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Project Preparation Consultation Service

Social Impact Assessment
Ke Go Subproject

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Social Impact Assessment for Ke Go Subproject in VWRAP

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EXECUTIVE SUMMARY

Introduction
1. The Ke Go Subproject is located in north central Vietnam in Ha Tinh province and covers three districts/towns, Cam Xuyen, Thach, Ha Tinh, and 60 communes. This Social Impact Assessment is the result of a long process of social surveys carried out in preparation for Vietnam Water Resource Assistance Project (VWRAP). Some data has been collected from the provincial statistical department whereas other data have been collected by the Irrigation Management Council (particularly on affected people) in 2002 and 2003. Consultants have also carried out social surveys in 2003, and repeated consultations have been undertaken with the authorities at the provincial, district, and commune levels as well as with beneficiaries and affected farmers.

Social Assessment
2. More than three hundred thousand people (307,158) will benefit from the project. All the people in the area are of the majority Kinh ethnic group, and above ninety percent are Buddhists, but the inhabitants do not have strong religious practices.

3. Farming is far the most common source of income (77.5%) in both rural and urban Subproject areas. The structure of the labor force is remarkable similar for rural and urban areas in spite of the expected slightly higher frequency of occupations in commerce, services, industrial labor, and transport in the urban areas. The three areas have also experienced a relatively high economic growth rates particularly in telecommunication and industries but also in agriculture, forestry, and commerce.

4. The majority of the people in the affected areas are in the lower-middle income brackets of VND 100.00-1999.000 although the number of poor varies in the three districts between 7.6% in Ha Tinh and 22.4 in Thach Ha. The average income for the surveyed poor households was VND 64,000/capita/month. According to one source there was 48 poor communes in the province. Among the surveyed the average landholding of poor households was 300m² smaller than the average for the area (565m²/capita compared to 865m²/capita). The poor perceived their situation as a result of lack of investent capital for cultivation and domestic animals; unemployment, particularly among those engaged in (temporary) salary works; lack of household labour or having a family member with chronical sickness.

5. Among the poor households, 10% was female headed, single mothers or widows having children who had been wounded by war (or mines) or being themselves war-wounded, and some women bought up children other than their own because of insufficient parental or public care.

6. Standard of living had increased (almost) steadily over the last five years. Food security had gone up. Education had increased dramatically and there was almost total school enrollment in primary education. The area had been nominated as a model for its primary education, but girls were still lacking behind particularly in secondary and higher education.

7. According to the Women’s Association there was a high frequency of infection diseases among women caused not only by unclean water but also from unsafe labor tools. Sexual transmittance diseases were rarely found in the rural areas, but a small percentage was
found in urban areas. In upland communes, malaria, dengue fever and thyroid inflammation were found. Health posts and other social infrastructure facilities were also available in the area such as telecommunication and post offices, which were often used as a cultural center.

Direct Resettlement Policy Effects

8. The Subproject will affect 15,067 people in three types of assets: land losses, dwelling and houses, and trees and crops. No people will have to be relocated and none will lose more than 20% of their landholding. None will have their business area or business capacity lost entirely. Some households with main dwelling houses and secondary structures built close to canal banks will be affected. However, the losses are considered insignificant although it affects a large number of households. Other properties affected will be: (i) agricultural land, of which most are temporarily occupied; (ii) residential land which are mostly temporarily occupied for the construction; (iii) trees and crops which are annual crops such as rice and vegetables; (iv) some public structures such as rural transport roads for purpose of material transferring; electricity line; civil bridges; but (v) no cultural structures will be affected by the subproject.

Consultation with Farmers: short term effects

9. Farmers recommendation concerning water closing for construction to take place from the end of September to the end of December (3 month) during which they preferred a temporary reopening of 10 days from October 20.

10. During Subproject implementation there might be concentration of large number of workers which could have negative influence on security and social stability of communities and it may increase the price for some commodities/goods on the local market. The closure of water service during the construction might not only have an impacts on water supply for crops but also influence the domestic water supply. After the completion of construction, the local people might suffer from transport disturbance on the road (soil, waste of construction) and pollution in the local environment. Construction could disturb the movement of local people across the channels and change the location of electrical lines for local people. Finally there might also be some negative influence on air quality at the population centers due to transportation of construction material.

Previous experience with relocation of people

11. Before the construction of the Ke Go reservoir, the site was a wilderness mountainous area without population. Only three households were relocated when the scheme was originally constructed between 1976-1988. Of these 3 households one had moved to Ha Tinh Township and made a living with a candy production business. Two other households were resettled near the reservoir and develop their commercial farms there. These households had now children who had become government staff, and several of them had moved to Ho Chi Minh City. Thus all resettled households due to reservoir construction had restored their income source, and the Project does not need to support them

Farmers Perspective of Advantages Related to the Subproject

12. First, infrastructures in the localities are adequate, rural roads can be used year round, electricity, telephone line are available, along with schools, health centers and Commune Peoples' Committee offices. These facilities are mostly rebuilt or in the process of renovation.

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1 A full record of resettlement policy effects is documented in the Resettlement Action Plan for Ke Go.
Second, the local peoples have expressed willingness to participate in the Sub-project and especially the poor, women and other vulnerable groups would like to have appropriate jobs to earn cash income. They are also ready to participate in water management activities when the Subproject is completed and after receiving some necessary training for the handling of a modern irrigation system. Third, local peoples and community leaders as well as commune government agreed to actively contribute with the assistance of the government in the renovation and upgrading of the system of 3rd class and intra field canals. They requested the government to support material and technical assistance, and they could organize to receive material, to contribute labor in construction, and monitoring without compensation.

13. For affected households who would loose much of their land, the commune Peoples' Committees would arrange the compensation from the reserve land of 5% currently managed by the commune Peoples' Committees. Communities were committed that they would support households who had to move their house for the construction of the system by contributing labor days and money.

14. At present, all canals have their protection corridors. In principle, land in the corridors can not be allocated permanently but can be hired temporarily. In this case, if affected by the construction of the system, compensation would be based on the properties on these land (e.g. trees, crops etc.) but not on the land. In special cases if these lands were allocated permanently, the commune Peoples' Committees would arrange for compensation.

15. Local peoples supported the idea to utilize the market mechanism in payment for water. They only wanted to pay for the water they actually received. The present system had been open to financial mismanagement and violation, and the farmers had lost trust in some of their representatives.

16. Farmers were ready to pay water fees at a higher rate than the current rate. After the irrigation system had been modernized farmers envisioned that they would be able to pay more under the condition that the system could ensure irrigation and drainage on time in all seasons, and the new management mechanism was established so they could exercise their ownership on the part they have contributed.

17. Local peoples and communities wanted to establish Water User Associations. Farmers wanted to select their own representatives, who would be responsible for managing and distributing water and be capable to directly sign contracts with IMC. The representatives should also facilitate the users to have an easy access to monitoring and checking their contribution concerning irrigation fees and financial management.

A Concern

18. Only one issue might be of particular concern in relation to the World Bank policy on resettlement. Much of the 5% land referred to as reserve land was currently used under a temporary arrangement. It is recommended that the detailed measurement survey (DMS) should focus on the social impact for the present users from loosing this land. If land acquisition looses will reduce the income of these affected farmers they should be compensated in order to avoid contribution to poverty generation.
1. INTRODUCTION: THE SCHEME AND THE AREA

1. The Ke Go Subproject is located in north central Vietnam in Ha Tinh province and covers three districts/towns, Cam Xuyen, Thach, Ha Tinh, and 60 communes. The reservoir is located in Cam Xuyen district approximately 20 km south of Ha Tinh Town and serves an area north and east of the reservoir. The 2,100kw hydropower station was constructed between 1976 and 1988. A number of problems were incurred during the operation of the station, which unacceptably impacted upon the end use of the water for irrigation (e.g. contamination of irrigation with hydraulic oils and unacceptable leakage through conduits joints). Because of insufficient maintenance, engineering works have degraded rapidly and seriously in recent years. Seepage through the body and foundation of the dams has been an ongoing problem. Dam toe seepage may reduce dam strength as well as create an artificial wetland environment immediately downstream of the dam. In addition, the conduit spillway experiences significant leakages through the conduits joints, resulting in approximately 200l/s inundating the inspection barrel. The problem of conduit leakage was addressed in 1991 and 1993 and involved grouting and covering of the joints with steel plates but these remedial measures had no positive effect. The canal system has experienced ongoing problems of erosion, sediment, and canal seepage, and the canal regulating structures have been poorly maintained and are now in poor condition.

2. In contrast all communes in the Sub-project area have well-developed infrastructures for the community life, with the Commune People's Committee offices, electricity, rural roads, schools, health centers and Cultural Post offices. Offices of Commune People's Committees, health centers, primary and secondary schools are newly built, replacing the old constructions, which were built in the period of the centralized economic system. The rural road networks have been upgraded and expanded. Almost all roads to commune centers are asphalted. Roads connecting villages and hamlets have also been paved with the contribution of local villagers and partly supported by the local government. The Cultural-Post offices at commune level are actually becoming places for communication, exchange of information and other cultural activities.

2. SOCIAL ASSESSMENT

2.1. Population, Ethnicity and Religion in the Subproject Areas

3. The total number of beneficiaries is 307,158 and the number of persons to be affected by the Subproject is expected to be 15,067. The Subproject covers three different landscapes: the plain with 193,614 persons (77.5%), the coastal area with 15,458 persons (6.2%), and the upland mountain area with 40,908 persons (16.4%). A detailed table of beneficiaries and effected people, including the sample area, is shown in Appendix 1.

Table 1: Households and Population Growth in the Subproject Area

<table>
<thead>
<tr>
<th>District</th>
<th>Households</th>
<th>Persons</th>
<th>Persons/HH</th>
<th>Natural Increment</th>
<th>Population Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cam Xuyen</td>
<td>28,956</td>
<td>122,669</td>
<td>4.2</td>
<td>10.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Thach Ha</td>
<td>30,153</td>
<td>127,009</td>
<td>4.2</td>
<td>9.3</td>
<td>0.8</td>
</tr>
<tr>
<td>Ha Tinh Town</td>
<td>5,443</td>
<td>57,480</td>
<td>10.6</td>
<td>8.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>64,552</td>
<td>307,158</td>
<td>4.8</td>
<td>9.3</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Source: See Appendix 1.

The numbers in this Social Impact Assessment refers to data available as of June 2003 and reflects the technical design at that time.
4. The natural population increment was high for all areas with the number of women with more than two children being around twenty five percent (one in four). The most surprising, however, is that the urban area Ha Tinh has more people per household than the rural areas in Cam Xuyen and Thach Ha. One explanation may be that old people move to the township to get more services, but it is hardly the whole explanation. If this reflects crowded houses or a different way of defining households in the rural areas is not known. But a household with more than ten persons is rare for an urban population elsewhere.

5. Table 2 shows that population density in the urban area is lower than in the total Subproject area (3,125 as compared with 3,439 persons per sqkm) which is somehow contrary to data provided in table 1 above. It might be a consequence of habitation where population density is lower along the canals to be affected than in the general area. In contrast, population density in the plain area of the Subproject is higher than the total Sub-project area in general (562 as compared with 543 persons per sqkm). Population density in other zones do not differ much between the benefitted communes and affected communes.

<table>
<thead>
<tr>
<th>Table 2. Population Density in 2001: Benefited and Affected Subproject Areas (Unit: persons per sqkm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Benefited</td>
</tr>
<tr>
<td>Affected</td>
</tr>
<tr>
<td>Source: See Appendix 1.</td>
</tr>
</tbody>
</table>

6. As in other lowland areas in Vietnam, the population in the Subproject area is concentrated in traditional villages and communities. However, there is a trend of change to this traditional life as a part of the population move to live along the roads or join new commercial centers to seek new sources of income from business activities and to supplement their income from agriculture. The landscape of the rural area has been changed, which reflect an improvement in both economic and socio-cultural life of the communities. Red tiled roof houses under the green canopy of the home-gardens have replaced traditional houses with palm leave roofs in this rough climate zone.

7. All inhabitants to be affected by the Sub-project belong to the majority ethnic group, the Kinh people. There are no ethnic minorities in this area. Religiously around ninety percent of the population follows Buddhism, although religion does not seem to play a major role in people's life. The remaining follows Catholic, especially in the district of Thach Ha, the proportion of population following Catholic reaches 13%, while in Cam Xuyen, this proportion was 3 to 5%. In Ha Tinh township the high proportions of Catholics were recorded in communes of Thach Trung, Thach Yen, Thach Quy and Thach Hoa (12-15% of the commune population). In the Mau Canal, there is a commune with 2 households (8 persons) following Catholicism (the commune of Thach Binh in Thach Ha District, belonging to the area of the Canal N3-N5).

2.2. Income and Economic Structure

Labour Force:
8. Beneficiaries in the rural areas are mainly farmers (pure farmers), producing wetland rice, vegetables and other crops. Livestock in smallholder farming systems is also a way to generate additional income for daily living and to obtain cash for purchasing agricultural input like fertilizers, pesticides and seeds.

9. From the perspective of water resources beneficiaries in both urban and rural areas need water for cultivation. An average of 78% of the total labor force derives their main income from agriculture. The difference between rural and urban population is remarkable small when it comes to the structure of the labour force. The urban population supplement income from non-agricultural sources and have a higher frequency of vegetable production and fruit trees in their home-garden while the rural population on the plain cultivate more wetland rice and aquaculture (4.6%), and in the upland have more forestry (1.4%). But both need water to maintain water level in the wells, which provide water for domestic uses, especially in areas where tap water from treated water plants are not available. Otherwise table 3 below shows the expected difference between the urban and rural areas where the urban areas have more people engaged in commerce and services (15.1%) industries and handicraft (6.3%), and transport 3.

Table 3. Structure of Labor Force Subdivided by Urban and Rural Subproject Areas

<table>
<thead>
<tr>
<th>All the Sub-project area (%)</th>
<th>Rural (%)</th>
<th>Urban (%)</th>
<th>All the Sub-project area (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/ Production sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1- Agriculture</td>
<td>94.2</td>
<td>68.8</td>
<td>77.5</td>
</tr>
<tr>
<td>2- Forestry</td>
<td>1.4</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>3- Fisheries</td>
<td>4.6</td>
<td>0.1</td>
<td>3.6</td>
</tr>
<tr>
<td>4- Industries/handicraft</td>
<td>3.8</td>
<td>6.3</td>
<td>4.3</td>
</tr>
<tr>
<td>5- Construction</td>
<td>1.1</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>6- Transport</td>
<td>1.0</td>
<td>4.0</td>
<td>1.7</td>
</tr>
<tr>
<td>7- Commerce-Services</td>
<td>2.4</td>
<td>15.1</td>
<td>5.2</td>
</tr>
<tr>
<td>II/ Non production sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9- Resettlement</td>
<td>5.8</td>
<td>5.7</td>
<td>5.8</td>
</tr>
<tr>
<td>10- Science and technologies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11- Education and training</td>
<td>3.9</td>
<td>4.1</td>
<td>3.9</td>
</tr>
<tr>
<td>12- Culture – Art</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>13- Health, Social Assurance, Sport</td>
<td>0.4</td>
<td>0.6</td>
<td>0.5</td>
</tr>
<tr>
<td>14- Finance – Credit</td>
<td>0.2</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>15- State Management</td>
<td>1.1</td>
<td>0.5</td>
<td>1.0</td>
</tr>
<tr>
<td>16- Others</td>
<td>0.1</td>
<td>0.3</td>
<td>0.1</td>
</tr>
</tbody>
</table>


Economic Structure:

10. Turning to economic structure and value, agriculture is still dominant in the rural districts Cam Xuyen (73%) and Thach Ha (77%) but is far less in Ha Tinh township (24.5%).

3 For example: In 2002, the Cam Xuyen district town had a total of 2,073 households in which there were 929 non-agriculture or semi-agriculture households (or 45%). The following are their non-agriculture livelihoods: handicraft: 121 households or 5.8%, construction: 32 households or 1.5%, commerce and services: 737 households or 35.5%, and transport 39 households or 2%.
In the township commerce and services (30.1%), construction (19.2%) and industries and handicraft (18.9%) are more dominant as shown in table 4 below.

**Table 4. Structure of Production Value According to Sector in 2001**

(Based on fixed price 1994. Unit: Million VND)

<table>
<thead>
<tr>
<th>Localities</th>
<th>Cam Xuyen District</th>
<th>Thach Ha District</th>
<th>Ha Tinh Township</th>
<th>Total Sub-project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sectors</strong></td>
<td>Value (%)</td>
<td>Value (%)</td>
<td>Value (%)</td>
<td>Value (%)</td>
</tr>
<tr>
<td>I/ Agriculture, forestry and fisheries</td>
<td>370265 73.0</td>
<td>336430 77.0</td>
<td>33142 24.5</td>
<td>739837 68.6</td>
</tr>
<tr>
<td>1. Agriculture</td>
<td>287627 56.7</td>
<td>286626 65.6</td>
<td>31854 23.6</td>
<td>606107 56.2</td>
</tr>
<tr>
<td>2. Forestry</td>
<td>36560 7.2</td>
<td>4894 1.1</td>
<td>695 0.5</td>
<td>42149 3.9</td>
</tr>
<tr>
<td>3. Fisheries</td>
<td>46078 9.1</td>
<td>44910 10.3</td>
<td>593 0.4</td>
<td>91581 8.5</td>
</tr>
<tr>
<td>II/ Industries-Handicraft</td>
<td>35326 7.0</td>
<td>49191 11.3</td>
<td>25466 18.9</td>
<td>109983 10.2</td>
</tr>
<tr>
<td>III/ Commerce - Services Restaurant</td>
<td>66540 13.1</td>
<td>9960 2.3</td>
<td>40660 30.1</td>
<td>117160 10.9</td>
</tr>
<tr>
<td>IV/ Transport</td>
<td>8324 1.6</td>
<td>6095 1.4</td>
<td>9922 7.3</td>
<td>24341 2.3</td>
</tr>
<tr>
<td>V/ Construction</td>
<td>24430 4.8</td>
<td>35013 8.0</td>
<td>25890 19.2</td>
<td>85333 7.9</td>
</tr>
<tr>
<td>VI/ Post and Telecommunication</td>
<td>2410 0.5</td>
<td>0.0</td>
<td>0.0</td>
<td>2410 0.2</td>
</tr>
<tr>
<td></td>
<td>507295 100.0</td>
<td>436689 100.0</td>
<td>135080 100.0</td>
<td>1079064 100.0</td>
</tr>
</tbody>
</table>


**Production Development Rate:**

11. Production Development Rate of all economic sectors in the Subproject area increased 7.32% from 2000 to 2001 (based on fixed 1994 prices). Industries and handicraft sector had the highest increment (10.66%) which correspond to the increasing migration to commercial centers. But agriculture(9.28%) and forestry (6.66%) also had high increases followed by services and commerce (5.04%). In the two districts of Cam Xuyen and Thach Ha Production Development Rate increased 7.37% between 2000 and 2001 (0.05% higher than the figures of the Sub-project area). However, in 2002, production value of the construction sector in these two districts decreased 1.21%. Post and telecommunication sector increased most dramatic in Cam Xuyen District, but data from Thach Ha District (as well as from Ha Tinh Township) were not available.

12. In the urban area of Ha Tinh Township production values of all other sectors increased. The only exception was a decrease of 17.32% in the production value of transportation sector in 2001 as compared with the year 2000. The highest increase was in construction (12.57%), followed by industries and handicraft (8.95%). Although forestry and fisheries had relatively high rates (2.6% and 5.79%), the absolute values were low (695 and 593 million VND). Agriculture and services - commerce had the lowest rates (1.72 and 1.57%).
Table 5. Development Rates of Production Values
(Based on fixed price, 1994- previous year = 100%)
Unit: million VND

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Cam Xuyen District</th>
<th>Thach Ha District</th>
<th>Ha Tinh Township</th>
<th>Average of Sub-project area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 2000</td>
<td>Year 2001</td>
<td>Rate (%)</td>
<td>Year 2000</td>
</tr>
<tr>
<td>I/ Agriculture, forestry and fisheries</td>
<td>348413</td>
<td>370265</td>
<td>106.27</td>
<td>303276</td>
</tr>
<tr>
<td>1. Agriculture</td>
<td>268308</td>
<td>287627</td>
<td>107.20</td>
<td>255006</td>
</tr>
<tr>
<td>2. Forestry</td>
<td>34087</td>
<td>36560</td>
<td>107.25</td>
<td>4752</td>
</tr>
<tr>
<td>3. Fisheries</td>
<td>46017</td>
<td>46078</td>
<td>100.13</td>
<td>43518</td>
</tr>
<tr>
<td>I/ Industries-Handicraft</td>
<td>31375</td>
<td>35326</td>
<td>112.59</td>
<td>48261</td>
</tr>
<tr>
<td>III/ Commerce - Services Restaurant</td>
<td>62220</td>
<td>66540</td>
<td>106.94</td>
<td>9870</td>
</tr>
<tr>
<td>IV/ Transport</td>
<td>7518</td>
<td>8324</td>
<td>110.72</td>
<td>5918</td>
</tr>
<tr>
<td>V/ Construction</td>
<td>27057</td>
<td>24430</td>
<td>90.29</td>
<td>33113</td>
</tr>
<tr>
<td>VI/ Post and Telecommunication</td>
<td>2160</td>
<td>2410</td>
<td>111.57</td>
<td>2160</td>
</tr>
<tr>
<td>Total</td>
<td>478743</td>
<td>507295</td>
<td>105.96</td>
<td>400438</td>
</tr>
</tbody>
</table>


2.3. Land Holding and Production Output

13. Per capita cultivated area in the Subproject area was 863 m2/person, of which wetland rice was 620 m2/person; home garden and other cultivated land was 243 m2/person. Compared the total cultivated areas of the two rural districts, Cam Xuyen and Thach Ha, with the average cultivated area of the benefitted area, it was 54 m2/capita higher (863 compared with 808 m2/capita). If we compare each districts, the respective figure for Cam Xuyen was 102 m2/capita and Thach Ha 17 m2.

2.4. Standard of Living

14. Turning to the survey area (see Appendix 1) the level of income vary considerably in the project area as shown in Table 5 below. Based on the Ministry of Labor Invalids and Social Affairs classification, four income-level categories have been identified in the area.

(i) Category I: The poor-income per capita is < D100,000/month.
(ii) Category II: The low-income per capita is from D100,000-D199,000/month.
(iii) Category III: The well-off-income per capita is from D200,000-D399,000/month.
(iv) Category IV: The wealthy-income per capita is > D400,000/month.
Table 6: Levels of Monthly Income in Surveys Areas

<table>
<thead>
<tr>
<th>Project Components</th>
<th>Category I (&lt; D100,000 per month)</th>
<th>Category II (D100,000-D199,000 per month)</th>
<th>Category III (D200,000-D399,000 per month)</th>
<th>Category IV (&gt; D400,000 per month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of HHs</td>
<td>10</td>
<td>59</td>
<td>42</td>
<td>10</td>
</tr>
<tr>
<td>Average</td>
<td>8.3</td>
<td>48.8</td>
<td>34.7</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Source: Socioeconomic survey 2002.

15. Table 5 shows that the number of household in the poor and the wealthy end of the income scale are equal with 8.3% of the total in this much smaller sample. The majority of the population, however, are in the low-income bracket (48%) compared to the more well-off (34%).

16. Out of 102 project-affected people surveyed, 99% of the households (HH) used electricity for lighting, only 1% used battery. All of them have own, but simple latrine toilets, 88% HH use water derived from earthen, and 16% use pumping wells. The majority of the HH surveyed (85%) had TV, 50% has radio or radio/cossets, but only 2 HH had a motorbike.

**Food Security**

17. Food production per capita in rice equivalent in the benefited zone of the Subproject area had substantially increased since the Ke Go Irrigation System was built in 1976. In the recent 5 years (except the year 2000, due to calamities) the increase in rice yield was:

Table 7. Increase in Food Production in Rice Equivalent

<table>
<thead>
<tr>
<th>Year</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Increase</td>
<td>398</td>
<td>482</td>
<td>450</td>
<td>472</td>
<td>508</td>
</tr>
</tbody>
</table>

Average yield in the benefitted zone of the Subproject in 1998 was 3,608 kg/ha, increased to 3,898 kg/ha in 2000; 4,039 kg/ha in 2001; 4,160 kg/ha in 2002. The annual increment was 138 kg/ha/year.

2.5. **Education**

18. Ha Tinh Township was the first administration unit to be recognized as a primary education model and later, the recognition was extended to Cam Xuyen and Thach Ha districts. In 2002, the ratio of student passed primary school examination was 95.3-97.8% which is almost total school coverage. Education and training has been developed with a strong support and investments from the Government. Education level of household heads in the zone of the Sub-project was 5 years of schooling in the 12 year system, which shows a dramatic increase in school attendance among the younger generation.

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4 According to Statistical Yearbook of two districts Cam Xuyen and Thach Ha, in 2001, annual rice yield in Cam Xuyen was 4258 kg/ha, higher than in Thach Ha (3820 kg/ha).
2.6. Health

Illnesses
19. Fever, headache, eye problems, reproductive organ infection in women were among the most frequent illnesses in rural communes on the plain area. According to the local Women Union, the situation of high rate of infection diseases in women was caused by not only water, but also from unsafe labor tools. Sexual transmittance diseases were rarely found in the rural areas. In upland communes, malaria, dengue fever and thyroid inflammation were found, affecting the people. In urban communes, health problems included sexual transmittance diseases (2.29%); women's reproductive organ infection diseases (2.02%); digestive problems (1.7% of which children were 0.9%); and eye inflammation (0.16%).

Access to clean water and environment hygienic facilities:
20. Clean Water: The ratio of households in the rural area with access to clean water was only 42% in the rural area. In the communes, about 80% of households used water from shallow wells, 10% from deep wells (UNICEF style), 10% used rain water or water from ponds, lakes and canals. Water quality from the later sources were not safe and usually it was contaminated with bacteria, sulfates or other pollutants, especially in the Summer.

21. In district town and provincial township, the number of households using clean water was 100%, in which 50 - 80% used water from treatment plan; 20 – 50% used water from wells constructed by the UNICEF program.

22. Toilets: In rural areas, 85 to 90% of households used one or two compartment toilets, 10 to 15% used self decomposing or semi-decomposing toilets. The ratios in the urban area (district towns and Ha Tinh Township) were 40 and 60%, respectively.

2.7. Gender

23. In many respect there was gender equality although the division of labour, and the renumeratio for the different activities, disadvantaged women. Local women take part in most of socio-economic development programs in the localities. They also played an important role in the daily life of community, especially in the movements of 'Growing healthy and well educated children', 'Eradication of hunger, poverty alleviation and creating jobs'; programs ‘For the advancement of women’, Gender equlity, Reproductive health, Caring adolescent, and so on.

24. The people in the Subproject area have actively carried out the provincial programs on poverty alleviation, elimination of poor, and the rainy-wet temporary houses. That was a competition movement reffering to solidarity. In the movement, the communal Women's Unions formed credit groups for alleviating poverty. Each group had from 8 to 12 persons under leadership of the Women’s Union. By the help of this program the poor members got out of poverty with the help of the community which in return gave prestige to the group. The model has been reported as a case study to be reproduced in the country as a whole.

Division of labor by gender
25. In the field women undertake planting and caring ofrice, spraying insecticide, harvesting, removing, drying, keeping and selling. Men take mainly worked the land, spraying insecticide, harvesting, training/learning scientific methods. The percentage of sharing work in the field between men and women was 40% and 60% respectively. Raising cattle and
poultry were mainly done by women, and women’s involvement was about 90% while men only contributed 10%. Housework was still the duty of women. Men and women shared this work respectively 10% and 90%. Caring and bringing up children was consider a mother’s heavenly mandate. As for tutor of children in doing homework, husbands take a part because they have higher level of education than wives (especially in rural areas) on the one hand, and wives press husbands to do that on the other hand. Therefore, women have less leisure time than men.

26. However, women are eager to participate and water management and delivery is one of such examples. In the future, the sub project may create job opportunities for women in the process of implementation, in particular when canal system has been upgraded and modernized. Since the situation of canals at present are degraded women cannot participate in water management and delivery because of the hard work. Furthermore, the work often have to be done in the night, which was not considered appropriate for women.

2.8. Poverty and Vulnerable Groups

27. According to IFAG there were 48 poor communes in the whole province. In the Subproject area the poor counts for a considerable part of the population (from 7.6% to over 22%) as shown in table 6 below.

Table 6. Poor Households in Subproject Areas in 2002

<table>
<thead>
<tr>
<th>Poor Communes</th>
<th>Total poor households</th>
<th>Poor households as % of total population</th>
<th>Change in poverty rate from 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cam Xuyen</td>
<td>4*</td>
<td>4,882</td>
<td>13.3</td>
</tr>
<tr>
<td>Thach Ha</td>
<td>16</td>
<td>10,387</td>
<td>22.4</td>
</tr>
<tr>
<td>Ha Tinh</td>
<td>0</td>
<td>414</td>
<td>7.6</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>15,683</td>
<td>17.4</td>
</tr>
</tbody>
</table>

* of which 3 were outside Subproject area.

28. Poor households lived in bad cogon grass houses occupied by 13-15% in Cam Xuyen District. The average cultivated land per capita among poor households was 300m² lower than the general average (565 m²/capita as compared with 863 m²/capita or 65.5% of the general average in the region). Average income per capita of poor households was 64,000 VND/capita/month.

29. Due to the absence of ethnic minorities in the area, a large fraction of the poor were single headed households and women. The poor argued the reasons for their poverty was lack of investment capital for cultivation and domestic raising of animals; unemployment, particularly among those engaged in (temporary) salary works; lack of household labour or having a family member with chronical sickness. Among the poor households, 10% was female headed, single mothers or widows having children who had been wounded by war (or mines) or being themselves war-wounded. There was 32 out of 1.484 staff of the Women’s Union, who brought up children without husbands due to a lot of reasons such as diseases, dead husbands or been killed by the war, or handed over by their parents. These vulnerable

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5 According to the report of the Cam Xuyen District People's Committee the reasons were i) lack of capital (34%); ii) Sick (34%); iii) Lack of production experience (29%); iv) Lack of land (29%); v) Lack of labors (16,6%); vi) Social problems (0,6%).
groups expressed a wish to participate in the sub-project in order to earn cash income. Participation for them was a chance to access capital needed for develop household's livestocks and improve their standard of living.

**Unemployment**

30. Thank to science and technology advancement in the rural and particularly in agriculture productivities of crops and livestock have increased with the application of better farming practices, new varieties and breeds, fertilizers and pesticides. Production cycles have also been shortened. This has increased the time available to farmers as well as for young people, who cannot get into training or employment. The labour market cannot absorb the increasing number of students graduating from highschool. Thus, we used the terms "temporarily lacking of job" and "permanently lacking of job".

31. According to assessments of the district Peoples' Committees in the Sub-project area, there were in 2002, 19-20% "temporarily lacking of job" and 10-11% "permanently lacking of job". The results of the community consultation in the Subproject area indicated that on average, farmers has 3-4 months lacking of job per year, even where multiple cropping (up to 3 crops, 2 rice crops and a winter crop, per year) had been practiced. Farmers in areas where the winter can not be applied (due to water shortage), the figure would be even higher. To farmers, the problem was to find a job during this period. This was also an important reason to explain the migration from rural to urban areas.

2.9. **Social Organization**

32. In all communities of the Sub-project area cooperatives at village or commune level existed before 1994. At that period, the life of local villagers depended on the cooperatives much more than local government authorities, simply because the cooperative managed from food to clothes and from rice to cash money of its members. Productions were collective and incomes were distributed according to a score system. Leaderships of the communes were also based on the cooperatives. With decollectivisation, the commune People's Committees have taken over State management and directly manage the villages in both administration and production.

33. Since 1994, this style of cooperative had been changed. A new cooperative mechanism based on businesses was developed. Cooperatives providing agricultural services such as supplying improved breeds, fertilizers, pesticides and irrigation water (or everything that could sell to farmers) were established. However, cooperatives for services that can have a motivational role in production development (e.g. market development or processing of agricultural products) had not been developed. The development of the new style of cooperatives, including the provision of water in the Sub-project area, had received supports from local households. However, in general, due to lack of experience, their businesses efficiency was still rudimentary. For instance, in Cam Xuyen district of the total 29 new style cooperatives, 4 had stopped their businesses, 10 had a good income, 6 were ranked as average, and 9 were ranked as weak. These cooperatives included 7 providing agricultural services, 2 working in saving and credit, 1 producing handicraft, 2 working in environmental hygienic services, 2 producing construction materials, 1 working in construction and 14 working in fishing and sea product processing.
2.10. Development Priorities

Land splitting was a problem
34. At present, after successfully implemented in several pilot communes, districts/town in the province have actively realized a "Program on Agricultural Land Zonning To Serve Land Exchange" in all communes. The objective was to improve the situation of land management, avoiding the splitting of fields, based on the negotiation and exchange of lands among households. The initiative had been implemented with difficulties, due to the difference in land classes, soil fertility, capacity of generating income as well as accessibility to irrigated water. If properly implemented, the program could support the process of restructuring cropping system and the application of advanced agricultural technologies. With the modernization in the irrigation system, difference in the irrigation feasibility could be overcomed, land exchange could create favorable condition for production management.

Government support
35. Beside, a program relating to agricultural sector was the "Concretization of canals". It had been implemented in different districts of the province and especially in the Sub-project area, under a scheme of "The State and Local Peoples Work Together". Contribution was share between the State and Local Peoples at the ratio 50/50%. Investment from national budget was allocated from the local government (province). Implementation of this program was also facing difficulties as capital allocation for investment could not be actively managed, especially on the side of local peoples' contribution. Beside, investment from national budget was based on preliminary cost estimation without considering additional or emergency costs and the program could hardly increase the contribution from local peoples. To overcome these difficulties, as the design could not be changed, local government has to work together with the contractor exploiting local materials to reduce material cost.

Positive results of the canal
36. Water for irrigation was one of the most important resources to farmers in all communes of the Subproject area. Before 1976 agricultural production in the area was based on rain-fed system. Since 1976 the production has been more active with the utilisation of water from the Ke Go Irrigation system. In some communes in the plain zone (such as commune of Cam Thanh, Cam Xuyen District) 98% of the cultivated area was irrigated with this system, in which 67% of the area were actively being irrigated, 31% irrigated with secondary sources (by water from the system). There were only 2% rainfed, due to topographical constraints. With the irrigation system, water demand and rice yield increased, from 1 ton/ha in the years before 1976, to 4.8-5.0 tons/ha at present. The reduction of input cost also became crucial for households, especially cost for fertilizers, pesticides and seeds. Production cost (not including labor) consisted 30% total production value in rice cultivation. Now the farmers look forward to improvement of the irrigation system including the drainage system.

Farmers long term view
37. Apart from canal upgrading farmers mentioned difficulties, which could be summed up as a lack of supplementary cash income, particularly among young graduates due to underdevelopment of local craftmanship and markets. Production development was prioritized according to 3 main issues:
   - Intensification of rice and annual cash crops (e.g. groundnut and beans)
   - Aquaculture
   - Tourism and commerce.
3. CONSULTATION, INFORMATION DISSEMINATION, AND PARTICIPATION

3.1. Committed to Implement the Project According to World Bank Policies

38. After receiving information on: (i) General contents of the Project at the national level, including the component on "Modernization of water resource systems" which covers the Ke Go system as a sub-project; and (ii) Policies of the World Bank (WB) regarding resettlement, environment and ethnic minorities, all local government authorities were committed to implement the sub-project strictly following the World Bank policies.

A. Consultation with Provincial People's Committee and MARD

39. The provincial People's Committee stated that: (i) The objectives of the project are relevant with the general goal of the Province's Socio-economic Development Plan and Development Orientation to the year 2010. (ii) The provincial People's Committee was ready to receive the project, committed to follow WB policies and would make its best to implement the project. (iii) The province has experience in successfully implementing projects using credits from international institutions, including the WB. They had experiences in compensations, site clearance and resettlement. (iv) For counter capital, provincial budget can contribute about 20%, and the remaining should be supported from the central government budget. However, as local people livelihoods were still difficult and the provincial budget limited, the provincial People's Committee recommended that the national budget should cover all counter capital.

B. Consultation with the People’s Committee at District Level

40. The district and township People's Committees stated that: (i) They welcome and supported the project which they found relevant to the socio-economic development of the area, especially in agricultural production where it would improve the livelihood of local people. (ii) The district was committed to implement the sub-project following WB policies; (iii) In case of relocation the districts would use the land reserve 5% without difficulties. However, the leadership of concerned districts and townships recommended that: (iv) The reparation, upgrading or renovation of constructions to harmonize with works in the subproject would be necessary, but local people could hardly contribute to these activities as their resources were limited particularly cash incomes, and support from the Government and the Project would be needed. (v) The counter capital, if coming from the central government budget, would make the implementation of WB resettlement policies easier than if it would come from the local government budget. (iii) However, irrespective of the source of counter capital, district and township People's Committees would comply with their commitments to implementation of World Bank and the Government of Vietnam's policies.

C. Consultation with the People’s Committee at Commune Levels

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6 Including: The People's Committee of Ha Tinh Province (with the participation of the leaders of the Department of Agriculture and Rural development; The People's Committees of the districts of Cam Xuyen, Thach Ha and of the township of Ha Tinh (with the participation of concerned offices)
41. The commune People's Committees\textsuperscript{7} stated that: (i) implementation of the Subproject fits with the desire of local farmers in improving irrigation capacity. (ii) The commune People's Committees would actively participate in implementation of the project following WB policies. Realization of the commitment was not only to fulfill requirement of WB, but also to fulfill the responsibility of the local governments to implement the plan that the province and district had allocated. (iii) The commune People's Committees would use the land reserve 5\%, currently managed by commune People's Committees as a compensation for the people to be relocated if they wanted land for land. (iv) In case the people did not want to receive land compensation (by any reasons) the commune People's Committees will negotiate with the neighbors to exchange or transfer land so that the willingness of the concerned peoples could be met.

D. Consultation with Farmers

42. In the community consultations conducted at sampling sites N3-N5 and N4-N6, after informing the contents of the project and WB policies relating to compensation and resettlement, 100\% participating households as well as representatives of social organizations\textsuperscript{8} and communities leaders expressed a willingness to participate in the Subproject according to WB policies. The participants believed that these commitment can be realizable, as in many localities they had already successfully participated in several project with credit from the WB as well as from other international institutions, for example, projects for power lines, for renovation of the national highway No. 1A, and projects for rural infrastructure improvements. In brief, they were acquainted with the resettlement policies and compensation mechanisms of the WB. Local people hoped that the project would soon be implemented and saw it as a contribution to help crop diversification and poverty alleviation in rural areas. The local people were concerned about the present degradation of the earth build canals which they found badly degraded, due to lack of maintenance, both in portion managed by the central government agencies and by the local authorities. Irrigation capacity was reduced, even in areas near the headwork. But the community leaders were worried about realization of the WB policies if counter capital should be allocated from the local budget. The reasons were that this source of funding had previously not been reliable, were not released on time, and therefore had influence the time schedule for site clearance and construction and caused negative impact on farmers. In contrast, if the counter capital would be allocated from the central budget then the WB policies on resettlement could be realized and fitted favorably with the financial capacity of the localities.

3.2. Farmers Recommendation Concerning Water Closing Management

Cropping seasons and calendar

43. Local farmers practice a structure of three crops per year: the Winter-Spring (from beginning of November to end of May), the Summer-Autumn (from end of May to end of September), and the Winter (from end of October or beginning of November to January or

\textsuperscript{7} Based on the results of community consultations in several communes in 2 sampling sites (Canals N3-N5 & N4-N6).

\textsuperscript{8} Including: Representatives of social organizations: 1) Chairperson of the Front for the Farther Land, 2) Representative of the Veterans' Association; 3) Women's Union; 4) Farmers' Association; 5) Extension Clubs, 6) Association of Elders; 7) League of Young (There are no ethnic minorities in the sub-project area) and representative of the local authorities, including staffs in supporting offices: 1) Secretary or deputy of the Party Committee; 2) Chairperson or deputy of the Commune People's Committee; 3) Village Heads or the deputies; 4) Commune Land Management Office; 5) Chairperson of the Cooperative; 6) Head of Commune Water Management Unit (There are no ethnic minorities in the sub-project area)
February). If water management improved a fourth crop (for rice) could be applied and thereby increase the cropping seasons to four.

Table 9. Cropping Structure in the Subproject Areas in Percent of Total

<table>
<thead>
<tr>
<th>District</th>
<th>Winter-Spring</th>
<th>Summer-Autumn</th>
<th>In Season</th>
<th>Winter</th>
<th>Cultivation area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cam Xuyen</td>
<td>37.50</td>
<td>30.60</td>
<td>4.35</td>
<td>27.35</td>
<td>100</td>
</tr>
<tr>
<td>Thach Ha</td>
<td>28.85</td>
<td>22.87</td>
<td>9.60</td>
<td>39.18</td>
<td>100</td>
</tr>
<tr>
<td>Ha Tinh Township</td>
<td>30.42</td>
<td>35.86</td>
<td>1.32</td>
<td>32.40</td>
<td>100</td>
</tr>
<tr>
<td>Average</td>
<td>32.26</td>
<td>29.78</td>
<td>5.06</td>
<td>32.98</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Statistics 2001 of the district of Cam Xuyen, Thach Ha and the Ha Tinh Township.

44. The suitable time to cut water for construction would be after the Winter-Spring season:

from the end of September up to end of December (3 months).

Measures to mitigate negative impact

45. Although this period is not the planting time for new crop and plants need less water, there might be some negative impacts, including difficulties in land preparation for new crop as water would be scarce especially if there were no rain in the October period, and difficulties in water supply for domestic use. There are some correlation between surface water level in canals and ground water in wells. Farmers proposed to (i) temporarily re-open water in 10 days from 20 October; and (ii) recommend villagers to reserve water in ponds and to use water economically.

3.3. Farmers Participation in Water Management Including 3rd and On-farm Canals

46. Local peoples, especially poor households with labor force surplus and women, were ready to participate in sub-project implementation to earn cash income. Women could participate in water management such as distribution of water in systems of 3rd canals or redistribution to canals in the field although the task currently were undertaken by men because the task required duty at night and thus would not be appropriate for women health and their reproductive role as mothers in families. Among the tasks local people proposed were: (i) simple labor works (digging, moving, concrete filling, building and protecting the construction site), (ii) take care of several simple construction items or canal reparation with the guidance of technicians, (iii) participating in monitoring the construction process, (iv) take part in maintenance and protection of canals after the constructions were completed. Farmers were ready to contribute their properties to the State in order to improve, renovate and upgrade the canal system, including new 3rd class/inter-field canals. Elders even stated that this contribution would be considered as a property for the future generation.

Upgrading of 3rd grade and on-farm canals

47. The prevention of encroachment canal bands and the concretization of the available canals do not take more land and in some cases it even release some land. However, farmers said that they could not financially afford to conduct these works themselves. They needed support from the Government. Local resources were limited to (i) labor contribution as there was a surplus of labor in the rural areas, especially among young students who have graduated from high school but could not enter universities or vocational schools, and (ii) contribute a
part of their properties that may be affected by the Project, including their land. Reparation, upgrading or construction of the 3rd class or intra-field canals were for farmers to be "jointly implemented by the State and the Local People", in which, the ratio of contribution from local peoples could be calculated according to one of the following two formulas:

48. **First Formula** (at current level of contribution): The current level of contribution in the Program for Concretization of Canals in the province was 50% from local peoples and 50% from the State. Here the locals contributed labor and land. For newly built canals, households who lost large fractions the commune People's Committee would compensate by using the land reserve 5% or redistribute among the households. For houses, support would be made in the form of one day or cash to cover transport or reparation cost from the beneficiaries in the communities, who would not be affected by the constructions, or from the commune's budget.

49. **Second Formula**: The State provides material and technical support until construction has been completed. In this case the local people will also contribute labor, but they will establish a project committee with members elected by local people to organize construction under the guidance of technical staffs from government agencies and do not take compensation. Concerning agricultural land of several hundreds of square meters which affect family income negatively will be compensate from the land reserve 5% currently managed by the commune PC. In case this land reserve is not enough or not available, the commune’s PC will re-allocate land among households to equitably distribute the damage to various households in order to share the negative effects. Local peoples will not request compensation or support in case land is temporarily occupied (including agricultural and resettlement lands), but they request a prior announcement on time and duration for this occupation. The goal was to avoid acquisition of land, but in cases where it would be unavoidable, the commune PC would use land reserve for compensation.

50. In brief, the basic measure to reduce negative impacts in the upgrading process of the 3rd class and intra field canals is to enhance the contribution of local communities. Beneficiaries without suffering damage should contribute labor and financial resource to help the community assisting the affected households. To do this, information on Project contents and policies should be widely disseminated to local peoples and communities. The implementation process should be transparent, with appropriate monitoring mechanism to ensure participation and ownership of the part to which they contribute their labor.

3.4. **Existing Model of Water Management**

51. Currently there is no Water User Association in the Subproject areas. Instead, there are two schemes of irrigation management and distribution depending on whether there is an Agricultural Services Cooperation (ASC) at the location or not.

**Scheme in which Commune People’s Committee is the community representative:**

52. In this scheme, the commune and the village authority are responsible for water management and distribution including signing the contract for water with the IMC. This arrangement is often used in the areas where there is no ASC (except Cam Hoa commune of Cam Xuyen district where this scheme was applied in parallel with the cooperative of irrigation services). Under this arrangement the commune's People's Committee establish an Irrigation Unit under the guidance of the Vice-Chairman of CPC. This Unit will be headed by a Commune official in charge of transportation-irrigation and 1-2 Village Heads will act as
Deputy Team Leaders. In communes with small scale irrigation and where the areas to be watered are situated next to each other, or they are sharing a canal, one Irrigation Team will cover 2-3 villages.

53. One Irrigation Unit may consist of 21 members (for example, in Thach Binh commune, Thach Ha district), including 1 team leader, 1-2 Deputy Team Leaders, and irrigation groups. Each irrigation group consisted of one group leader who in most of cases was the Village Head/Deputy Head and 1-2 members, responsible for water management and distribution for 1-3 villages. The irrigation group was under the direct guide of Commune People’s Committee. In some communes, Village Head is the one who sign the contract with the IMC, not CPC (for example, in 4 communes of Cam Xuyen district) but they use the same general principle.

54. Salary for irrigation group members was taken from community contribution excluding irrigation fee to be paid to the IMC. The contribution level differs from commune to commune depending on the conditions of bringing water to the sites. Normally, this contribution is equivalent to 3 kg paddy rice/sao (360m²)/year (or 60 kg paddy rice/ha/year). In short, the irrigation services cost the farmers of 21 kg paddy rice /sao (500 m²)/year for 2 crops (= 3 kg/sao/year + 9kg/crop x 2 times) or 420 kg/ha/2 crops as a total. Wherever having more crops, people have to pay an extra of 9 kg/sao/year. People usually don’t pay irrigation fee in the winter.

Scheme in which the Agricultural Service Cooperative is community representative

55. Communities often use this scheme where there is an ASC. In general, structure of this scheme is similar to the above-mentioned scheme, but the difference is that the representative of water users is the Management Board of the ASC, not the CPC. This scheme is considered closer to the Water User Association given the fact that cooperative members also select the representative of water users. However, due to the low capacity in management and distribution, lack of involvement of water users in monitoring activities of Cooperative Management Board, this scheme retains the same constraints/disadvantages as the scheme with CPC as representative.

Advantages

56. Scheme with CPC as representative to sign contract with IMC reserves more advantages comparing to the scheme with CMB as representative. The main reason is CPC, as the local authority, will have more power and flexibility in problem solving when there is conflicts or deputes related to the use of water. CMB cannot solve disputes without the involvement of CPC and it significantly takes times to mobilize it.

Disadvantages

57. Areas covered by the IMC contract and for which it charges a fee is often smaller than the actual irrigated area. The area with semi-active irrigation (or source creating) is in the same situation. This lead to the Government is losing revenue. Those who benefit are not water users but their representative who signed the contract with IMC benefit. The funds collected form the irrigation fee is not enough to cover system’s maintenance, repairs and upgrading and, therefore, the construction works gets downgraded and can not function properly. At the same time farmers have to pay full cost for actual size irrigated areas and actual level of active irrigation. Moreover, in some places, farmers have to pay a rate higher than the one indicated in the contract with IMC due to the increase decided by the CMB. Often farmers have no information about this amount of money. Only their representatives,
who are involved in contract arrangements (CPC or CMB) know about it and therefore use it. This is a gap in management of current community based scheme. It also creates a favorable environment for financial violations and corruptions and farmers lose respect for their representatives.

58. IMC on the other hand lose control because the interest of the Company doesn’t match the interests of beneficiaries in this scheme. For inter-communal canals, the fact that each commune is responsible for water management in their own areas create difficulties for IMC in coordinating the irrigation activities for the whole system. Evaluation of irrigation services provided by IMC showed that: (i) due to the downgrade of canal systems, quantity of water provided has not met users’ demands. There is no or little water retained when it comes to the end of the canal, and farmers often spend a lot of time, including the nighttime, to fetch water to their own field. Although the irrigation schedule prepared by IMC was agreed upon by the local officials in reality the conflicts and disputes often happen between communities sharing one water source. The reason was that upstream people was wasting water while downstream people did not have enough water to use.

Solutions to overcome and improve water management and distribution approach

59. First of all, it is needed to improve, upgrade and modernize the construction works. This will facilitate the improvements of management style. Second, to reduce the intermediate steps in the management procedure, for example by only having representatives selected by users. Third, to put all the contract details in public such as total irrigation areas agreed by IMC, the distribution table per households per fields. This will provide opportunities for users to be able to monitor the implementation of the Contract signed by their Representative with IMC. Fourth, while waiting for the new scheme, the Government should strengthen the management system at all level and for all irrigation systems, including Level 3 field canal, in order to avoid conflicts between communities. Persons who involve in water management and distribution should receive Government salary (or be paid in kind) as applied for IMC. This would make those persons feel safe and increase their commitment to the work they are assigned for.

60. In order to overcome the localism due to the fact that responsibility of water management and distribution are different from one commune to another it was felt essential among farmers to establish a Water User Association. This approach would facilitate a holistic coordination considering the systematic and continuous aspects of the canal system, and will eliminate the constraints based on the administration boundary as currently implemented.

3.5. Irrigation Fee

61. Since the agricultural cooperatives did not exist the households have to pay extra fee for management, distribution and transporting of water to field plots including small-scale reparation. The irrigation fee paid to IMC was on average 18kg paddy/1 sao\(^9\)/year for 2 crops (or 360 kg/ha/year) to be paid in cash. The amount depended on current market price (about 792.000 VND/ha/year). For summer crop (vu mua), the fee was about 9 kg/sao/year. For winter crop, there is no need to pay the fee thanks to the rain.

\(^9\) 1 'sao' trung bé = 500 m\(^2\).
62. Local people, except the irrigation fee, contribute the salaries for members of irrigation group. The contribution differed slightly depending upon the level of water and the difficulty in transporting it. Normally the rate of contribution was 3 kg paddy/sao/year (or 60 kg paddy/ha/year). Thus, the total of payment of household for irrigation service was 420 kg/ha/2 crops (equivalent to 924,000 VND at present price).

Ability and willingness to pay for irrigation services after completion of subproject

63. Presently, all households pay fully the irrigation fee for IMC through the commune’s authority or Management Board of cooperative according to the signed contract. It is estimated that only 5-7 poor households in each commune have their contribution paid by the commune. In the future, local people are willing to pay an irrigation fee higher if the irrigation system can guarantee full sufficient and reliable water in time. If that happen productivity (yield) of the crops and husbandry would be higher than at present and the cultivated areas should be increased. The process of crops transition should be more appropriate and easy. Then the local people would be willing to pay higher fee because in general, the profit per area unit would go up. Furthermore they do not have to fight for water with other communes.

3.6. Farmers Proposed Water Management Model

Market principles in management

64. In order to overcome the weakness in the current management models the local people agreed to have a new model in which they could nominate their representatives for water management and to sign contracts with the IMC. They particularly wanted to control the financial source concerning water utilization. Local peoples entirely supported market principles applied by IMC in regards to irrigation water, which meant they would pay only for what they used and defined by measuring equipment. These principles ensure equity between providers and users and on the other hand surmount the existing insufficient responsibility in maintaining canals and wasteful water-use.

65. However, the users were worried that the present status of canals and water supply capacity if management and distribution of water would not be under direct control of local authorities then there would be no one who had sufficient power to make timely intervention and solve disputes with other water-head localities and ensure water for their particular locality. They hoped that these difficulties could be overcome with modernization of the canal system provided by the Subproject.

Consultation to suggest models of management

66. There are 2 models of management that local peoples and their communities suggest for selection:

First model: The State should make a unit of management for all the canals, even for 3-class/in-field canal. Peoples who participate in management and distribution of water for 3-class/in-field canal will be paid by the State (by monthly salary or by their products) as IMC staff is entitled to. In so doing, they would be assured in their work. IMC could then be the organization in charge of managing and distributing water for all the canals, even 3-class/in-field canal of the agricultural irrigation system.

Second model: Establish Association of Watering Users by community. This model got more support than the first one. Although the model of Association of Watering Users would rely on experiences of old Agricultural Cooperative at hamlet and commune levels and the present
Agricultural Service Cooperative, but in order to get certain achievements, local peoples suggest that: (i) the scale of this Association at first should be of hamlet level since it is suitable with management capacity of local peoples who have limited experiences in this new matter, and (ii) this model will be established only after the modernization of the irrigation system completed. Experiences of Cam Xuyen district shows that the establishment of this model in Cam Hoa commune cannot get into work because of the backward irrigation system which causes different levels of water provision capacity at head, middle and end sections of irrigation canal.

Priorities to improve the procedure of management and distribution

67. When the canal system is not yet modernized, the first priority to improve the procedure of watering management and distribution was: (i) Contracts signed between CPC/or hamlet head/or Management Board of Agriculture Service Cooperative and IMC should be published widely so the users know how large the area under watering in each agricultural season, levels of watering (active or semi-active etc) and the signed watering area for each household/user. This could solve the inadequate collection of irrigation fees from the users to IMC. At present part of the fee is used for other purposes/or self-interests of the group who is representative for the users in contracting, managing and distributing. The change would on the one hand creates equity and on the other hand help IMC to have a budget from irrigation fees for maintaining and strengthening capacity of agricultural irrigation watering system.

68. When the irrigation canal system has been modernized, the first priority was to establish an association of watering users in each community to overcome shortcomings of existing models. There should also be training courses on how to operate the new models of water management and distribution given to Associations of Watering Users.

69. From now on and during implementation of the Subproject, there should be widely dissemination to local peoples and their community leaders about models of watering management and distribution that applied by other countries from modern irrigation canal systems.

3.7. Community Consultation Concerning Mitigation Measures

70. In order to mitigate the any negative impacts during the implementation of sub-project, the community suggested: (i) wide and full communication to local people and communities on contents, policies of the Sub-project and schedule of implementation. (ii) Encourage forces within the communities to contribute to construction of Sub-project, and support the affected households. (iii) Managers of the Subproject should have sufficient professional ability and experiences, good understanding on WB policies as well as VN government policies. The local people were concerned to suffer the least from wrong or mistaken implementation of WB and Government policies. (iv) Compensation for assets should be paid at the price that the local people can accept to be able to restore the things affected. (v) Use the 5% emergency land for compensation in case that the affected households do not accept compensation in cash. (vi) There should be a representatives from local people in the monitoring process of compensation, resettlement, as well as implementation according to the regulation of WB policies. (vii) There should be capacity building for management and administration to communities in order to prevent security violence due to high concentration of workers in the region. (viii) During construction all channels banks should be integrated for the purpose of transport. (ix) Encourage
reconstruction of old channels and avoid the change of systems channels. (x) Implement in the season proposed in order avoid the peak production season.

Mitigation measures during implementation of construction works

71. The local people proposed (i) the contractor should commit by sanction, to repair rural transport road and other community infrastructures, which are used for construction of the Subproject. The contractors should also apply measures to reduce air pollution from construction dust, such as regular covering and watering the roads, especially for the sections which passed populated areas. (ii) Facilitate suitable areas for collection and storing construction materials and find the most suitable transport routes. (iii) Inform the people about the construction schedule so households who are temporarily users of canal protection corridors can make an appropriate schedule for their own production and harvesting in accordance with the Project schedule to mitigate possible losses.
## Annex 1: Population in Benefited Areas, Sample Areas, and Affected Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>District Cam Xuyen</th>
<th>District Thach Ha</th>
<th>Town Ha Tinh</th>
<th>Total</th>
<th>% of affected/Beneficiaries (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of com./to wn</td>
<td># of popul.</td>
<td># of HHs</td>
<td># of com./popul.</td>
<td># of HHs</td>
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<tr>
<td>A. Benefited Areas (total):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1. Urban area</td>
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<td>28956</td>
<td>28</td>
<td>127009</td>
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<td>2. Rural area (total):</td>
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<td>26906</td>
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<td>118273</td>
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<td>17657</td>
<td>23</td>
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<tr>
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<td>15458</td>
<td>3680</td>
<td>3</td>
<td>15458</td>
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<tr>
<td>2.3. Mountainous area</td>
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<td>25059</td>
<td>5569</td>
<td>4</td>
<td>15849</td>
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<td>B. Sample area (total):</td>
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<td>12612</td>
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<td>1. Canal N3 – N5</td>
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<td>35735</td>
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<td>C. Areas where are possibly be affected (Total):</td>
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<tr>
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<tr>
<td>2.3. Mountainous area</td>
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<td>25059</td>
<td>5569</td>
<td>4</td>
<td>15849</td>
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</tbody>
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**Source:**
- According to fieldwork survey at IMC Ke Go, March 2003
- Statistical Department of Thach Ha district: Statistical Book, 2001
- Statistical Book of Cam Xuyen district: Statistical Book, 2001