese real GDP per capita, at PPP\$ 20,660, is between twice and three times the threshold level. Thus, the adjusted real GDP per capita for Japan would be PPP\$ 5,970 because $5,970 = 5,711+11,422^{1/2}+3(20,660-17,133)^{1/3}$.

Vietnamese real GDP per capita, at PPP\$ 1,040, is less than the threshold, so it needs no adjustment.

$$\text{Japan} = (5,970-100)/(6,040-100) = 0.988$$

$$\text{Viet Nam} = (1,040-100)/(6,040-100) = 0.158$$

Human development index

The HDI is a simple average of the life expectancy index, educational attainment index and the adjusted real GDP per capita (PPP\$) index. It is calculated by dividing the summatory of these indices by 3.

Country	Life expectancy index	Education attainment index	Adjusted real GDP per capita (PPP\$) index	HDI
Japan	0.910	0.920	0.988	0.939
Vietnam	0.675	0.787	0.158	0.540

Above is an estimation example for the country level. Applying the maximum and minimum value set in the UNDP, it is considerable that the comprehensive degree of rural development in the Study area will be measured. Considering dispersion among each element and sectors which are explained by each element, the difference among the development degree of each sector will be fined out objectively.

Furthermore, there is some possibility to measure the indirect project benefit using these indexes. However, some difficulties in implementing this methodology may exist in the process of collecting reliable information representing the Study Area, analyzing the collected data or judging the results of analysis. Data collection is mainly done through socio-economic survey in villages and it is necessary to pay special attention when selecting of optimal farm household to be surveyed in order to collect additional representative data for each area.

P.3 Preliminary Study on HDI

P.3.1 Data Collection and Estimation of Conditions

(1) Data for Life Expectancy

According to the information of the Health Care Center of Nghe An Province and Nam Dan District, life expectancy in this area are summarized as shown below:

Life Expectancy in Nghe An Province and Nam Dan District (years)

	Male	Female	Total
Nghe An Province	63	67	65
Nam Dan District	65	67	66

(2) Data for Education Attainment

1) Literacy ratio

Data for the number of peoples aged 15 to 35 years old was collected from the Department of Statistics in Nghe An Province and other data concerning literacy from Bureau of Education and Training in Nam Dan District. Based on the data, literacy ratio was estimated as shown below:

Litaracy Ratio

	Number of peoples	Number of illiteracy	Illiteracy ratio	litaracy ratio
15 to 35 years old	56,639	777	1%	99%
over 35 years old	47,073	800	2%	98%
Total	103,712	1,577	2%	98%

Source: Bureau of Education and Training, Nam Dan District
Department of Statistics, Nghe An Province

2) Combined primary, secondary and tertiary enrollment ratio

Data for the number of people and student aged 6 to 23 years old were collected and combined enrollment ratio calculated based on this data as shown below:

Gross enrollment Ratio of Peoples for 6 - 23 Years Old

Number of people aged 6-23 years old	Number of students from 1 to 12 grades	Enrollment ratio of 6-23 years old
66,595	42,372	64%

Source: Bureau of Education and Training, Nam Dan District

Though there is no university in Nam Dan, but some of special classes for those over 17 years old has been presented and this program will be continued up to the year 2000.

(3) Data for Adjusted Real GDP per Capita (PPP\$)

According to the one of basic principle in economics which is called the “Law of one price”, one commodity cannot be sold at a different price at a different place and at the same moment. If the price of some commodity in Vinh is lower than the price in Hanoi, somebody is going to buy it in Vinh and to sale it in Hanoi. Then, the demand for that commodity in Vinh and its supply in Hanoi will be increased. This means that the market price of that property will be increased in Vinh and decreased in Hanoi. Consequently, both effects will cancel each other and the market price in Vinh and Hanoi will become the same or be equalized.

The “Law of one price” applied to international markets is called “Purchasing Power Parity (PPP\$)”. When computing HDI, adjustment of the real GDP per capita (PPP\$) instead of actual GDP per capita (US\$) is applied. This is because actual GDP per capita (US\$) is calculated based on the actual exchange rate and exchange rate does not always reflect the actual economic conditions of a country.

The computation of adjusting real GDP per capita (PPP\$) has been suggested by the World Bank methodology. It is based on 255 items as shown in Table P.3.1. These items are categorized as below;

- Households final consumption
- Capital formation
- Government consumption
- Gross Domestic Product

In this study, adjusted real GDP per capita (PPP\$) in the Nghe An province was estimated comparing GDP per capita (US\$) in 1995 and the market price of 109 items in Vinh and Hanoi based on the adjusted real GDP per capita (PPP\$) used in the Human Development Report (UNDP, 1996).

Market prices were collected by Vietnamese counterpart/surveyor and the middle rate or average prices of goods were selected for adjusting same qualities as much as possible. For the estimation, a different weight is applied for each item as shown in Table P.3.2 considering the total consumption volume. Weighted average price rate between Hanoi and Vinh was preliminarily estimated to be 0.94.

Adjusted real GDP per capita (PPP\$) in Nghe An Province was estimated based on the following formula:

$$PPP_{na} = PPP_{vn} * (GDP_{vn} / GDP_{na}) / Cr$$

where PPP_{na} : Adjusted real GDP per capita in Nghe An Province (PPP\$)
 PPP_{vn} : Adjusted real GDP per capita in Viet Nam
(PPP\$ 1,040 : source Human Development Report 1996, UNDP)
 GDP_{vn} : GDP per capita in 1995 of Viet Nam
(US\$ 273 : source Study Team)
 GDP_{na} : GDP per capita in 1995 for Nghe An Province
(US\$ 207 : Master Plan Socio-Economic Development of

Cr : Nghe An Province)
 : Weighted average price rate (0.94)

Based on this formula, adjusted real GDP per capita in Nghe An Province was estimated to be PPP\$ 835.

P.3.2 Preliminary Computation of HDI for Nam Dan District

Using the data mentioned above, HDI for Nam Dan District under present conditions and future conditions (at 2010) in a without-proposed-projects situation was estimated based on the following assumptions.

Life expectancy

Present: 66 years

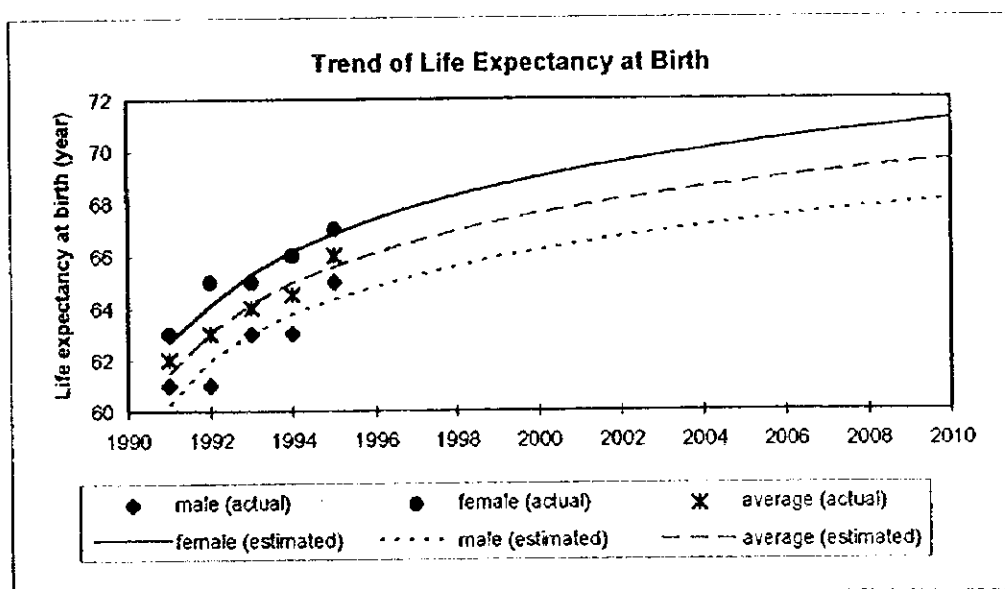
Future : Life expectancy in a without-projects situation for the year 2010 was estimated based on life expectancy data as shown below;

Life expectancy at birth (year)

	1991	1992	1993	1994	1995
Male	61	61	63	63	65
Female	63	65	65	66	67

Source: Department of Public Health, Nghe An Province

Using the trend for this data, average life expectancy under a without-projects situation for the year 2010 was estimated as 69.7 years (male : 68.2 years, female 71.2 years) as shown below;



Adult literacy

Present: 98 %

Future : Considering present conditions of enrollment ratio of primary school, secondary school and special classes for people over 17 years old, adult literacy for the year 2010 will be maintained at a level 98 % under the without-projects-situation.

Combined primary, secondary and tertiary enrollment ratio

Present: 64 %

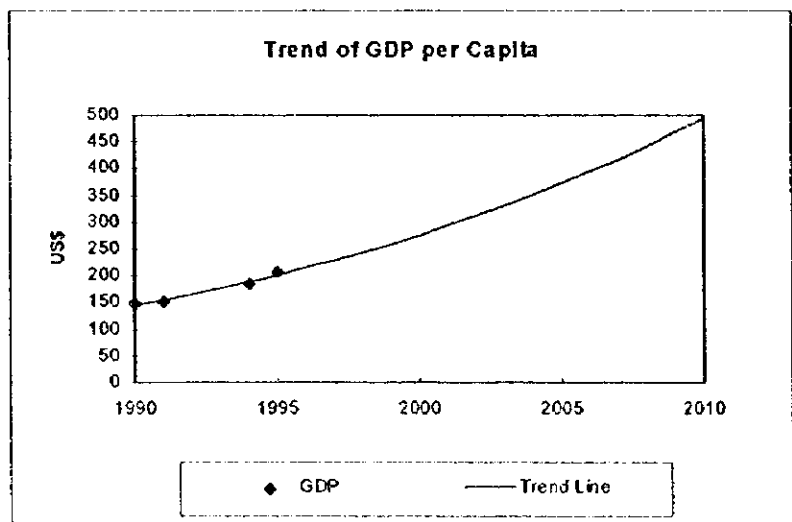
Future : Based on the present conditions, it can be considered the ratio of repetition will decrease in the future. It means that students that over 17 years old will also decrease. Thus, the combined enrollment ratio under the without-projects-situation was estimated to be 63 % (See Appendix H). Though this is one of the trends in developing countries, it is also necessary to study how to consider the improvement of education quality when applying HDI concept.

Adjusting real GDP per capita (PPPS) index

Concerning adjusted real GDP per capita (PPP\$), it was assumed that the difference of actual GDP per capita between Nghe An Province and Nam Dan District is less than 3 % in 1995; the same value of Nghe An Province can be applied for estimation of Nam Dan District.

Present: PPP\$ 835

Future : Adjusted real GDP per capita (PPP\$) for the year 2010 was estimated based on the trend of actual GDP (US\$) growth in current prices for 6 years (1990 - 1995) as shown below:



US\$ 494 of actual GDP per capita for the year 2010 under the without-projects-situation was estimated. The value of adjusted real GDP per capita for the year 2010, PPP\$ 1,993, was estimated as shown below:

$$1,993 = 835 * (494/207)$$

The above mentioned conditions for computation HDI are summarized below:

Year	Life expectancy (years)	Adult literacy ratio (%)	Combined enrollment ratio (%)	Real GDP per capita (PPP\$)
1995	66	98	64	835
2010	70	98	63	1,993

Applying these conditions, HDI for the years 1995 and 2010 under the without-projects-situation of Nam Dan District were calculated as shown below;

Year	Life expectancy index	Education attainment index	Adjusted real GDP per capita (PPP\$) index	HDI
1995	0.683	0.867	0.124	0.558
2010	0.750	0.863	0.319	0.644

Based on the conditions mentioned above, The HDI Value for the Nam Dan District in 1995 was estimated as 0.558 (all Viet Nam: 0.540). Due to the high sociological index related to education, the HDI value calculated for Nam Dan District is slightly higher than the national average.

Among the 3 items necessary to calculate HDI, average life expectancy and education achievement rate can be calculated without difficulties because necessary statistical data is relatively well prepared in Nam Dan District. However, it is impossible to collect necessary information by employing a normal method and calculate purchasing power parity (PPP\$) within the limited time period of this study. Because, there are more than 200 items necessary for the calculation and the most of the items are not general data of social statistics. In this study, PPP\$ is estimated from the trend of market prices related to gross domestic product per capita in the area and expenditure of farm household. However, accumulation of experiences in similar study and examination is necessary in order to justify the pre-condition and employed method for the calculation

P.4 Recommendation of Monitoring for Project Effect

For the formulation/implementation of an integrated agricultural development plan consisting of many sector projects, one of the important factors to take into consideration is to continuously monitor the project effects based on the changes of conditions in the project area.

In the Study, the present condition of the Study Area was evaluated applying the HDI method; by doing so, the basic material for the project evaluation in the future was obtained. By monitoring the results of the implementation of the project, it will be possible to have a feedback from the monitoring results to the project which will be useful for other similar projects in other regions. This is one of the objectives of the present Study concerning the formulation of a Model Rural Development Plan. Thus, it is strongly required to execute a continuous monitoring for the rural living conditions applying the HDI method.

The GDP in Viet Nam is doubled within the recent 2 years and a drastic change of economic conditions which is observed also in Nam Dan District has been under way, nationally. On the other hand, life expectancy in Nam Dan District increases by 1 year for

each year within the last 4 years. Also, literacy rate reaches to nearly 100% in the District. The combined enrollment ratio almost reaches its maximum rate under the present situation of school facilities. With the consideration of above-mentioned conditions, the frequency of monitoring is considered to be once in 1 to 2 years in order to view a HDI value representing the changes of conditions in agricultural society and economics.

If the method of monitoring requires complex and lengthy investigation, it becomes impossible to conduct monitoring continuously. So that, investigation for monitoring should be conducted simply and quickly maintaining necessary accuracy. There are no major difficulties on the data of average life expectancy and education achievement rate. Because, they are employed based on the official data provided by the Statistical Department. It will be difficult to calculate an actual GDP by employing traditional method. So that, it is recommended to employ a conventional method to calculate an actual GDP based on PPP\$ rate of Viet Nam announced by UNDP, GDP of national average and of Nam Dan District, and comparison of market prices in Vinh and Ha Noi on 20 major food items. The HDI value calculate by employing this conventional method is considered to be sufficient for the purpose of comparing changes in the society. The list of candidate of major food items to be employed in the study of Nam Dan District is prepared based on the results of this study as follow:

Rice	Fresh vegetables
Bread	Potatoes
Bakery products, biscuits, cakes, etc.	Manioc & other tubers
Noodles, macaroni, spaghetti	Tea
Beef and veal	Sugar
Pork	Chocolate, ice cream, confectionery, etc.
Poultry	Mineral water
Fish fresh/frozen	Soft drinks
Eggs & egg products	Beer
Fresh fruits	Cigarettes

PPP\$ 821 was calculated based on these 20 major items as shown in Table P.4.1 and this influence to HDI as 0.0007 point (equivalent 0.15 %).

With the consideration of extending the study into the similar integrated project in other area, the monitoring should be executed uniformly by an appropriate organization in the central government, namely MARD which supervise agriculture and rural development in the country.

P.5 Preliminary Study on Measuring Indirect Effects of Proposed Projects

P.5.1 General

There is some possibility to measure indirect effects (including synergistic effect) of proposed projects using HDI, if a suitable way is formed for converting the project effects into HDI indexes. Basically, as the comparison will be done between the with and without-projects situations, the indexes for the with-projects-situation will be calculated based on the estimation of socio-economic conditions after completion of the projects. To estimate the factors to consider the with-projects-situation, the factors applied for other areas with similar conditions will be used; but, when estimating some factors it will be

necessary to use several assumptions. Therefore, the results of HDI computation will not always explain the actual value for human development. However, it may be possible to compare the effects among the projects applying the same conditions.

P.5.2 Preliminary Study for the Converting Indexes

The results of the project effects are different based on sectors, project scale and project beneficiaries. A preliminary conversion methodology was studied as shown below:

(1) Agricultural improvement plan

1) Land Use Plan

Effects of land use plan will influence agricultural production. Thus, based on the estimated economic conditions under the with-projects-situation, the adjusted real GDP per capita (PPP\$) will be increased. However, as this phenomenon will be explained more clearly based on the combined effects of other improvement plans, the effects of the land use plan is negligible in this study.

2) Agricultural Development Plan

Effects of agricultural development projects will be measured based on the increased agricultural production value. Considering actual GDP structure, increased agricultural production value will be converted into increased adjusted real GDP per capita (PPP\$).

Improvement of agricultural productivity due to factors like mechanization will also be counted based on the estimation of other farmers' off-farm income using the surplus time from time served by increased productivity and this influence will be converted into increased adjusted real GDP per capita (PPP\$).

3) Irrigation and Drainage Improvement Plan

Effects of irrigation and drainage projects will also be measured based on the increasing of agricultural production value considering increasing of actual irrigation area, mitigation of flood damage, etc.

4) Marketing System and Agro-industry Improvement Plan

Marketing system improvements will influence farm gate prices and this influence will be converted into increased adjusted real GDP per capita (PPP\$).

Agro-industry improvements will directly influence agricultural production value increase.

5) Farmers' Organization and Supporting System Improvement

As farmers' organization and supporting system improvements are one of the important components for farmers' economic activities and smooth

implementation of other projects, these improvements will influence the projects scale and implementation schedule of every project. Considering the differences of the effect of other projects under the with and without of these improvements situations, this influence will be converted into increased adjusted real GDP per capita (PPP\$). This consideration will be applied to projects of other sectors as well as for agricultural sector projects.

(2) Health and Sanitation

The target of the projects will be converted into life expectancy based on the estimation of improvement conditions with projects. The improvement conditions of other similar project areas will be use as reference.

(3) Education

The target of education projects will be directly set on the combined enrollment ratio. However, improvement of farmers life standard, economical conditions, demand for labor, other social infrastructures, etc. should be considered for achievement of projects targets. Thus, the combined enrollment ratio will be changed based on the conditions of other sectors projects.

(4) Transportation and Communications

Improvement of transportation and communications is one of the important components for rural economic activities as well as improvement of living standards. Especially, this will directly influence the marketing system improvement and farmers' economic conditions. The projects targets of education and health and sanitation will be influenced by the conditions of this sector. Thus, the differences between the with and without-projects-situations of this sector will indirectly influence HDI factors through the effects on other sectors projects.

(5) Electrification

Improvement of electric conditions is also one of the important components for improvement of living standards in rural areas. This will influence the conditions of pumping irrigation system, agro-industry, education, health and sanitation, etc. The effects of the projects in this sector will be measured indirectly through the projects in other sectors. Especially, the projects targets of education and health and sanitation will be influenced by the conditions of this sector. Thus, the differences between the with and without-projects-situation of this sector will indirectly influence HDI factors through the effects on other sectors projects.

(6) Rural Water Supply

Improvement of rural water supply conditions is also one of the important components for improvement of living standards in rural areas. Especially, supplying safe and stable water will contribute to satisfy one important and basic human needs in the rural areas and this will influence the incidence and occurrence of water-related diseases. The effects of the projects in this sector will be measured indirectly through the

improvement of conditions of health and sanitation and converted into HDI factors. The projects targets of health and sanitation will also be influenced by conditions of this sector.

(7) Environmental Conservation

Environmental conservation is an important factor for a sustainable rural development and projects in this sector will influence the living conditions of the farmers. However, considering the proposed projects scale in this sector, the environmental effects will be expected to be quite small for HDI. Thus, the project effects in this sector will not be considered for HDI computation in this study.

P.5.3 Preliminary Computation for HDI with Projects

Based on the above mentioned idea, the HDI with some of the proposed projects for some sectors are calculated on a first-trial basis as shown in Table P.5.1. The results are summarized below:

Trial Computation of HDI with Project

Projects	Estimated Direct Effect	Increased Value of HDI
IR. Irrigation Improvement	2,300 ha of actual irrigated area is increased	0.013879
FD. Inundation Mitigation Plan	Inundation damage for 1,200 ha of cultivated area is mitigated	0.000534
AS2. Seed Supply Plan	Average 10 % of Rice Production will Increased	0.003722
AS4. Agricultural Mechanization Service Center	Average 15 % of Rice Production will Increased	0.000576
A11. Agro-processing Complex	Average 15 % of farm gate price will Increased	0.000432
A12. Market-oriented Forwarding Center	Average 20 % of Rice Production will Increased	0.000576

Combined Case	Increased Value of HDI	Simple Sum	Difference	Portion
IR + FD	0.014725	0.014412	0.000313	2.17%
IR + AS2	0.018012	0.017600	0.000412	2.34%
IR + AS4	0.014743	0.014455	0.000288	1.99%
IR + A11	0.014373	0.014311	0.000062	0.43%
IR + A12	0.014570	0.014455	0.000115	0.80%
IR + FD + AS2	0.019202	0.018134	0.001068	5.89%
IR + FD + AS4	0.015375	0.014989	0.000386	2.57%
IR + FD + A11	0.015279	0.014844	0.000434	2.93%
IR + FD + A12	0.015463	0.014988	0.000475	3.17%
IR + FD + AS2 + AS4	0.021240	0.018711	0.002529	13.52%
IR + FD + AS2 + A11	0.019792	0.018566	0.001226	6.61%
IR + FD + AS2 + A12	0.019989	0.018710	0.001279	6.84%
IR + FD + AS2 + AS4 + A11	0.021892	0.019143	0.002749	14.36%
IR + FD + AS2 + AS4 + A12	0.022109	0.019287	0.002822	14.63%
IR + FD + AS2 + AS4 + A11 + A12	0.022239	0.019719	0.002521	12.78%

As the above calculation is a first trial based on the rough estimations, it is recommended to carry out the further detailed analysis for this point in the future.

P.6 Tasks in the Future

(1) Feedback of Monitoring in Developing Area by HDI

It is extremely important to classify HDI in developing areas into two categories namely HDI affected by implementation of development projects and HDI affected by changes in the area through the time, for results of monitoring to be reflected on modifying project or planning another projects in other similar areas. In order to achieve this, analyzing data collected from wide range. There is a possibility that a change of HDI affected by the project can be separated by comparing a change of HDI in the project area with a change in the area without project. Accumulation of data and results of study are expected in the future.

(2) HDI Application for Steps of Planning Project

In planning integrated agricultural development including wide range of sectors such as society, economic and living conditions, clarifying the results of developing plan integrally not limited within an individual sector is extremely important. Employing a new access of evaluation which can express changes by implementing projects in rural areas can support the most effective planning. HDI considered at this stage itself is insufficient to evaluate the absolute quantity of project effects, however, it is considered to be a great help to compare results in a planning stage.

In this Study, an integrated effect resulted by major components of the Model Project is obtained by employing the above-mentioned simplified method. As a result, the increase of HDI in the area is obtained as a value of 0.022. Some of the components in the rural development plan are difficult to apply reasonably and simply in an evaluation of HDI after the completion of a project. However, further study in the future is expected together with realizing simplified calculation method and improved evaluation accuracy.

APPENDIX P : TABLES



Table P.2.1 Proposed Factors and Categories for Human Development Indicators

Factors	Unit	Human Development Situations				Social Development Situations				Agricultural Development						
		Life	Level of Education	Farm Household Income	Property	General	Balance of Natural Resources	Health, Sanitation and Welfare	Gender Issues	Employment Condition	Poverty Condition	Development Ratio of Social Infrastructures	Agricultural Productivity	Farmers' Organization	Supporting System	Marketing/Distribution System
Population	Population	person														
	Population Growth Ratio	%	○	○												
	Population Density	person/km ²														
	Labour Force	% of total pop														
	Labour Force of Women	% of total pop.														
	Labour Force in Agriculture	%			○											
	Labour Force in Industry	%														
	Labour Force of Services	%														
Absolute Rate of Poverty Population	%															
Land Use	Area of Agricultural Land	% of total area														
	Area of Forestry	% of total area														
	Irrigated Area	% of agricultural land														
	Average Possession of Agricultural Land	ha/household														
	Built-up Area	% of total area														
Education	Male and Female Net Primary Enrollment Ratio	%														
	Male and Female Net Secondary Enrollment Ratio	%														
	Pupil - Teacher Ratio in Primary	pupil/teacher														
	Pupil - Teacher Ratio in Secondary	pupil/teacher														
	Male and Female Average Enrollment Year	year														
	Adult Literacy Rate	%														
Health, Sanitation and Welfare	Life Expectancy at Birth	years	○													
	Population with Access to Health Services	%	○	○												
	Population with Access to Safe Water	%	○	○												
	Population with Access to Sanitation	%	○	○												
	Daily Calorie Supply per Capita	% of requirement	○	○												
	Population per Doctor	person	○	○												
	Population per Nurse	person	○	○												
	Infant Mortality Rate	person/1,000 infants	○	○												
	Under-five Mortality Rate	person/1,000 under-five	○	○												
	Maternal Mortality Rate	person/100,000 infants	○	○												
	Underweight Children Under Age Five	%	○	○												
Communication	Daily Newspapers	/100 persons														
	Telephone	/100 persons														
	Radio	/100 persons														
	Television	/100 persons														
Farming System and Others	Cultivated Area by Crops	ha/household														
	Agricultural Production by Crops	ton/farmer														
	Fertilizer and Pesticide Input	ton/farmer														
	Ratio of Irrigated Area	%														
	Density of Road Network (Main)	km/ha														
	Density of Road Network (Farm Road)	km/ha														
	Condition of Agricultural Mechanization	machineries/ha														
	Farm Income	PPP\$/household														
	Net GDP per Capita	PPP\$														
	Technical Extension Worker	persons/1000ha														
	Constituent of Farmers' Organization	persons/organization														
	Household Property	PPP\$/household														
	Ratio of Electrification	%														

Remarks: Factors will be adjusted in consideration of collected data and information.

Table P.3.1 Required Factors For Computing PPPs (1/2)

No.	Item	No.	Item	No.	Item
1	Final consumption of the household	46	Sugar, sweets, spices	91	House furnishings, operations
2	Food beverages & tobacco	47	Sugar	92	Furniture and appliances
3	Food	48	Other sweets and spices	93	Furniture, etc.
4	Bread and cereals	49	Jam, syrup, honey & the like	94	Furniture, fixtures
5	Rice	50	Chocolate, ice cream, confectionery, etc.	95	Floor coverings
6	Flour, other cereals	51	Condiments, spices, salt, etc.	96	Repairs to furniture, fixture, floor coverings
7	Bread	52	Beverages	97	Household textiles
8	Bakery products, biscuits, cakes, etc.	53	Non-alcoholic beverages	98	Household textiles, etc.
9	Noodles, macaroni, spaghetti	54	Mineral water	99	Repairs to textiles & other furnishings
10	Cereal preparatory	55	Soft drinks	100	Major household appliances
11	Meat	56	Alcoholic beverages	101	Refrigerator, freezer, & similar equipment
12	Beef and veal	57	Liquors & spirits	102	Washing & cleaning appliances
13	Pork	58	Wine, cider	103	Cooking, washing, heating
14	Lamb, goat & mutton	59	Beer	104	Cooking & other food warming appliances
15	Poultry	60	Other alcoholic beverages	105	Sewing machines, electric fans, toaster, etc.
16	Dried or processed meat, etc.	61	Tobacco	106	Room climate control equipment
17	Fish	62	Cigarettes	107	Repairs to major household appliances
18	Fish fresh/frozen	63	Cigars, cigarillos	108	Household goods and services
19	Processed fish/seafood, canned, etc.	64	Other tobacco products & stimulants	109	Household goods
20	Smoked or preserved fish & seafoods	65	Clothing and footwear	110	Glassware, tableware, utensils
21	Other sea foods	66	Clothing	111	Glassware & tableware
22	Milk, cheese & eggs	67	Clothing materials	112	Cutlery and flatware
23	Milk fresh	68	Men's clothing	113	Kitchen & domestic utensils without motor
24	Milk preserved	69	Women's clothing	114	Repair to glassware, tableware & utensils
25	Other milk products	70	Children's clothing	115	Garden appliances
26	Cheese	71	Clothing accessories	116	Light-bulb, cable, switches, batteries, etc.
27	Eggs & egg products	72	Haberdashery, millinery	117	Household operation
28	Oils and fats	73	Clothing, rental and repair	118	Non-durable household goods
29	Butter	74	Footwear	119	Paper products for household
30	Margarine, edible oils & lard	75	Footwear, men's	120	Cleaning maintenance supplies (soap, etc.)
31	Fruits, vegetables & tubers	76	Footwear, women's	121	Laundry, dry cleaning
32	Fruits	77	Footwear, children's, infants'	122	Other non-durable household products
33	Fresh fruits	78	Repair to footwear	123	Domestic services
34	Dried, frozen, preserved juices, etc.	79	Gross rent, fuel & power	124	Household services
35	Vegetables	80	Gross rent	125	Total medical care & services
36	Fresh vegetables	81	Rents	126	Private medical care & services
37	Dried, frozen, preserved vegetables	82	Rents of tenants	127	Medical & pharmaceutical products
38	Tubers, including potatoes	83	Imputed rents of owner-occupiers	128	Pharmaceutical products
39	Potatoes	84	Repair & maintenance of houses	129	Drugs & medical preparation
40	Manioc & other tubers	85	Sanitary services & water charges	130	Medical supplies
41	Other foods	86	Fuel and power	131	Therapeutic appliances & equipment
42	Coffee, tea, cocoa	87	Electricity		
43	Coffee	88	Gas		
44	Tea	89	Liquid fuels		
45	Cocoa	90	Other fuels		

Table P.3.1 Required Factors For Computing PPS (2/2)

No.	Item	No.	Item	No.	Item
132	Health services	177	Book, newspaper, magazines, etc.	224	Transportation equipment
133	Services of physicians, nurses, etc.	178	Stationery for educational purpose	225	Motor vehicles, engines
134	Services of physicians/gen. practitioners	179	Total education expenditures	226	Railway vehicles
135	Services of specialists	180	Private education expenditures	227	Passenger motor cars & other motor vehicles
136	Services of dentists	181	Public education expenditures	228	Passenger automobiles
137	Services of nurses	182	Miscellaneous goods & services	229	Trucks, buses, trailers
138	Other medical services	183	Personal care	230	Aircraft
139	Hospital care and the like	184	Barber and beauty shops	231	Ships, boats
140	Medical personnel	185	Toilet articles (all kinds)	232	Other transport equipment
141	Other than medical personnel	186	Jewelry, watch, etc., personal effects	233	Other
142	Public medical care (Current consumption of govt.)	187	Other personal care goods	234	Furniture, fixtures
143	Transport and communication	188	Stationery for non-educational purposes	235	Other producer durable goods
144	Personal transportation equipment	189	Other	236	Construction
145	Passenger cars	190	Restaurants, cafes & hotels	237	Residential buildings
146	Other personal transport	191	Workers' cafeterias	238	Family dwellings
147	Operation costs of transportation equipment	192	Restaurants, cafes, etc.	239	Multifamily dwellings
148	Tires, tubes, accessories	193	Hotels, lodgings	240	Non-residential buildings
149	Repair charges for personal transport	194	Finance, other services	241	Agricultural buildings
150	Fuel and lubricant (gasoline, grease, etc.)	195	Financial services (bank, insurance, etc.)	242	Industrial buildings
151	Other expenses (parking, tolls, etc.)	196	Services N.E.C.	243	Building for market services
152	Purchased transport	197	Welfare services	244	Building for non-market services
153	Local transport	198	Net expenditure of residents abroad	245	Other constructions
154	Local taxis	199	Capital formation	246	Transport routes, roads, bridges, tunnels
155	Local buses, trams & the like	200	Domestic capital formation	247	Other transport utility
156	Long distance transport	201	Gross fixed capital formation	248	Other civil engineering
157	Railway transport	202	Producer durable	249	Other products
158	Road transport	203	Machinery & non-electrical equipment	250	Changes in stocks
159	Air transport	204	Products of processing	251	Net foreign balance
160	Other long distance transport	205	Engine, turbines	252	Government consumption, total
161	Communication	206	Agricultural machinery	253	Compensation of employees
162	Postal communication	207	Office machinery & equipment	254	Commodities, goods & services
163	Telephone, telegraph	208	Metal & woodworking machinery	255	Gross domestic products
164	Recreation, entertainment, education & others	209	Tool, finished metal		
165	Equipment and services	210	Construction, mining & oil field equipment		
166	Equipment for recreation	211	Special ind. machinery, paper, printing, etc.		
167	Radio, television, phonographs	212	Machinery for food, chemical, etc.		
168	Musical instruments, boats, etc.	213	Textile and leather working machinery		
169	Camera, VCR, & other optical equipment	214	General industrial machinery		
170	Semi and non-durable goods	215	Services industrial machinery		
171	Repair to equipment & accessories	216	Other machinery equipment		
172	Services for recreations	217	Precision, optical instruments		
173	Public entertainment	218	Electrical machinery & appliances		
174	Cinema, theater, sport ground, etc.	219	Electrical equipment including lights		
175	TV & radio license, hire of equipment	220	Electrical generation & transmission equip.		
176	Others: religious, recreational & cultural	221	Radio, TV & other communication equip.		
		222	Other electrical equipment		
		223	Telecommunication & measuring instruments		

Table P.3.2 Comparison of Market Price between Hanoi and Vinh (1/3)

No.	Item	Unit	Price at Hanoi	Price at Vinh	Price Ratio	Consumption Weight
1	Final consumption of the household					
2	Food beverages & tobacco					
3	Food					
4	Bread and cereals					
5	Rice	kg	5,767	3,500	0.61	10.00
7	Bread	kg	15,000	10,000	0.67	0.50
8	Bakery products, biscuits, cakes, etc.	kg	8,000	20,000	2.50	4.00
9	Noodles, macaroni, spaghetti	kg	8,000	12,000	1.50	10.00
11	Meat					
12	Beef and veal	t	25,333	27,000	1.07	3.00
13	Pork	t	20,667	18,000	0.87	3.00
15	Poultry	t	24,333	25,000	1.03	3.00
17	Fish					
18	Fish fresh/frozen	t	18,667	15,000	0.80	3.00
22	Milk, cheese & eggs					
23	Milk fresh	lit	8,000	6,000	0.75	0.20
27	Eggs & egg products	pcs	1,300	1,000	0.77	2.00
28	Oils and fats					
30	Margarine, edible oils & lard	kg	66,833	17,000	0.25	1.00
31	Fruits, vegetables & tubers					
32	Fruits					
33	Fresh fruits	kg	14,000	15,000	1.07	6.00
35	Vegetables					
36	Fresh vegetables	kg	7,333	3,000	0.41	3.00
38	Tubers, including potatoes					
39	Potatoes	kg	6,667	4,000	0.60	3.00
40	Manioc & other tubers	kg	3,000	1,000	0.33	3.00
41	Other foods					
42	Coffee, tea, cocoa					
43	Coffee	kg	73,333	15,000	0.20	1.00
44	Tea	kg	56,667	30,000	0.53	6.00
46	Sugar, sweets, spices					
47	Sugar	kg	5,900	6,000	1.02	6.00
48	Other sweets and spices					
50	Chocolate, ice cream, confectionery, etc.	kg	29,000	10,000	0.34	1.00
52	Beverages					
53	Non-alcoholic beverages					
54	Mineral water	lit	6,167	4,000	0.65	0.50
55	Soft drinks	lit	4,233	4,000	0.94	0.40
56	Alcoholic beverages					
58	Wine, cider	lit	10,667	1,000	0.09	0.40
59	Beer	lit	19,300	16,000	0.83	3.00
61	Tobacco					
62	Cigarettes	box	6,833	7,000	1.02	2.00
65	Clothing and footwear					
66	Clothing					
67	Clothing materials	m	45,000	30,000	0.67	1.00
68	Men's clothing	set	136,667	150,000	1.10	1.00
69	Women's clothing	set	183,333	100,000	0.55	1.00
70	Children's clothing	set	60,000	70,000	1.17	1.00
74	Footwear					
75	Footwear, men's	set	122,333	150,000	1.23	1.00
76	Footwear, women's	set	65,000	150,000	2.31	1.00
77	Footwear, children's, infants'	set	12,667	15,000	1.18	1.00
79	Gross rent, fuel & power					
80	Gross rent					
81	Rents					
83	Imputed rents of owner-occupiers	%	40	40	1.00	0.50
85	Sanitary services & water charges	m ³	4,000	1,000	0.25	0.50
86	Fuel and power					
87	Electricity	kw	2,583	5,000	1.94	2.00
89	Liquid fuels	ton	4,233	4,000	0.94	0.50
90	Other fuels	kg	600	500	0.83	0.50

Table P.3.2 Comparison of Market Price between Hanoi and Vinh (2/3)

No.	Item	Unit	Price at Hanoi	Price at Vinh	Price Ratio	Consumption Weight
91	House furnishings, operations					
92	Furniture and appliances					
93	Furniture, etc.					
94	Furniture, fixtures	set	15,000	10,000	0.67	1.00
95	Floor coverings	m ²	50,000	30,000	0.60	0.50
96	Repairs to furniture, fixture, floor coverings	ten	10,000	5,000	0.50	0.30
97	Household textiles					
99	Repairs to textiles & other furnishings	ton	7,000	5,000	0.71	0.60
100	Major household appliances					
102	Washing & cleaning appliances	pcs	3,000,000	7,000,000	2.33	0.10
104	Cooking & other food warming appliances	set	1,050,000	1,000,000	0.95	0.50
105	Sewing machines, electric fans, toaster, etc.	set	746,667	1,000,000	1.34	0.40
108	Household goods and services					
109	Household goods					
110	Glassware, tableware, utensils					
111	Glassware & tableware	set	60,000	50,000	0.83	0.50
112	Cutlery and flatware	pcs	5,000	4,000	0.80	0.30
113	Kitchen & domestic utensils without motor	pcs	4,000	3,000	0.75	0.30
117	Household operation					
118	Non-durable household goods					
120	Cleaning maintenance supplies (soap, etc.)	kg	6,000	5,000	0.83	1.00
121	Laundry, dry cleaning	kg	15,000	10,000	0.67	1.00
125	Total medical care & services					
126	Private medical care & services	hr	100,000	50,000	0.50	0.30
127	Medical & pharmaceutical products					
128	Pharmaceutical products	kg/kind	50,000	20,000	0.40	0.30
132	Health services					
133	Services of physicians, nurses, etc.	hr	60,000	50,000	0.83	0.40
134	Services of physicians/gen. practitioners	hr	90,000	70,000	0.78	0.40
135	Services of specialists	hr	100,000	60,000	0.60	0.40
136	Services of dentists	hr	100,000	50,000	0.50	0.40
137	Services of nurses	hr	50,000	20,000	0.40	0.40
143	Transport and communication					
144	Personal transportation equipment					
145	Passenger cars	km	4,500	4,000	0.89	0.20
147	Operation costs of transportation equipment					
150	Fuel and lubricant (gasoline, grease, etc.)	lit	4,000	4,500	1.13	0.80
152	Purchased transport					
153	Local transport					
154	Local taxis	km	14,000	10,000	0.71	0.10
161	Communication					
162	Postal communication	pcs	2,000	2,000	1.00	0.10
163	Telephone, telegraph	pcs	2,000	2,000	1.00	0.10
164	Recreation, entertainment, education & others					
165	Equipment and services					
166	Equipment for recreation					
167	Radio, television, phonographs	set	3,533,333	1,500,000	0.42	0.50
172	Services for recreations					
173	Public entertainment					
174	Cinema, theater, sport ground, etc.	time	20,000	6,000	0.30	0.50
177	Book, newspaper, magazines, etc.	I. S.	4,000	3,000	0.75	0.50
178	Stationery for educational purpose	set	2,000	2,500	1.25	0.50
179	Total education expenditures	month	200,000	80,000	0.40	0.50
182	Miscellaneous goods & services					
183	Personal care					
185	Toilet articles (all kinds)	set	700	500	0.71	0.50
186	Jewelry, watch, etc., personal effects	set	300,000	500,000	1.67	0.30
189	Other					
190	Restaurants, cafes & hotels					
191	Workers' cafeterias	pcs	4,000	2,000	0.50	0.10
192	Restaurants, cafes, etc.	kg	8,000	6,000	0.75	0.10
193	Hotels, lodgings	day	15,000	10,000	0.67	0.10
194	Finance, other services					

Table P.3.2 Comparison of Market Price between Hanoi and Vinh (3/3)

No.	Item	Unit	Price at Hanoi	Price at Vinh	Price Ratio	Consumption Weight
199	Capital formation					
200	Domestic capital formation					
202	Producer durable					
203	Machinery & non-electrical equipment					
204	Products of processing	hr/day	20	8	0.40	
205	Engine, turbines	hr/day	10	8	0.80	
206	Agricultural machinery	hr/day	24	8	0.33	
207	Office machinery & equipment	hr/day	10	8	0.80	
208	Metal & woodworking machinery	hr/day	15	8	0.53	
209	Tool, finished metal	hr/day	20	8	0.40	
210	Construction, mining & oil field equipment	hr/day	40	24	0.60	
211	Special Ind. machinery, paper, printing, etc.	hr/day	20	16	0.80	
212	Machinery for food, chemical, etc.	hr/day	20	16	0.80	
213	Textile and leather working machinery	hr/day	18	16	0.89	
214	General industrial machinery	hr/day	15	8	0.53	
215	Services industrial machinery	hr/day	15	8	0.53	
216	Other machinery equipment	hr/day	10	8	0.80	
217	Precision, optical instruments	hr/day	20	12	0.60	
218	Electrical machinery & appliances	hr/day	30	16	0.53	
219	Electrical equipment including lights	hr/day	20	12	0.60	
220	Electrical generation & transmission equip.	hr/day	35	24	0.69	
221	Radio, TV & other communication equip.	hr/day	20	12	0.60	
222	Other electrical equipment	hr/day	20	12	0.60	
223	Telecommunication & measuring instruments	hr/day	40	24	0.60	
224	Transportation equipment	hr/day				
225	Motor vehicles, engines	hr/day	15	8	0.53	
226	Railway vehicles	hr/day	40	24	0.60	
227	Passenger motor cars & other motor vehicles	hr/day	30	12	0.40	
228	Passenger automobile s	hr/day	30	12	0.40	
229	Trucks, buses, trailers	hr/day	20	12	0.60	
230	Aircraft	hr/day	20	10	0.50	
231	Ships, boats	hr/day	20	14	0.70	
232	Other transport equipment	hr/day	20	12	0.60	
233	Other	hr/day	20	10	0.50	
234	Furniture, fixtures	hr/day	30	20	0.67	
235	Other producer durable goods	hr/day	20	12	0.60	
236	Construction					
237	Residential buildings					
238	Family dwellings	day	96	80	0.83	
239	Multifamily dwellings	day	222	185	0.83	
240	Non-residential buildings	day	90	75	0.83	
241	Agricultural buildings	day	90	75	0.83	
242	Industrial buildings	day	150	125	0.83	
243	Building for market services	day	192	160	0.83	
244	Building for non-market services	day	84	70	0.83	
245	Other constructions	day	120	100	0.83	
	Total					100.00
	Weighted average price rate				0.94	

		Hanoi	Vinh	Remark
	Gross domestic products	USD/capita 273	207	Current price in 1995
	Estimated adjusting real GDP per capita	PPPS 1,040	835	1,040/273*207/0.94

Table P.4.1 Comparison of Market Price on 20 major Items

No.	Item	Unit	Price at Hanoi	Price at Vinh	Price Ratio	Consumption Weight
5	Rice	kg	5,767	3,500	0.61	10.00
7	Bread	kg	15,000	10,000	0.67	0.50
8	Bakery products, biscuits, cakes, etc.	kg	8,000	20,000	2.50	4.00
9	Noodles, macaroni, spaghetti	kg	8,000	12,000	1.50	10.00
12	Beef and veal	t	25,333	27,000	1.07	3.00
13	Pork	t	20,667	18,000	0.87	3.00
15	Poultry	t	24,333	25,000	1.03	3.00
18	Fish fresh/frozen	t	18,667	15,000	0.80	3.00
27	Eggs & egg products	pcs	1,300	1,000	0.77	2.00
33	Fresh fruits	kg	14,000	15,000	1.07	6.00
36	Fresh vegetables	kg	7,333	3,000	0.41	3.00
39	Potatoes	kg	6,667	4,000	0.60	3.00
40	Manioc & other tubers	kg	3,000	1,000	0.33	3.00
44	Tea	kg	56,667	30,000	0.53	6.00
47	Sugar	kg	5,900	6,000	1.02	6.00
50	Chocolate, ice cream, confectionery, etc.	kg	29,000	10,000	0.34	1.00
54	Mineral water	lit	6,167	4,000	0.65	0.50
55	Soft drinks	lit	4,233	4,000	0.94	0.40
59	Beer	lit	19,300	16,000	0.83	3.00
62	Cigarettes	box	6,833	7,000	1.02	2.00
	Total					72.40
	Weighted average price rate				0.96	

		Hanoi	Vinh	Remark
Gross domestic products	USD/capita	273	207	Current price in 1995
Estimated adjusting real GDP per capita	PPP\$	1,040	821	$1,040/273 * 207/0.96$

Table P.5.1 Computation of HDI with Project Situation (1/18)

IR. Irrigation Improvement 2,300 ha of actual irrigated area is increased		FD. Inundation Mitigation Plan Inundation damage for 1,200 ha of cultivated area is mitigated	
Estimated direct effect			
Conditions			
without Irrigation area at present	2,000	ha	1,000
Increased sowing area Rice	1,000	ha	200
Increased sowing area Other Crop	1,500	ha	
	without	with	
Yield of Rice Production	2.50	4.50	2.00
Yield of Other Crop	3.00	4.00	2.50
			3.00
			0.50
			0.50
Estimated increase of productions			
Rice Production	8,500	t	500
Other Crop	8,000	t	100
Estimated Increase of Production Value			
Conditions			
Farm gate Price			3,000
Rice Production		1000 VND/ha	1000 VND/ha
Other Crop		1000 VND/ha	1000 VND/ha
Estimated Increased Production Value			1,750,000
Estimated increase of adjusting real GDP per capita			
Conditions			
Present GDP per Capita	207	US\$/capita	207
Present GDP per Capita	2,277,000	VND/capita	2,277,000
Population in 2010	157,957	person	157,957
Total GDP	359,668,089	1000 VND	359,668,089
Portion of increase at present	12.65	%	0.49
Future real GDP without project	1,955	PPPS	1,955
Future real GDP with project	2,202	PPPS	1,965
Estimated real GDP per capita with project	247	PPPS	10
Estimated increase of real GDP per capita index			
Conditions			
Maximum adjusted real GDP per capita	6,040	PPPS	6,040
Minimum adjusted real GDP per capita	100	PPPS	100
Adjusted real GDP per capita index without project	0.31228956		0.31228956
Adjusted real GDP per capita index with project	0.35392564		0.31389095
Estimated increase of index	0.04163608		0.00160139
Estimated increase of HDI	0.01387869		0.0005338

Table P.5.1 Computation of HDI with Project Situation (2/18)

AS2. Seed Supply Plan		AS4. Agricultural Mechanization Service Center	
Estimated direct effect		Average 15 % of Rice Production will Increased	
Conditions			
Rice sowing area at present in the projected area	13,557 ha	Rice sowing area at present in the projected area	1,400 ha
Average Yield of Rice Production	without 3.00 with 3.30 t/ha	Average Yield of Rice Production	without 3.00 with 3.45 t/ha
Estimated increase of productions Rice Production	4,067 t	Estimated increase of productions Rice Production	650 t
Estimated Increase of Production Value		Estimated Increase of Production Value	
Conditions		Conditions	
Farm gate Price	3,000 VND/t	Farm gate Price	3,000 VND/t
Rice Production	12,201,300 VND	Rice Production	2,500 VND/t
Other Crop		Other Crop	1,890,000 VND
Estimated Increased Production Value		Estimated increased Production Value	
Estimated increase of adjusting real GDP per capita		Estimated increase of adjusting real GDP per capita	
Conditions		Conditions	
Present GDP per Capita	207 US\$/capita	Present GDP per Capita	207 US\$/capita
Present GDP per Capita	2,277,000 VND/capita	Present GDP per Capita	2,277,000 VND/capita
Population in 2010	157,957 person	Population in 2010	157,957 person
Total GDP	359,668,089 VND	Total GDP	359,668,089 VND
Portion of increase at present	3.39 %	Portion of increase at present	0.53 %
Future real GDP without project	1,955 PPP\$	Future real GDP without project	1,955 PPP\$
Future real GDP with project	2,021 PPP\$	Future real GDP with project	1,965 PPP\$
Estimated real GDP per capita with project	66 PPP\$	Estimated real GDP per capita with project	10 PPP\$
Estimated increase of real GDP per capita index		Estimated increase of real GDP per capita index	
Conditions		Conditions	
Maximum adjusted real GDP per capita	6,040 PPP\$	Maximum adjusted real GDP per capita	6,040 PPP\$
Minimum adjusted real GDP per capita	100 PPP\$	Minimum adjusted real GDP per capita	100 PPP\$
Adjusted real GDP per capita index without project	0.31228956	Adjusted real GDP per capita index without project	0.31228956
Adjusted real GDP per capita index with project	0.32545471	Adjusted real GDP per capita index with project	0.31401906
Estimated increase of index	0.01116515	Estimated increase of index	0.0017295
Estimated increase of HDI	0.00372172	Estimated increase of HDI	0.0005765

Table P.5.1 Computation of HDI with Project Situation (3/18)

A11. Agro-processing Complex		A12. Market-oriented Forwarding Center	
Estimated direct effect		Average 15 % of farm gate price will increase	
Conditions			
Projected area (rice)	600	ha	ha
Projected area (other crop)	400	ha	ha
Yield of Rice Production			
Yield of Other Crop	3.30	t/ha	t/ha
Yield of Other Crop	3.50	t/ha	t/ha
Productions			
Rice Production	1,980	t	t
Other Crop	1,400	t	t
Estimated Increase of Production Value			
Conditions			
Increased Farm gate Price	450	1000 VND/t	1000 VND/t
Rice Production	375	1000 VND/h	1000 VND/h
Other Crop			
Estimated Increased Production Value	1,416,000	1000 VND	1000 VND
Estimated increase of adjusting real GDP per capita			
Conditions			
Present GDP per Capita	207	US\$/capita	US\$/capita
Present GDP per Capita	2,277,000	VND/capita	VND/capita
Population in 2010	157,957	person	person
Total GDP	359,668,089	1000 VND	1000 VND
Portion of increase at present	0.39	%	%
Future real GDP without project	1,955	PPPS	PPPS
Future real GDP with project	1,963	PPPS	PPPS
Estimated real GDP per capita with project	8	PPPS	PPPS
Estimated increase of real GDP per capita index			
Conditions			
Maximum adjusted real GDP per capita	6,040	PPPS	PPPS
Minimum adjusted real GDP per capita	100	PPPS	PPPS
Adjusted real GDP per capita index without project	0.31228956		
Adjusted real GDP per capita index with project	0.31358531		
Estimated increase of index	0.00129575		
Estimated increase of HDI	0.00043192		
Estimated direct effect			
Average 20 % of Rice Production will increase			
Conditions			
Projected area (rice)	600	ha	ha
Projected area (other crop)	400	ha	ha
Yield of Rice Production			
Yield of Other Crop	3.30	t/ha	t/ha
Yield of Other Crop	3.50	t/ha	t/ha
Productions			
Rice Production	1,980	t	t
Other Crop	1,400	t	t
Estimated Increase of Production Value			
Conditions			
Increased Farm gate Price	600	1000 VND/t	1000 VND/t
Rice Production	500	1000 VND/c	1000 VND/c
Other Crop			
Estimated Increased Production Value	1,888,000	1000 VND	1000 VND
Estimated increase of adjusting real GDP per capita			
Conditions			
Present GDP per Capita	207	US\$/capita	US\$/capita
Present GDP per Capita	2,277,000	VND/capita	VND/capita
Population in 2010	157,957	person	person
Total GDP	359,668,089	1000 VND	1000 VND
Portion of increase at present	0.52	%	%
Future real GDP without project	1,955	PPPS	PPPS
Future real GDP with project	1,965	PPPS	PPPS
Estimated real GDP per capita with project	10	PPPS	PPPS
Estimated increase of real GDP per capita index			
Conditions			
Maximum adjusted real GDP per capita	6,040	PPPS	PPPS
Minimum adjusted real GDP per capita	100	PPPS	PPPS
Adjusted real GDP per capita index without project	0.31228956		
Adjusted real GDP per capita index with project	0.31401723		
Estimated increase of index	0.00172767		
Estimated increase of HDI	0.00057589		

Table P.5.1 Computation of HDI with Project (4/18)

IR + FD		2,300 ha of actual irrigated area is increased	
Estimated direct effect		Inundation damage for 1,200 ha of cultivated area is mitigated	
Conditions of Ir only			
without Irrigation area at present		1,200	ha
Increased sowing area Rice		600	ha
Increased sowing area Other Crop		1,000	ha
Yield of Rice Production	without	2.50	t/ha
Yield of Other Crop	with	4.50	t/ha
		4.00	t/ha
Estimated increase of productions			
Rice Production		5,100	t
Other Crop		5,200	t
Conditions of FD only			
Present Cultivated area Rice		300	ha
Present Cultivated area Other Crop		100	ha
Yield of Rice Production	without	2.00	t/ha
Yield of Other Crop	with	2.50	t/ha
		3.00	t/ha
Estimated increase of productions			
Rice Production		150	t
Other Crop		50	t
Conditions of Ir + FD			
without Irrigation area at present		800	ha
Increased sowing area Rice		400	ha
Increased sowing area Other Crop		500	ha
Yield of Rice Production	without	2.00	t/ha
Yield of Other Crop	with	4.50	t/ha
		4.00	t/ha
Estimated increase of productions			
Rice Production		3,800	t
Other Crop		3,200	t
Total Increase of Production			
Rice Production		9,050	t
Other Crop		8,450	t
Estimated Increase of Production Value			
Conditions			
Farm gate Price		3,000	1000 VND/t
Rice Production		2,500	1000 VND/t
Other Crop		48,275,000	1000 VND
Estimated Increased Production Value			

Estimated increase of adjusting real GDP per capita		207 US\$/capita	
Conditions		2,277,000 VND/capita	
Present GDP per Capita		157,957	person
Population in 2010		359,668,089	1000 VND
Total GDP		13,42	%
Portion of increase at present		1,955	PPPS
Future real GDP without project		2,217	PPPS
Future real GDP with project		262	PPPS
Estimated increase of real GDP per capita with project			
Estimated increase of real GDP per capita index			
Conditions			
Maximum adjusted real GDP per capita		6,040	PPPS
Minimum adjusted real GDP per capita		100	PPPS
Adjusted real GDP per capita index without project		0.31228956	
Adjusted real GDP per capita index with project		0.35646498	
Estimated increase of index			
Estimated increase of HDI			
0.04417542			
0.01472514			

Table P.5.1 Computation of HDI with Project (S/18)

IR + AS2		2,300 ha of actual irrigated area is increased		Average 10 % of Rice Production will increased	
Estimated direct effect					
Conditions for Ir +AS2					
without Irrigation area at present				2,000	ha
Increased sowing area Rice				1,000	ha
Increased sowing area Other Crop				1,500	ha
Yield of Rice Production	without	with		2.45	t/ha
Yield of Other Crop	3.00	4.00		1.00	t/ha
Estimated increase of productions					
Rice Production				9,850	t
Other Crop				8,000	t
Conditions AS2 only					
Rice sowing area at present				10,557	ha
Yield of Rice Production	without	with		0.30	t/ha
	3.00	3.50			
Estimated increase of productions					
Rice Production				3,167	t
Total Increase of Production					
Rice Production				13,017	t
Other Crop				8,000	t
Estimated Increase of Production Value					
Conditions					
Farm gate Price				3,000	1000 VND/t
Rice Production				2,500	1000 VND/t
Other Crop				59,051,300	1000 VND.
Estimated Increased Production Value					
Estimated increase of adjusting real GDP per capita					
Conditions					
Present GDP per Capita				207	US\$/capita
Population in 2010				2,277,000	VND/capita
Total GDP				157,957	person
Portion of increase at present				559,668,089	1000 VND
Future real GDP without project				16.42	%
Future real GDP with project				1.955	PPPS
Estimated real GDP per capita with project				2.276	PPPS
Estimated increase of real GDP per capita index					
Conditions					
Maximum adjusted real GDP per capita				6,040	PPPS
Minimum adjusted real GDP per capita				100	PPPS
Adjusted real GDP per capita index without project				0.31228956	
Adjusted real GDP per capita index with project				0.36632614	
Estimated increase of index				0.05403658	
Estimated increase of HDI					
				0.01801219	

Table P.5.1 Computation of HDI with Project (6/18)

IR + AS4		2,300 ha of actual irrigated area is increased	
Estimated direct effect		Average 15 % of Rice Production will increase for 1,400 ha	
Conditions for Ir +As4			
without Irrigation area at present		800	ha
Increased sowing area Rice		600	ha
Increased sowing area Other Crop		500	ha
Yield of Rice Production	without	2.50	t/ha
Yield of Other Crop	with	4.00	t/ha
Estimated increase of productions			
Rice Production		5,245	t
Other Crop		2,800	t
Conditions for Ir			
without Irrigation area at present		1,200	ha
Increased sowing area Rice		400	ha
Increased sowing area Other Crop		1,000	ha
Yield of Rice Production	without	2.50	t/ha
Yield of Other Crop	with	4.00	t/ha
Estimated increase of productions			
Rice Production		4,200	t
Other Crop		5,200	t
Total Increase of Production			
Rice Production		9,445	t
Other Crop		8,000	t
Estimated Increase of Production Value			
Conditions			
Farm gate Price		3,000	1000 VND/t
Rice Production		2,500	1000 VND/t
Other Crop		48,335,000	1000 VND
Estimated Increased Production Value			

Estimated increase of adjusting real GDP per capita	
Conditions	
Present GDP per Capita	207 US\$/capita
Present GDP per Capita	2,277,000 VND/capita
Population in 2010	157,957 person
Total GDP	359,668,089 1000 VND
Portion of increase at present	13.44 %
Future real GDP without project	1,955 PPPS
Future real GDP with project	2,218 PPPS
Estimated real GDP per capita with project	263 PPPS
Estimated increase of real GDP per capita index	
Conditions	
Maximum adjusted real GDP per capita	6,040 PPPS
Minimum adjusted real GDP per capita	100 PPPS
Adjusted real GDP per capita index without project	0.31228956
Adjusted real GDP per capita index with project	0.35651989
Estimated increase of index	0.04423033
Estimated increase of HDI	
	0.01474344

Table P.5.1 Computation of HDI with Project (7/18)

IR + AI1		2,300 ha of actual irrigated area is increased	
Estimated direct effect		Average 15 % of farm gate price will increase	
Conditions for IR + AI1			
without Irrigation area at present		600	ha
Increased sowing area Rice		200	ha
Increased sowing area Other Crop		300	ha
Yield of Rice Production	without	2.50	t/ha
	with	4.50	t/ha
Yield of Other Crop		3.00	t/ha
		4.00	t/ha
Estimated increase of productions			
Rice Production		2,100	t
Other Crop		1,800	t
Conditions for IR			
without Irrigation area at present		1,400	ha
Increased sowing area Rice		800	ha
Increased sowing area Other Crop		1,200	ha
Yield of Rice Production	without	2.50	t/ha
	with	4.50	t/ha
Yield of Other Crop		3.00	t/ha
		4.00	t/ha
Estimated increase of productions			
Rice Production		6,400	t
Other Crop		6,200	t
Total Increase of Production			
Rice Production		8,500	t
Other Crop		8,000	t
Estimated Increase of Production Value			
Conditions			
Farm gate Price for IR + AI1		3,450	1000 VND/t
Rice Production		2,875	1000 VND/t
Other Crop			
Farm gate Price for IR only		3,000	1000 VND/t
Rice Production		2,500	1000 VND/t
Other Crop			
Estimated Increased Production Value		47,120,000	1000 VND
Estimated increase of adjusting real GDP per capita			
Conditions			
Present GDP per Capita		207	US\$/capita
Present GDP per Capita		2,277,000	VND/capita
Population in 2010		157,957	person
Total GDP		359,668,089	1000 VND
Portion of increase at present		13.10	%
Future real GDP without project		1,955	PPPS
Future real GDP with project		2,211	PPPS
Estimated real GDP per capita with project		256	PPPS
Estimated increase of real GDP per capita index			
Conditions			
Maximum adjusted real GDP per capita		6,040	PPPS
Minimum adjusted real GDP per capita		100	PPPS
Adjusted real GDP per capita index without project		0.31228956	
Adjusted real GDP per capita index with project		0.35540807	
Estimated increase of index		0.0431185	
Estimated increase of HDI		0.01437283	

Table P.5.1 Computation of HDI with Project (8/18)

IR + A12		2,500 ha of actual irrigated area is increased		Average 20 % of Rice Production will be increased	
Estimated direct effect					
Conditions for IR + A12					
without Irrigation area at present		600	ha		
Increased sowing area Rice		200	ha		
Increased sowing area Other Crop		300	ha		
Yield of Rice Production	without	2.50	t/ha	with	4.50
Yield of Other Crop		3.00	t/ha		4.00
Estimated increase of productions:					
Rice Production		2,100	t		
Other Crop		1,800	t		
Conditions for IR					
without Irrigation area at present		1,400	ha		
Increased sowing area Rice		800	ha		
Increased sowing area Other Crop		1,200	ha		
Yield of Rice Production	without	2.50	t/ha	with	4.50
Yield of Other Crop		3.00	t/ha		4.00
Estimated increase of productions:					
Rice Production		6,400	t		
Other Crop		6,200	t		
Total Increase of Production					
Rice Production		8,500	t		
Other Crop		8,000	t		
Estimated Increase of Production Value					
Conditions					
Farm gate Price for IR + A12		3,650	1000 VND/t		
Rice Production		3,000	1000 VND/t		
Other Crop					
Farm gate Price for IR only		3,000	1000 VND/t		
Rice Production		2,500	1000 VND/t		
Other Crop					
Estimated Increased Production Value					47,765,000 1000 VND

Estimated increase of adjusting real GDP per capita		207 US\$/capita	
Conditions			
Present GDP per Capita		2,277,000	VND/capita
Population in 2010		157,957	person
Total GDP		359,668,089	1000 VND
Portion of increase at present		13.28	%
Future real GDP without project		1,955	PPPS
Future real GDP with project		2,215	PPPS
Estimated real GDP per capita with project			
Estimated increase of real GDP per capita index		260	PPPS
Conditions			
Maximum adjusted real GDP per capita		6,040	PPPS
Minimum adjusted real GDP per capita		100	PPPS
Adjusted real GDP per capita index without project		0.31228956	
Adjusted real GDP per capita index with project		0.35599829	
Estimated increase of index			
Estimated increase of HDI		0.04570873	
		0.01456958	

Table P.5.1 Computation of HDI with Projects (9/18)

IR + FD + AS2		2,300 ha of actual irrigated area is increased	
Estimated direct effect		Inundation damage for 1,200 ha of cultivated area is mitigated	
Average 10 % of Rice Production will increased			
Conditions of Ir - AS2		1,200	ha
without Irrigation area at present		600	ha
Increased sowing area Rice		1,000	ha
Increased sowing area Other Crop			
Yield of Rice Production	without	2.45	t/ha
Yield of Other Crop	with	4.95	t/ha
	without	3.00	t/ha
Estimated increase of productions			
Rice Production		5,910	t
Other Crop		5,200	t
Conditions of FD + AS2			
Present Cultivated area Rice		300	ha
Present Cultivated area Other Crop		100	ha
Yield of Rice Production	without	2.75	t/ha
Yield of Other Crop	with	3.00	t/ha
Estimated increase of productions			
Rice Production		225	t
Other Crop		50	t
Conditions of Ir + FD + AS2			
without Irrigation area at present		800	ha
Increased sowing area Rice		400	ha
Increased sowing area Other Crop		500	ha
Yield of Rice Production	without	2.95	t/ha
Yield of Other Crop	with	4.95	t/ha
	without	2.50	t/ha
Estimated increase of productions			
Rice Production		4,340	t
Other Crop		3,200	t

Conditions of AS2 only		11,557		ha	
Rice sowing area at present					
Yield of Rice Production	without	3.00		0.30	t/ha
	with	3.30			
Estimated increase of productions				3,467	t
Rice Production					
Total Increase of Production				13,942	t
Rice Production				8,450	t
Other Crop					
Estimated Increase of Production Value					
Conditions					
Farm gate Price				3,000	1000 VND/t
Rice Production				2,500	1000 VND/t
Other Crop				62.95	1,500 1000 VND
Estimated Increased Production Value					
Estimated increase of adjusting real GDP per capita					
Conditions					
Present GDP per Capita				207	US\$/capita
Present GDP per Capita				2,277,000	VND/capita
Population in 2010				157,957	person
Total GDP				359,668,089	1000 VND
Portion of increase at present				17.50	%
Future real GDP without project				1,953	PPPS
Future real GDP with project				2,297	PPPS
Estimated real GDP per capita with project				342	PPPS
Estimated increase of real GDP per capita index					
Conditions					
Maximum adjusted real GDP per capita				6,040	PPPS
Minimum adjusted real GDP per capita				100	PPPS
Adjusted real GDP per capita index without project				0.31228956	
Adjusted real GDP per capita index with project				0.36989495	
Estimated increase of index				0.05760539	
Estimated increase of HDI				0.0192018	

Table P.5.1 Computation of HDI with Projects (10/18)

IR + FD + AS4		2,300 ha of actual irrigated area is increased	
Estimated direct effect		Inundation damage for 1,200 ha of cultivated area is mitigated	
		Average 1.5 % of Rice Production will increase	
Conditions of Ir only			
without Irrigation area at present	800	ha	
Increased sowing area Rice	400	ha	
Increased sowing area Other Crop	700	ha	
Yield of Rice Production	without	with	
Yield of Other Crop	2.50	4.50	t/ha
Estimated increase of productions	3.00	4.00	t/ha
Rice Production			t
Other Crop			t
Conditions of FD only			
Present Cultivated area Rice	300	ha	
Present Cultivated area Other Crop	100	ha	
Yield of Rice Production	without	with	
Yield of Other Crop	2.00	2.50	t/ha
Estimated increase of productions	2.50	3.00	t/ha
Rice Production			t
Other Crop			t
Conditions of Ir + FD + AS4			
without Irrigation area at present	800	ha	
Increased sowing area Rice	400	ha	
Increased sowing area Other Crop	500	ha	
Yield of Rice Production	without	with	
Yield of Other Crop	2.00	5.18	t/ha
Estimated increase of productions	2.50	4.00	t/ha
Rice Production			t
Other Crop			t

Conditions of Ir + AS4			
without Irrigation area at present	400	ha	
Increased sowing area Rice	200	ha	
Increased sowing area Other Crop	300	ha	
Yield of Rice Production	without	with	
Yield of Other Crop	2.50	5.18	t/ha
Estimated increase of productions	3.00	4.00	t/ha
Rice Production			t
Other Crop			t
Total Increase of Production	9,760	t	
Rice Production	8,450	t	
Other Crop			
Estimated Increase of Production Value			
Conditions			
Farm gate Price	3,000	1000 VND/ha	
Rice Production	2,500	1000 VND/t	
Other Crop			
Estimated Increased Production Value	50,405,000	1000 VND	
Estimated increase of adjusting real GDP per capita			
Conditions			
Present GDP per Capita	207	US\$/capita	
Present GDP per Capita	2,277,000	VND/capita	
Population in 2010	157,957	person	
Total GDP	359,668,089	1000 VND	
Portion of increase at present	14.01	%	
Future real GDP without project	1,955	PPPS	
Future real GDP with project	2,229	PPPS	
Estimated real GDP per capita with project	274	PPPS	
Conditions			
Maximum adjusted real GDP per capita	6,040	PPPS	
Minimum adjusted real GDP per capita	100	PPPS	
Adjusted real GDP per capita index without project	0.31228956		
Adjusted real GDP per capita index with project	0.3584141		
Estimated increase of index	0.04612454		
Estimated increase of HDI	0.01557485		

Table P.5.1 Computation of HDI with Projects (11/18)

IR + FD + AI1	
Estimated direct effect	2,300 ha of actual irrigated area is increased Inundation damage for 1,200 ha of cultivated area is mitigated Average 15% of farm gate price will increased
Conditions of Ir only	1,200 ha
without irrigation area at present	600 ha
Increased sowing area Rice	1,000 ha
Increased sowing area Other Crop	without with
Yield of Rice Production	2.50 4.50
Yield of Other Crop	3.00 4.00
Estimated increase of productions	
Rice Production	5,100 t
Other Crop	5,200 t
Conditions of FD only	
Present Cultivated area Rice	300 ha
Present Cultivated area Other Crop	100 ha
Yield of Rice Production	without with
Yield of Other Crop	2.00 2.50 3.00
Estimated increase of productions	
Rice Production	150 t
Other Crop	50 t
Conditions of Ir + FD	
without irrigation area at present	800 ha
Increased sowing area Rice	400 ha
Increased sowing area Other Crop	500 ha
Yield of Rice Production	without with
Yield of Other Crop	2.00 2.50 4.50 4.00
Estimated increase of productions	
Rice Production	3,800 t
Other Crop	3,200 t
Total Increase of Production	
Rice Production	9,050 t
Other Crop	8,450 t

Estimated Increase of Production Value		
Conditions		
Farm gate Price		3,000 1000 VND/t
Rice Production		2,500 1000 VND/t
Other Crop		48,275,000 1000 VND
Estimated Increased Production Value		
Conditions		
Projected area (rice)	600 ha	
Projected area (other crop)	400 ha	
Yield of Rice Production	4.50 t/ha	
Yield of Other Crop	4.00 t/ha	
Productions		
Rice Production	2,700 t	
Other Crop	1,600 t	
Estimated Increase of Production Value		
Conditions		
Increased Farm gate Price		450 1000 VND/t
Rice Production		375 1000 VND/t
Other Crop		1,815,000 1000 VND
Estimated Increased Production Value		50,090,000
Estimated increase of adjusting real GDP per capita		
Conditions		
Present GDP per Capita	207 USS/capita	
Present GDP per Capita	2,277,000 VND/capita	
Population in 2010	157,957 person	
Total GDP	359,668,089 1000 VND	
Portion of increase at present	13.93 %	
Future real GDP without project	1,955 PPPS	
Future real GDP with project	2,227 PPPS	
Estimated real GDP per capita with project	272 PPPS	
Estimated increase of real GDP per capita index		
Conditions		
Maximum adjusted real GDP per capita	6,040 PPPS	
Minimum adjusted real GDP per capita	100 PPPS	
Adjusted real GDP per capita index without project	0.31228956	
Adjusted real GDP per capita index with project	0.35812585	
Estimated increase of index	0.04583629	
Estimated increase of HDI		0.01527876

Table P.5.1 Computation of HDI with Projects (12/18)

IR + FD + AI2		2,500 ha of actual irrigated area is increased	
Estimated direct effect		Inundation damage for 1,200 ha of cultivated area is mitigated	
		Average 20% of farm gate price will increase	
Conditions of Ir only			
without Irrigation area at present		1,200	ha
Increased sowing area Rice		600	ha
Increased sowing area Other Crop		1,000	ha
	without		
Yield of Rice Production	2.50	4.50	t/ha
Yield of Other Crop	3.00	4.00	t/ha
Estimated increase of productions			
Rice Production		5,100	t
Other Crop		5,200	t
Conditions of FD only			
Present Cultivated area Rice		300	ha
Present Cultivated area Other Crop		100	ha
	without		
Yield of Rice Production	2.00	2.50	t/ha
Yield of Other Crop	2.50	3.00	t/ha
Estimated increase of productions			
Rice Production		150	t
Other Crop		50	t
Conditions of Ir + FD			
without Irrigation area at present		800	ha
Increased sowing area Rice		400	ha
Increased sowing area Other Crop		500	ha
	without		
Yield of Rice Production	2.00	4.50	t/ha
Yield of Other Crop	2.50	4.00	t/ha
Estimated increase of productions			
Rice Production		3,800	t
Other Crop		3,200	t
Total Increase of Production			
Rice Production		9,050	t
Other Crop		8,450	t
Estimated increase of Production Value			
Conditions			
Farm gate Price		3,000	1000 VND/t
Rice Production		2,500	1000 VND/t
Other Crop		48,275,000	1000 VND
Estimated Increased Production Value			
Conditions of Ir + FD + AI2			
Projected area (rice)		600	ha
Projected area (other crop)		400	ha
Yield of Rice Production		4.50	t/ha
Yield of Other Crop		4.00	t/ha
Productions			
Rice Production		2,700	t
Other Crop		1,600	t
Estimated Increase of Production Value			
Conditions			
Increased Farm gate Price		600	1000 VND/t
Rice Production		500	1000 VND/t
Other Crop		2,420,000	1000 VND
Estimated Increased Production Value		50,695,000	
Estimated increase of adjusting real GDP per capita			
Conditions			
Present GDP per Capita		207	US\$/capita
Present GDP per Capita		2,277,000	VND/capita
Population in 2010		157,957	person
Total GDP		359,668,089	1000 VND
Portion of increase at present		14.09	%
Future real GDP without project		1,955	PPPS
Future real GDP with project		2,231	PPPS
Estimated real GDP per capita with project		276	PPPS
Estimated increase of real GDP per capita index			
Conditions			
Maximum adjusted real GDP per capita		6,040	PPPS
Minimum adjusted real GDP per capita		100	PPPS
Adjusted real GDP per capita index without project		0.31228956	
Adjusted real GDP per capita index with project		0.35867947	
Estimated increase of index		0.04638991	
Estimated increase of HDI		0.0154633	

Table P.5.1 Computation of HDI with Projects (13/18)

IR + FD + AS2 + AS4		2,300 ha of actual irrigated area is increased Inundation damage for 1,200 ha of cultivated area is mitigated Average 10 % of Rice Production will be increased Average 15 % of Rice Production will be increased			
Estimated direct effect					
Conditions of IR + AS2 + AS4					
without Irrigation area at present				1,200	ha
Increased sowing area Rice				600	ha
Increased sowing area Other Crop				1,000	ha
Yield of Rice Production	without	with	5.69	3.19	t/ha
Yield of Other Crop	2.50	4.00		1.00	t/ha
Estimated increase of productions					
Rice Production				7,247	t
Other Crop				5,200	t
Conditions of FD + AS2					
Present Cultivated area Rice				300	ha
Present Cultivated area Other Crop				100	ha
Yield of Rice Production	without	with	2.75	0.75	t/ha
Yield of Other Crop	2.00	3.00		0.50	t/ha
Estimated increase of productions					
Rice Production				225	t
Other Crop				50	t
Conditions of IR + FD + AS2 + AS4					
without Irrigation area at present				800	ha
Increased sowing area Rice				400	ha
Increased sowing area Other Crop				500	ha
Yield of Rice Production	without	with	5.69	3.69	t/ha
Yield of Other Crop	2.00	4.00		1.50	t/ha
Estimated increase of productions					
Rice Production				5,231	t
Other Crop				3,200	t

Conditions of AS2 only		11,557	ha
Rice sowing area at present			
Yield of Rice Production		without	with
		3.00	3.30
Estimated increase of productions			
Rice Production			3,467
Total increase of Production			
Rice Production			16,170
Other Crop			8,450
Estimated Increase of Production Value			
Conditions			
Farm gate Price			3,000
Rice Production			1000 VND/t
Other Crop			2,500
			1000 VND/t
Estimated increased Production Value			
			69,633,800
Estimated increase of adjusting real GDP per capita			
Conditions			
Present GDP per Capita			207
Present GDP per Capita			US\$/capita
Population in 2010			2,277,000
Total GDP			VND/capita
Portion of increase at present			157,957
Future real GDP without project			person
Future real GDP with project			359,668,089
Estimated real GDP per capita with project			1000 VND
Estimated real GDP per capita index			19.56
Estimated real GDP per capita index			%
Estimated real GDP per capita index			1.955
Estimated real GDP per capita index			PPPS
Estimated real GDP per capita index			PPPS
Estimated real GDP per capita index			PPPS
Estimated real GDP per capita index			PPPS
Conditions			
Maximum adjusted real GDP per capita			6,040
Minimum adjusted real GDP per capita			100
Adjusted real GDP per capita index without project			0.31228956
Adjusted real GDP per capita index with project			0.37600996
Estimated increase of index			0.0637204
Estimated increase of HDI			0.02124013

Table P.5.1 Computation of HDI with Projects (14/18)

IR + FD + AS2 + A11				
Estimated direct effect	2,300 ha of actual irrigated area is increased			
	Inundation damage for 1,200 ha of cultivated area is mitigated			
	Average 10 % of Rice Production will increase			
	Average 15 % of farm gate price will increase			
Conditions of IR + AS2				
without Irrigation area at present				800 ha
Increased sowing area Rice				400 ha
Increased sowing area Other Crop				500 ha
Yield of Rice Production	without	2.00	with	2.95 t/ha
Yield of Other Crop	without	2.50	with	4.00 t/ha
Estimated increase of productions				
Rice Production				4,340 t
Other Crop				3,200 t
Total Increase of Production				
Rice Production				13,942 t
Other Crop				8,450 t
Farm gate Price				
Rice Production				3,000 VND/t
Other Crop				2,500 VND/t
Estimated Increased Production Value				
Conditions of IR + FD + AS2 + A11				62,951,300 VND
Projected area (rice)				
Projected area (other crop)				600 ha
Yield of Rice Production				400 ha
Yield of Other Crop				4.95 t/ha
Rice Production				4.00 t/ha
Other Crop				2,970 t
Increased Farm gate Price				
Rice Production				450 VND/t
Other Crop				375 VND/t
Estimated Increased Production Value				
Estimated increase of adjusting real GDP per capita				1,956,500 VND
Present GDP per Capita				
Present GDP per Capita				207 US\$/capita
Population in 2010				2,277,000 VND/capita
Total GDP				157,957 person
Portion of increase at present				359,668,089 VND
Future real GDP without project				18.04 %
Future real GDP with project				1,955 PPP\$
Estimated real GDP per capita with project				
Estimated increase of real GDP per capita index				2,508 PPP\$
Maximum adjusted real GDP per capita				353 PPP\$
Minimum adjusted real GDP per capita				6,040 PPP\$
Adjusted real GDP per capita index without project				100 PPP\$
Adjusted real GDP per capita index with project				0.31228956
Estimated increase of index				
Estimated increase of index				0.371667
Estimated increase of HDI				
Estimated increase of HDI				0.05937744
				0.01979248

IR + FD + AS2 + A11				
Estimated direct effect	2,300 ha of actual irrigated area is increased			
	Inundation damage for 1,200 ha of cultivated area is mitigated			
	Average 10 % of Rice Production will increase			
	Average 15 % of farm gate price will increase			
Conditions of IR + AS2				
without Irrigation area at present				1,200 ha
Increased sowing area Rice				600 ha
Increased sowing area Other Crop				1,000 ha
Yield of Rice Production	without	2.50	with	2.45 t/ha
Yield of Other Crop	without	3.00	with	4.00 t/ha
Estimated increase of productions				
Rice Production				5,910 t
Other Crop				5,200 t
Conditions of FD + AS2				
Present Cultivated area Rice				300 ha
Present Cultivated area Other Crop				100 ha
Yield of Rice Production	without	2.00	with	2.75 t/ha
Yield of Other Crop	without	2.50	with	3.00 t/ha
Estimated increase of productions				
Rice Production				225 t
Other Crop				50 t
Conditions of AS2 only				
Rice sowing area at present				11,557 ha
Yield of Rice Production	without	3.00	with	3.30 t/ha
Estimated increase of productions				
Rice Production				3,467 t

Table P.5.1 Computation of HDI with Projects (15/18)

IR + FD + AS2 + AI2		2,300 ha of actual irrigated area is increased Inundation damage for 1,200 ha of cultivated area is mitigated		Average 10 % of Rice Production will increase Average 20 % of farm gate price will increase	
Estimated direct effect					
Conditions of IR + AS2					
without Irrigation area at present		1,200	ha		
Increased sowing area Rice		600	ha		
Increased sowing area Other Crop		1,000	ha		
Yield of Rice Production	without	2.50	4.95	2.45	t/ha
Yield of Other Crop	with	3.00	4.00	1.00	t/ha
Estimated increase of productions					
Rice Production				5,910	t
Other Crop				5,200	t
Conditions of FD + AS2					
Present Cultivated area Rice		300	ha		
Present Cultivated area Other Crop		100	ha		
Yield of Rice Production	without	2.00	2.75	0.75	t/ha
Yield of Other Crop	with	2.50	3.00	0.50	t/ha
Estimated increase of productions					
Rice Production				225	t
Other Crop				50	t
Conditions of AS2 only					
Rice sowing area at present		11,557	ha		
Yield of Rice Production	without			3.30	t/ha
	with			3.00	t/ha
Estimated increase of productions					
Rice Production				3,467	t
Conditions of IR + FD + AS2					
without Irrigation area at present		800	ha		
Increased sowing area Rice		400	ha		
Increased sowing area Other Crop		500	ha		
Yield of Rice Production	without	2.00	4.95	2.95	t/ha
Yield of Other Crop	with	2.50	4.00	1.50	t/ha
Estimated increase of productions					
Rice Production				4,340	t
Other Crop				3,200	t
Total Increase of Production				13,942	t
Rice Production				8,450	t
Other Crop					
Farm gate Price		3,000	1000 VND/t		
Rice Production		2,500	1000 VND/t		
Other Crop		62,951,300	1000 VND		
Estimated increased Production Value					
Conditions Of IR +FD + AS2 + AI2					
Projected area (rice)		600	ha		
Projected area (other crop)		400	ha		
Yield of Rice Production		4.95	t/ha		
Yield of Other Crop		4.00	t/ha		
Rice Production		2,970	t		
Other Crop		1,600	t		
Increased Farm gate Price		600	1000 VND/t		
Rice Production		500	1000 VND/t		
Other Crop		2,582,000	1000 VND		
Estimated increased Production Value					
Estimated increase of adjusting real GDP per capita					
Present GDP per Capita		207	US\$/capita		
Present GDP per Capita		2,277,000	VND/capita		
Population in 2010		157,957	person		
Total GDP		359,668,089	1000 VND		
Portion of increase at present		18.22	%		
Future real GDP without project		1,955	PPPS		
Future real GDP with project		2,311	PPPS		
Estimated real GDP per capita with project					
Estimated increase of real GDP per capita index					
Maximum adjusted real GDP per capita		6,040	PPPS		
Minimum adjusted real GDP per capita		100	PPPS		
Adjusted real GDP per capita without project		0.31228956			
Adjusted real GDP per capita index with project		0.37225768			
Estimated increase of index					
Estimated increase of HDI					
0.01998937					

Table P.5.1 Computation of HDI with Projects (16/18)

IR + FD + AS2 + AS4 + A11		2,300 ha of actual irrigated area is increased	
Estimated direct effect			
Inundation damage for 1,200 ha of cultivated area is mitigated			
Average 10 % of Rice Production will increase			
Average 15 % of Rice Production will increase			
Conditions of Ir + AS2 + AS4			
without irrigation area at present		1,200	ha
Increased sowing area Rice		600	ha
Increased sowing area Other Crop		1,000	ha
Yield of Rice Production	without	2.50	t/ha
Yield of Other Crop	with	5.69	t/ha
Yield of Other Crop	without	3.00	t/ha
Yield of Other Crop	with	4.00	t/ha
Estimated increase of productions			
Rice Production		7,247	t
Other Crop		5,200	t
Conditions of FD + AS2			
Present Cultivated area Rice		300	ha
Present Cultivated area Other Crop		100	ha
Yield of Rice Production	without	2.00	t/ha
Yield of Other Crop	with	2.75	t/ha
Yield of Other Crop	without	2.50	t/ha
Yield of Other Crop	with	3.00	t/ha
Estimated increase of productions			
Rice Production		225	t
Other Crop		50	t
Conditions of Ir + FD + AS2 + AS4			
without irrigation area at present		800	ha
Increased sowing area Rice		400	ha
Increased sowing area Other Crop		500	ha
Yield of Rice Production	without	2.00	t/ha
Yield of Other Crop	with	5.69	t/ha
Yield of Other Crop	without	2.50	t/ha
Yield of Other Crop	with	4.00	t/ha
Estimated increase of productions			
Rice Production		5,231	t
Other Crop		3,200	t

Conditions of AS2 only		with		without	
Rice sowing area at present	ha	11,557			
Yield of Rice Production	t/ha		3.30	3.00	
Estimated increase of productions					
Rice Production	t	3,467			
Total Increase of Production					
Rice Production	t	16,170			
Other Crop	t	8,450			
Farm gate Price					
Rice Production	1000 VND/t	3,000			
Other Crop	1000 VND/t	2,500			
Estimated Increased Production Value	1000 VND	69,633,800			
Conditions OF IR + FD + AS2 + AS4 + A11					
Projected area (rice)	ha	600			
Projected area (other crop)	ha	400			
Yield of Rice Production	t/ha	5.69			
Yield of Other Crop	t/ha	4.00			
Yield of Other Crop	t	3,414			
Other Crop	t	1,600			
Increased Farm gate Price					
Rice Production	450 1000 VND/t	450			
Other Crop	375 1000 VND/t	375			
Estimated Increased Production Value	1000 VND	2,136,300			
Estimated increase of adjusting real GDP per capita					
Conditions					
Present GDP per Capita	207 US\$/capita	207			
Present GDP per Capita	2,277,000 VND/capita	2,277,000			
Population in 2010	person	157,957			
Total GDP	1000 VND	359,668,089			
Portion of increase at present	%	19.95			
Future real GDP without project	PPPS	1,955			
Future real GDP with project	PPPS	2,345			
Estimated real GDP per capita with project	PPPS	390			
Estimated increase of real GDP per capita index					
Conditions					
Maximum adjusted real GDP per capita	PPPS	6,040			
Minimum adjusted real GDP per capita	PPPS	100			
Adjusted real GDP per capita index without project		0.51228956			
Adjusted real GDP per capita index with project		0.37796485			
Estimated increase of index		0.06567528			
Estimated increase of HDI		0.02189176			

Table P.5.1 Computation of HDI with Projects (17/18)

IR + FD + AS2 + AS4 + A12		2,500 ha of actual irrigated area is increased	
Estimated direct effect		inundation damage for 1,200 ha of cultivated area is mitigated	
Average 10 % of Rice Production will increase		Average 20 % of Rice Production will increase	
Conditions of Ir + AS2 + AS4			
without irrigation area at present	1,200	ha	
Increased sowing area Rice	600	ha	
Increased sowing area Other Crop	1,000	ha	
without	with		
Yield of Rice Production	2.50	5.69	t/ha
Yield of Other Crop	3.00	4.00	t/ha
Estimated increase of productions			
Rice Production	7,247	t	
Other Crop	5,200	t	
Conditions of FD + AS2			
Present Cultivated area Rice	300	ha	
Present Cultivated area Other Crop	100	ha	
without	with		
Yield of Rice Production	2.00	2.75	t/ha
Yield of Other Crop	2.50	3.00	t/ha
Estimated increase of productions			
Rice Production	225	t	
Other Crop	50	t	
Conditions of Ir + FD + AS2 + AS4			
without irrigation area at present	800	ha	
Increased sowing area Rice	400	ha	
Increased sowing area Other Crop	500	ha	
without	with		
Yield of Rice Production	2.00	5.69	t/ha
Yield of Other Crop	2.50	4.00	t/ha
Estimated increase of productions			
Rice Production	5,231	t	
Other Crop	3,200	t	

Conditions of AS2 only		11,557	ha
Rice sowing area at present	without	3.00	t/ha
Yield of Rice Production	with	3.30	t/ha
Estimated increase of productions			
Rice Production		3,467	t
Total Increase of Production			
Rice Production		16,170	t
Other Crop		8,450	t
Farm gate Price			
Rice Production		3,000	1000 VND/t
Other Crop		2,500	1000 VND/t
Estimated Increased Production Value			
		69,633,800	1000 VND
Conditions of IR + FD + AS2 + AS4 + A12			
Projected area (rice)		600	ha
Projected area (other crop)		400	ha
Yield of Rice Production		5.69	t/ha
Yield of Other Crop		4.00	t/ha
Rice Production		3,414	t
Other Crop		1,600	t
Increased Farm gate Price			
Rice Production		600	1000 VND/t
Other Crop		500	1000 VND/t
Estimated Increased Production Value			
		2,848,400	1000 VND
Estimated increase of adjusting real GDP per capita			
Conditions			
Present GDP per Capita		207	US\$/capita
Present GDP per Capita		2,277,000	VND/capita
Population in 2010		157,957	person
Total GDP		359,668,089	1000 VND
Portion of increase at present		20.15	%
Future real GDP without project		1,955	PPPS
Future real GDP with project		2,349	PPPS
Estimated real GDP per capita with project			
		394	PPPS
Estimated increase of real GDP per capita index			
Conditions			
Maximum adjusted real GDP per capita		6,040	PPPS
Minimum adjusted real GDP per capita		100	PPPS
Adjusted real GDP per capita index without project		0.31228956	
Adjusted real GDP per capita index with project		0.37861647	
Estimated increase of index			
		0.06632691	
Estimated increase of HDI			
		0.02210897	

Table P.5.1 Computation of HDI with Projects (18/18)

IR + FD + AS2 + AS4 + A11 + A12		2,300 ha of actual irrigated area is increased		Inundation damage for 1,200 ha of cultivated area is mitigated		Average 10 % of Rice Production will increase		Average 20 % of Rice Production will increase	
Estimated direct effect									
Conditions of IR + AS2 + AS4									
without Irrigation area at present			1,200	ha					
Increased sowing area Rice			600	ha					
Increased sowing area Other Crop			1,000	ha					
Yield of Rice Production		without	5.69	t/ha					
Yield of Other Crop		with	4.00	t/ha					
Estimated increase of productions									
Rice Production			7,247	t					
Other Crop			5,200	t					
Conditions of FD + AS2									
Present Cultivated area Rice			300	ha					
Present Cultivated area Other Crop			100	ha					
Yield of Rice Production		without	2.00	t/ha					
Yield of Other Crop		with	2.75	t/ha					
Estimated increase of productions									
Rice Production			0.75	t					
Other Crop			0.50	t					
Conditions of IR + FD + AS2 + AS4									
without Irrigation area at present			800	ha					
Increased sowing area Rice			400	ha					
Increased sowing area Other Crop			500	ha					
Yield of Rice Production		without	5.69	t/ha					
Yield of Other Crop		with	4.00	t/ha					
Estimated increase of productions									
Rice Production			5,231	t					
Other Crop			3,200	t					

Conditions of AS2 only									
Rice sowing area at present			11,557	ha					
Yield of Rice Production		without	3.00	t/ha					
Estimated increase of productions		with	3.30	t/ha					
Rice Production			3,467	t					
Total Increase of Production									
Rice Production			16,170	t					
Other Crop			8,450	t					
Farm gate Price			3,000	1000 VND/t					
Rice Production			2,500	1000 VND/t					
Other Crop			69,633,800	1000 VND					
Estimated Increased Production Value									
Conditions of IR + FD + AS2 + AS4 + A11 + A12									
Projected area (rice)			600	ha					
Projected area (other crop)			400	ha					
Yield of Rice Production			5.69	t/ha					
Yield of Other Crop			4.00	t/ha					
Rice Production			3,414	t					
Other Crop			1,600	t					
Increased Farm gate Price			690	1000 VND/t					
Rice Production			575	1000 VND/t					
Other Crop			3,275,660	1000 VND					
Estimated Increased Production Value									
Estimated increase of adjusting real GDP per capita									
Conditions			207	US\$/capita					
Present GDP per Capita			2,277,000	VND/capita					
Population in 2010			157,957	person					
Total GDP			359,668,089	1000 VND					
Portion of increase at present			20.27	%					
Future real GDP without project			1,955	PPPS					
Future real GDP with project			2,351	PPPS					
Estimated real GDP per capita with project			396	PPPS					
Estimated increase of real GDP per capita index									
Conditions			6,040	PPPS					
Maximum adjusted real GDP per capita			100	PPPS					
Minimum adjusted real GDP per capita			0.31228956						
Adjusted real GDP per capita index without project			0.37900745						
Adjusted real GDP per capita index with project			0.06671789						
Estimated increase of index			0.0222393						
Estimated increase of HDI									

APPENDIX Q : RURAL CREDIT

**THE STUDY
ON
MODEL RURAL DEVELOPMENT
IN
NAM DAN DISTRICT, NGHE AN PROVINCE**

FINAL REPORT

APPENDIX-Q : RURAL CREDIT

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APPENDIX-Q : RURAL CREDIT

Q.1 Introduction

The present appendix presents a sketch of a Pilot Credit Project (PCP) which could be used as a guideline for a future in-depth formulation of a rural credit project. The PCP presented hereafter is not related to the recommendations on the rural credit system given in the main text. In the main text, the farmer groups do not deal with cash under the suggested rural credit system proposed there; in the PCP, the farmer groups receive and deal with cash. Thus, it is important to be clear that the PCP described in this appendix is only to be used for reference purposes only.

Q.1.1 Background on Existing Credit Lines in Nam Dan District

Before describing the PCP, it would be useful to have some information on the existing credit lines in Nam Dan District. Table Q.1.1 provides a general overview of the existing credit lines available for rural smallholders in the Nam Dan District.

Q.2 Pilot Credit Project

Q.2.1 Components of the Pilot Credit Project

The PCP is the prototype model for rural credit allocation which, if successful, could be applied to other Districts.

Table Q.2.1 gives details about the components of the PCP. However, it would be interesting to note what are the main characteristics of the PCP which makes it different from the existing lines of credit. These characteristics are:

- It will work with Joint Liability Groups (JLGs) only. These groups are farmers' groups created for the exclusive purpose of accessing credit through the PCP. The group will be supply a strong and reliable collateral in the sense that all the members of the JLGs are jointly and collectively responsible for the loan. The penalty for non-repayment of a loan will be faced by all members of the JLG even though the loan was allocated individually to a member of it. In order to avoid the penalty, the members of the JLGs will encourage and pressure each other for the payment on time of the loans (see Table Q.2.1 for details on JLGs and collateral).
- The JLGs will be properly organized and trained in the credit operations with the help of staff from the Viet Nam Bank for Agriculture (VBA). The VBA staff, in turn, will be previously trained so to carry out the activities of organizing, implementing, supervising and monitoring credit operations with the JLGs. (See Table Q.2.2 for description of intended activities for training of VBA's staff and organization and implementation of the JLGs).
- The number of VBA's staff directly involved in the PCP will be adequate for an efficient and smooth implementation of the project. The VBA's staff will be provided by the PCP with adequate means and infrastructure to carry out their activities (see Table Q.2.3 for details).

- The interest rate charged for the loans granted through the PCP would be high enough to cover the administrative and operational costs incurred by the VBA when granting the loans (see Table Q.2.1 for details).
- The VBA will grant long-term loans (at present, the VBA only provide short and medium-term loans) allowing the financing production projects which have a maturation period longer than 3 years (see Table Q.2.1 for details).

Q.2.2 Coordination of the Project

There will be a Managing Group constituted by the Headquarters, Provincial, and District Coordinators for the Pilot Credit Project. Its role is to coordinate, supervise, and monitor the implementation of the PCP. This Managing Group will be advised and guided by a Steering Committee constituted by members from the Ministry of Agriculture and Rural Development, State Bank of Viet Nam, and Ministry of Finance.

At the operational level, there will be 10 Field Loan Officials (FLO) who will be in charge or organizing and putting into operation the JLGs. The FLOs will be directly involved in the credit operations with the JLGs.

Q.2.3 Pilot Credit Project Costs

Table Q.2.3 provides information on the estimated costs for the PCP.

APPENDIX Q : TABLES



Table Q.1.1 Outline of main Credit Lines and Bank for the Poor

	CREDIT LINE 499A (Less than VND500,00 per loan)	PREFERENTIAL FUND	BANK FOR THE POOR
Implementation Period	September 1993 - Present	April 1995 - Present	Since April 1996
Structure	Window of general lending program	Special lending program administered by VBA.	Separate structure within VBA. Separate policies, procedures, record keeping, and accounting. Uses existing VBA branches facilities and staff.
Methodology/Intermediaries	Direct lending through transaction offices, directly through mobile credit units and or credit offices, and directly through self help groups.	Direct lending through self-help groups, mass organizations, local committees, etc.	Direct lending to farmers considered to be poor by the corresponding People's Committee of the area where they live in.
Group mechanism	No size guideline. Joint Liability Groups are not tested under this credit line.	No group size guidelines. Average is around 25-30 members. However, in practice, Joint Liability Groups are not tested.	No Joint Liability Groups are considered.
Target Clients	Farming households; households without collateral to offer.	Poor households: those getting less than 15 kg. of rice/person/month. These farmers must be permanent residents of the locality and voluntarily participate in self-help groups. Preference is given to priority areas such as mountainous areas, islands, ethnic minority areas.	Poor and hunger-stricken families: those families receiving less than VND 100,000 /person/month in the rural area (equivalent to less than 15 kg. of rice/person/month. For urban areas, the criteria is to have less an income of less than VND 120,000 /person/month.
Loan Size	The loan size is equivalent to total capital required minus household's own capital, but no more than 80% of collateral value. For uncollateralized loans, the maximum loan size is VND500,000.	Depends on investment but no more than VND2,500,000.	Maximum loan size is VND1.5 million.

	CREDIT LINE 499A (Less than VND500,00 per loan)	PREFERENTIAL FUND	BANK FOR THE POOR
Loan Duration	Short term: less than 12 months Medium term: less than 36 months Long term: more than 36 months. In practice, the loan duration depends on the production cycle and most of the loans are for 3 to 12 months.	Similar to the 499A credit line.	Not specified.
Loan Use	Short term: agriculture, livestock, small industry and handicrafts, trade. Medium term: annual crops, expanding cultivated areas, building ponds, repairing equipment, land purchase. Long term: industrial crops, equipment purchase or repair, construction, expansion or improvement of fields, hills, ponds.	Only for financing production-oriented activities and not for consumption activities.	Financing investment in production and trade; also for use for house construction, purchase of medicine and payment of school fees.
Loan Procedures	Loan application, borrowing passbook, and loan contract. Further paper work is required for collateralized loans.	Self-help groups are formed by mass organizations, hunger committees, or community leaders. Group draws up list of members and elects group leadership (1-3 persons). Local People's Committee approves list of group members and borrowers. The corresponding VBA branch investigates the loan application.	Local People's Committee proposes a list of households which meet the criteria of poverty and who could get a credit from the bank.
Repayment Schedule	Interest collected periodically (monthly or quarterly). Principal usually paid at the end of the loan term, especially for short term loans which are according to production cycle.	Interest paid monthly; in some cases quarterly. Principal paid at the end of the loan term; it can be paid in advance.	Interest paid monthly. Principal paid at the end of the loan term.

	CREDIT LINE 499A (Less than VND500,00 per loan)	PREFERENTIAL FUND	BANK FOR THE POOR
Interest Rate	Range from 2.1% to 2.7% per month. In mountainous and remote areas, interest rate is 15% less per year.	Interest rate is 14.4% per annum (1.2% per month). There is no consideration for reduction of interest rate for mountainous or remote areas.	For 1997, the interest rate was 9.6% per annum (0.8% per month)
Collateral/ Guarantor	Collateral is not necessary for loans under VND500,000, but borrower must have equivalent materials or services costs to be used as informal security. If a guarantor is used, this person must agree to repay the whole loan plus penalties in case the guaranteed loan defaults.	No collateral is required in principle; however, in practice, for some cases, collateral is required for loans larger than VND500,000 or VND1,000,000 depending on the borrower's project or credit risk. The group mechanism (peers pressure) is used for ensuring repayment of a loan obtained through the group.	No collateral is required. Group mechanism (peers pressure) is used for ensuring repayment of a loan.
Late Payments	If interest payment is missed, the borrower can pay the next period with no penalties. If more periods are missed, then the borrower is pressured to pay. If principal goes into the category of overdue (bad loan), interest charge is 150% and preparations begin for judicial proceedings.	If interest payment is missed, the borrower can pay the next period with no penalties. If more periods are missed, then the borrower is pressured to pay. If principal goes into the category of overdue (bad loan), interest charge is 150% and preparations begin for judicial proceedings.	Not specified.
Loan Rescheduling	One or many times up to a maximum of a production cycle. In case of loss due to typhoon, flood, drought, epidemic, etc., there can be a rescheduling up to one production cycle, plus supplemental loans.	One or many times, but can not be more than one production or business cycle and should not exceed 6 months. In the event of force majeure, the loan will not be considered overdue, and additional loans may be provided to help borrower to repay original loan.	Not specified.

Table Q.2.1 : Description of Main Characteristics of a Pilot Credit Project

ITEMS	DESCRIPTION	REMARKS
Duration Period of the Pilot Credit Project	6 years.	Including training period for VBA staff and initial time for organization of JLGs. This period is long enough to provide long-term loans and have adequate time for monitoring of the Project's development and introduce required adjustments.
Implementing Agency	Viet Nam Bank for Agriculture (VBA)	See Tables Q.2.2 and Q.2.3 for details about the implementation plan and costs, respectively.
Project Area	Nam Dan District	If this Pilot Project is successful then a similar project could be applied to other regions.
Total Cost for Project Implementation	a) Funds for Loans: VND65,000,000,000 b) Operational Costs: VND2,401,500,000 TOTAL: VND67,401,500,000	Calculated based on the assumption of 10,000 households with 5 family members each and a maximum loan of VND6,500,000 per household. The maximum amount was decided after consultation with VBA District Branch officers. See Table Q.2.3 for details.

<p>Purposes</p>	<ul style="list-style-type: none"> a) Agriculture, livestock, and fisheries: Crop development, farm machinery, equipment and implements, livestock farm development, fishing and fishing gear, livestock breeding and rearing, lumbering. b) Manufacturing and Processing Production equipment and machinery, food processing, merchandise manufacturing, construction of commercialization facilities c) Other production-oriented purposes It will depend on an agreement between the Joint Liability Group and the VBA. 	<p>Loans for consumption purposes will not be granted. Only loans for production purposes will be granted using the funds of the Pilot Credit Project.</p>
<p>Beneficiaries</p>	<p>Around 200 Joint Liability Groups (JLG).</p>	<p>A JLG can be constituted by 50 household representatives. The members should have common production activities in order not to create conflicts among members about the use purpose of the loans. The JLG must have a legal status, meaning that it must be registered with the District People's Committee and have by-laws which regulate the activities of the JLG. All type of loans using the Pilot Credit Project must be granted using the JLGs. No loan using those funds will be available for non-JLG clients. One of the advantages of using the JLG mechanism is that group members waiting to get access to loans will pressure those with outstanding loans to repay on a timely basis, so that they can get access to a loan.</p>

<p>Loan Conditions</p> <ul style="list-style-type: none"> - Maximum Loan Amount - Collateral - Interest rate 	<p>a) Individual Loan Provided Through Joint Liability Group: VND6,500,000. b) Collective Loan Provided to a JLG: VND525,000,000.</p> <p>Joint Liability Group's Collateral</p> <p>1.8% monthly: for short term loans (less than 12 months) 1.9% monthly: for medium term loans (less than 36 months) 2.0% monthly: for long term loans (less than 60 months)</p>	<p>In the case of the individual loan, a member of a JLG can receive a loan but it will be through the JLG who formally is the receiver of the loan from the Pilot Credit Project. In the case of the collective loan, the loan will be used for collective purposes which will benefit all the members of the JLG.</p> <p>For both types of loans, individual and collective loans, the collateral will be offered by the JLG. The collateral could be physical assets or land-use rights that the JLG members have agreed to be used as collateral by the JLG. The legal aspects of what is acceptable as collateral must be discussed beforehand between the JLG and the VBA.</p> <p>In the case of land-use rights to be used as collateral, it is important to note that the Government of Viet Nam should institutionalize the transferability of land-use rights in case of non-repayment of debts. The prevention of loss of use-rights would be the most important incentive to farmers to fulfill their obligations.</p> <p>The interest rate is higher than the one charged by the VBA at present (1.45% monthly and 1.5% monthly for short and medium term loans respectively; at present VBA does not grant long term loans). The reason is that the present interest rate is not high enough to cover operational costs of the VBA for granting loans. VBA District Branch officers as a rough approximation have suggested the proposed higher interest rate.</p>
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<ul style="list-style-type: none"> - Loan period 	<p>1 to 5 years</p>	<p>In the Pilot Credit Project, long-term loans (up to 5 years for repayment time) are proposed in order to cover the possibility of financing projects with long-time maturation.</p>
<ul style="list-style-type: none"> - Repayment Schedule 	<p>Interest paid monthly or quarterly depending on agreement between the JLG and VBA. Principal paid at the end of the loan term.</p>	<p>The repayment schedule will depend on the nature of the loan, project capability to generate income, and pay-back-period according to the cash flow of the intended project.</p>
<ul style="list-style-type: none"> - Rescheduling 	<p>It should not exceed 6 months. In the event of force majeure, the loan will not be considered overdue and additional loans may be provided to help the JLG to repay the original loan.</p>	
<ul style="list-style-type: none"> - Late payments 	<p>If interest payment is missed, it can be paid next period with no penalties. If more periods are missed, then the JLG is urged to pay. If principal goes into category of overdue, then interest charge is 10% monthly and legal procedures would start against the JLG.</p>	<p>When a loan goes into the category of overdue, all the members of the corresponding JLG will not be able to receive further loans from the Pilot Credit Project. If the JLG has defaulted loans more than 2 times, the right to get a new loan will be definitely cancelled.</p>

<p><u>Loan Disbursement and Collection Mechanism</u></p> <p>1) Alternative A</p> <p>2) Alternative B</p>	<p>Individual loans could be disbursed directly with a guarantee of a JLG. The bank does not need to carry out a deep analysis of credit worthiness, as it trusts the judgement and support of the JLG. The bank takes care of disbursement, accounting and monitoring. If the distance between the client and the bank's branch is great, then a field officer could take charge of these activities.</p> <p>A loan could be disbursed to a JLG, which on its own terms disburses loans to its members. The bank loan could be either a fixed amount on a fixed term or a credit in current account to refinance the total amount of loans to members. The Management Board of the JLG takes full responsibility on all aspects of the financing process: the analysis of creditworthiness, handling of application, disbursement, accounting, interest calculation and recollection.</p>	<p>It must be noted that this alternative would increase handling costs and risk of fraud and would require a higher interest rate to cover the higher risk.</p> <p>This alternative would reduce the handling costs of the bank. On the other hand, there will be costs incurred for group formation and, what is extremely important, for training of the JLGs' Management Boards plus recurring costs of guidance to these Management Boards. A rough estimation of group training for a period of 5 years is proposed for the present Pilot Project.</p>
<p><u>Revolving Fund Account</u></p>	<p>The repayments of the loans made through the Pilot Credit Project would go into a "Revolving Fund Account" from which new loans can be made. The "Revolving Fund Account" would be held at the Headquarters of the VBA. The control and supervision of these funds will be done through the direction of Managing Group of the Pilot Credit Project. The Managing Group will be conformed by the Headquarters, Provincial, and District Coordinators for the Pilot Credit Project.</p>	

Table Q.2.2 Description of Activities and Time Schedule for Operation of the Pilot Credit Project

ACTIVITY	DESCRIPTION	TIME
<p>1) Training of Headquarters, Provincial and District Level Coordinators (3 persons) and Field Loan Officers (10 persons) for the Pilot Credit Project (PCP)</p>	<p>The participants will be selected from the staff of the Viet Nam Bank for Agriculture or could be hired specifically for the PCP.</p> <p>The purpose of the training is to clarify the objectives and means of the PCP and the way of implementing it. A Consultant who has experience in the organization and implementation of rural credit projects will give the training.</p> <p>As the participants have already banking experience, the training should be concentrated on workshops and exercises in order to take full advantage of the know-how of the participants.</p> <p>The contents of the workshops and exercises would be as follows:</p> <ul style="list-style-type: none"> - Calculation of clients' need of credit - Assessment of credit-worthiness and capacity to fulfill obligations to the bank. - Explanation of the advantages of operating through Joint Liability Group (JLG) or group-loans concept. - How to promote and organize the formation of JLGs and how to instruct and advice the management of these groups. - How to structure the processes of decision making, disbursement, accounting, monitoring, recollection of debts. - Training on the relevant elements for the calculation of the profitability of loans to the JLGs. - Techniques for promotion of fulfillment of group-obligations by the JLGs. - Specification of the tasks for the District and Provincial Coordinators and Field Loan Officers for the implementation of the PCP. 	<p>1 month</p>
<p>2) Public information meetings with potential LGs members</p>	<p>Meetings will be organized with potential members of 10 JLGs (one for each Field Loan Officer) to inform them of the Pilot Project and encourage formation and organization of a JLG. The list of the potential members could be provided by the District's People's Committee.</p>	<p>2 weeks</p>
<p>3) Formation of a JLG and election of Management Board.</p>	<p>The JLGs will be formally organized and a Management Board consisting of a Chairman, Secretary, and Accountant for each group will be elected.</p>	<p>2 weeks</p>
<p>4) Training of JLGs' Boards</p>	<p>The JLGs' Management Boards will be trained by the</p>	<p>2 months</p>

ACTIVITY	DESCRIPTION	TIME
	<p>Field Loan Official in the following aspects:</p> <p>a) The objectives of the credit services to be given to the JLGs under the Pilot Credit Project.</p> <p>b) Procedures and techniques of credit supply through a JLG (assessment of credit demands, corresponding conditions, disbursement, monitoring of actions of members with regard to their business plan, accounting, collection of interest and repayments, actions with regard to overdue, collateral and cashing in.)</p>	
<p>5) Number of JLGs to Be Organized and Implementation Time for JLGs</p>	<p>Based on information obtained from the report of the Central Project Group for the "Program for Loan the Capital to Agricultural Development of Viet Nam Bank of Agriculture" [Literal transcription of Program's name in English given by the Bank for Agriculture and Agricultural Cooperatives], the number of households in the Nam Dan District willing to demand credit is around 10,000; therefore, if each JLG is conformed by 50 households, the potential number of JLGs to be implemented would be 200.</p> <p>After the first JLGs are fully operational, it could be expected that each Field Loan Officer could implement one JLG every month. It would mean, theoretically speaking, that there would be 10 JLGs implemented each month. It means that it would ideally take 20 months for the 10 Field Loan Officers to implement all the potential JLGs in the District.</p> <p>Therefore, the time schedule would be as follows: 4 months since the time that the start of the training of the JLGs trainers' (Field Loan Officers) and 20 months for organization, training and operation of all potential JLGs in the District.</p>	<p>20 months</p>

Table Q.2.3 Cost Estimation for a Pilot Credit Project

(UNIT : Viet Nam Dong)

ITEM	COST	REMARKS
TRAINERS' TRAINING COSTS		
Remuneration		
Trainer/Consultant (Local Consultant)	7,700,000	
Training Material		
Audiovisual material, documentation, etc.	5,200,000	Materials Cost per person is VND400,000
ORGANIZATIONAL COSTS FOR JLGs		
200 JLGs	110,000,000	Organizational costs per each JLG is VND600,000
EQUIPMENT		
10 Motorcycles	220,000,000	Cost per motorcycle is VND22,000,000
3 Computers	150,000,000	Cost per computer is VND50,000,000
Office equipment	11,000,000	Lump sum
Audiovisual and other training equipment/production	22,000,000	Lump sum
Communication equipment for Field Loan Officers	66,000,000	Lump sum
OPERATIONAL COST		
Remuneration		
3 VBA District Project Coordinator	129,600,000	Salary per each coordinator is VND1,200,000. They will work part-time for the Project. As the total Project period is 72 months, each coordinator will work for an equivalent of around 36 months.
10 Field Loan Officers	864,000,000	Salary per each coordinator is VND1,200,000. They will work full-time for the Project. Each Field Loan Officer will work for 72 months.

ITEM	COST	REMARKS
5 Clerical and Accounting Supporting Staff	126,000,000	The supporting staff can be provided by the VBA. This staff will be employed only part-time. The employment period will be for an equivalent of 30 months. Salary for each staff is VND700,000.
<u>Documentation (Loan Applications) Processing</u> 10,000 Loan Applications	200,000,000	It is assumed that there will be 50 applications per each JLG. As 200 JLGs are assumed to be organized with the Project, a total of 10,000 applications are expected. The cost for each application is assumed to be VND20,000.
<u>Transport Cost</u> Fuel	105,000,000	Fuel cost is assumed to be VND150,000 per month per each Field Loan Officer. This cost is applied for an total average of 70 month.
<u>Office's Running Cost</u> Communications, Office Material, etc.	385,000,000	Average monthly cost is assumed to be VND5,000,000. Total period to be covered is 70 months.
TOTAL FOR PROJECT IMPLEMENTATION COSTS	2,401,500,000	
TOTAL FUNDS FOR LOANS	65,000,000,000	
GRAND TOTAL FOR PILOT CREDIT PROJECT	67,401,500,000	

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