Appendix I

Economic Analysis

Appendix I
Economic Analysis

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Appendix I Economic Analysis

1. ASSUMPTIONS OF THE ECONOMIC ANALYSIS

(1) Price level and Exchange Rate

The analyses are made at the price level of December 2001 and applied foreign exchange rate is one U.S. dollar equivalent to VND15,068 and 100 Japanese Yen equivalent to VND12,212.

(2) Project Life

The project life of 50 years after construction is assumed for the economic analysis. Average lifetime of the electrical and mechanical facilities related to the projects is assumed 25 years after installation. Replacement costs cover the cost for replacement of such facilities after the lifetime within project life.

(3) Discount Rate

A discount rate of 12% is applied to reflect the opportunity cost of capital in Vietnam.

(4) Standard Conversion Factor (SCF)

The standard conversion factor (SCF) of 0.9 with reference to recent similar studies is applied to adjust the effects of trade distortion, foreign exchange premiums, the local costs for non-traded goods and services.

(5) Transfer Payment

From the viewpoint of national economy, the transfer payment such as taxes, duty, subsidy and interest is merely a domestic monetary movement without direct productivity. Therefore, it is excluded from the costs of goods and services.

(6) Economic Prices of Agricultural Outputs

The prices of agricultural outputs are adjusted by SCF on assumption that most of the incremental outputs are for domestic consumption.

(7) Economic Price of Electricity

The economic price of electricity is assumed at 5 US Cents/KWh, which is generally used as a price of electricity in economic analyses.

(8) Economic price of Domestic and Industrial Water Supply

The economic price of domestic and industrial water is assumed at VND1,800/m3, the long-term marginal cost of production adjusted by SCF.

(9) Economic Project Cost

The economic project cost has been estimated from the financial project cost adjusting by SCF after deducting the direct transfer payment.

(10) Operation and Maintenance Cost

The following annual operation and maintenance costs are assumed:

- Civil construction including dam and irrigation facilities: 0.5% of construction cost
- Mechanical and electrical facilities including hydropower facility: 1.5% of facility cost
- Domestic and industrial water supply: 5% of the construction cost

(11) Replacement Cost

The following replacement costs are assumed for replacement of facilities 25 years after installation:

- Mechanical and electrical facility for dam and hydropower generation
- Pumps and gates for irrigation and water supply facilities

2. PROJECT BENEFITS

2.1 Flood Control Benefit

(1) Definition of flood control effect

Flood control effects are measured from difference of flood damages between those with and without project conditions. In other words, they are flood damage mitigation benefit.

(2) Procedure of flood damage estimation for the central regions

The Central Vietnam was suffered from extremely serious damages by the flood in November 1999. Especially Thua Thien Hue Province was suffered from very serious damages. The damages were assessed by several institutions after the flood. General Statistical Office of Thua Thien Hue Province conducted a damage assessment. The results are shown in Table I.1 and summarized below:

Flood Damage in November 1999

Item	Damage (VND million)
A. Flood, storm prevention structure and infrastructure	481,122.9
1. Flood and storm prevention structure	76,500.6
2. Water resources	58,292.8
3. Transportation and fishery	293,081.5
4. Electricity and post office	53,248.0
B. Damages to business	523,548.7
C. Damages to welfare, cultural structure	86,227.3
D. Damages to houses	235,921.8
E. Other damaged assets	419,585.0
Total	1,746,405.7

The result of the assessment is quite detail and broad though the damages to houses seemed under evaluated comparing with the actual value of houses. The damages to household durable assets, such as TV, radio, other electric devices, cooking stoves, tableware, cloths, and furniture, were not included.

According to the rainfall analysis, two-day rainfall at the time of the flood in November 1999 was almost the same as the rainfall of the occurrence probability of 50 years. The rainfall in November 1999 lasted for more than five days and the continual rain might make the flood damage worse. However, after reviewing the flood damage record discussed above, the damages due to long lasting inundation are not very significant. Therefore, it is assumed that if a 50-year flood occurred, the same scale of damages may happen.

From the above consideration, the study team uses this flood damage record for the basis for estimation of the probable flood damages by adjusting the damages to houses and household durable assets by region.

(3) Flood conditions

Based on the point elevations shown in the topographical maps of 1/50,000, the elevation-volume curve (HV curve) and the elevation-area curve (HA curve) have been prepared by the study team.

Inundation volumes under various magnitudes of floods have been calculated by flood simulation analyses. Based on the HV/HA curves and the inundations volumes under various magnitude of floods, the flood conditions such as inundation depth and area are estimated.

(4) Estimation of flood damage

Crops

According to the information obtained during the site reconnaissance, farmers in the flood prone area do not cultivate crops during the major flood season in

order to avoid flood damages. However, in the early flood season, paddy cultivation is widely practiced and it suffers from flood damage sometimes.

The paddy cultivation area is estimated at about 72% of inundation area from the present land use map. The expected value of unit gross output under present condition is VND6.3 million/ha.

Flood damage to paddy cultivation is decrease in yield due to submergence. In order to estimate the flood damage to paddy cultivation, the flood damage rates developed by Ministry of Construction, Japan are applied since no such uniformed standard is available in Vietnam.

Flood Damage Rates to Paddy

	Depth of Submergence		
	- 49cm	50-99cm	100cm-
Paddy	0.30	0.44	0.54

Source: Manual for flood control benefit survey, Ministry of Construction, Japan

It is assumed that the cultivation area and unit production volume will not change during the project life. The flood damage due to the early flood has been estimated as shown in Table I.2.

Houses/building

Number and value of houses are estimated by the following procedures:

- Average value of a house is estimated based on "Average current sales value of house by type of house and region" in Viet Nam Living Standards Survey (VLSS) 1997-1998, GSO. The prices have been adjusted by CPI to the prices in 2001.
- In order to separate the value of land use right from the sales value of house, half the value is considered as the value of house. The estimated value of a house is shown in Table I.3.
- Numbers of houses in flood prone areas are estimated from population density of the districts in flood prone areas dividing by average family size.

Household durable assets

Value of the household durable assets has been estimated based on "Average value of durable assets per household at current price by 10 regions" in the same VLSS. The price has been adjusted by CPI to 2001 price. The estimated value of household durable assets is presented in Table I.4.

With respect to house/building and household durable assets, basically the standard flood damage rates developed by Ministry of Construction, Japan are applied since no such uniformed standard is available in Vietnam. Floor level of houses is assumed 30cm above ground level based on actual situation observed through site reconnaissance (no flood damage considered for 30 cm depth inundation above ground level).

Flood Damage Rates

	Inundation depth above floor level				
	- 49cm	50-99cm	100-199cm	200-299cm	300cm-
House	0.092	0.119	0.266	0.580	0.834
Household effects	0.145	0.326	0.508	0.928	0.991

Source: Manual for flood control benefit survey, Ministry of Construction, Japan

Flood damages to houses and household durable assets are estimated from number of houses in inundation areas, unit value of houses and assets multiplied by the damage rate corresponding to inundation conditions. Difference of the flood damage between those with and without project is the flood reduction benefit.

From now to the target year, 2020, the number of houses in the flood prone area is supposed to increase and the urban area will expand according to population increase and economic development. In other words, flood damage potential will increase gradually to 2020. The future number of houses has been estimated by applying the target population growth rates discussed in the socio-economic framework. The flood damages have been estimated for with and without project conditions under the situations in the year 2001 and the year 2020 based on the estimated future number of houses.

It should be noted that even after implementation of the projects, flood inundation may occur in the low-lying areas and flood damages may remain. The process of calculation is shown in Table I.5.

(5) Probable Damages

Based on the newly estimated flood damages to houses and household durable assets, the flood damage of Thua Thien Hue Province in November 1999 has been recalculated as shown below:

Recalculation of Flood Damage of Thua Thien Hue Province, November 1999

Item	Damage (VND billion)	Ratio to Item 1
1. Newly estimated damages to houses and household durable assets (50-year flood)	1,417.2	
2. Flood, storm prevention structure and infrastructure	481.1	33%
3. Damage to business	523.5	36%
4. Damage to welfare, cultural structure	86.2	6%
5. Other damaged assets	419.6	29%
Total	2,927.6	

The above calculation is regarded as the flood damages of 50-year probable flood and the same ratios against the newly estimated housing damages are applied for all other river basins in the Central Region. The results of calculation are shown in Table I.6-(1).

(6) Annual Mean Flood Damage and Flood Mitigation Benefit

Annual mean flood damage is estimated as accumulation of flood damage segments derived from various magnitude of probable flood damage multiplied by the corresponding probability of occurrence, from non-damageable flood up to design protection level of flood. Table I.6-(2) shows the annual mean flood damage under the conditions with and without project.

Difference of the annual mean flood damage between those with and without project is considered as annual flood reduction benefit.

According to the analysis, the Ca River has enough discharge capacity and flood overflow will not occur even without project condition.

As to Bang Giang & Ky Cung, Se San, and Srepok River basins, since the information is very limited, flood control effects have been roughly estimated as follows:

a) Bang Giang & Ky Cung

According to the Water Resources Sector Review, 10,000ha of farmland in the river basin suffered from flood damage almost every year. This damage has been estimated at VND27.72 billion/year by the study team. It is assumed that after implementation of the project, this damage will be mitigated.

b) Se San

According to a flood damage record collected by the study team, 1,200ha of farmland in the river basin was suffered from flood damage in 1996 and the damage has been estimated at VND9.48 billion. Since no other flood report is available within 10 years, the study team regarded that the same scale of flood

occurs once 10 years. It is assumed that after implementation of the project, this damage will be mitigated: VND948 million/year

c) Srepok

According to a flood damage record collected by the study team, the river basin was suffered from flood damage in 1999 and the damage was estimated at VND3.5 billion. Since no other flood report is available within 10 years, the study team regarded that the same scale of flood occurs once 10 years. It is assumed that after implementation

2.2 Incremental Agricultural Benefit

Agricultural benefits of the projects have been estimated for production of crop, livestock, and aquaculture.

According to the agronomic study using model crops and cropping patterns based on the characteristics of the project area, after implementation of the projects, improvement in crop yields and production of higher value crops are expected. The benefits of incremental crop production are estimated as presented in Table I.7.

Unit values of livestock and aquaculture have been estimated by the study referring to "Statistical Data of Vietnam, Agriculture, Forestry, and Fishery 1995 - 2000, GSO". The process of estimation is shown in Table I.8.

The project benefits from livestock and aquaculture production have been estimated by the procedure shown in Tables I.9 and I.10.

The results of the estimation are summarized in Table I.11.

2.3 Hydropower Generation Benefit

Electricity production in Vietnam by mid-2000 was 350kWh per capita, about the half the level of Indonesia and one-fifth of that of Thailand. Although electricity output rose by 111% between 1993 and 1999, it has had difficulty in keeping up with demand.

The government has a master plan to increase power generation double by 2010 and five times from present level by 2020. Especially the government gives priority to develop hydropower plants, which bring about combined benefits such as flood control, water supply, irrigation, and electricity generation. The plan also mentions that exchange of electricity with neighboring countries will necessary in order to meet power demand in each region and whole country.

The economic price of electricity is assumed at 5 US Cents/kWh, which is generally used as a price of electricity in economic analyses. Annual mean energy produced by the projects is summarized in Table I.11.

2.4 Water Supply Benefit

Future demand increase of domestic and industrial water supply in each river basin is discussed in Chapter 1.9. The economic price of domestic and industrial water is assumed at VND1,800/m^3. The water supply benefits of the projects are summarized in Table I.11.

2.5 Other Intangible Benefits

Other than benefits discussed above, various effects are expected by the implementation of the projects as listed below:

- Contribution to national food security,
- Reduction of food import and saving foreign exchange holdings,
- Creation of new job opportunity,
- Improvement of self-sufficiency and nutritional level of rural farmers,
- To narrow the earnings differentials among regions,
- Convenience of rural population by improvement of access roads to the dam sites and the roads may reduce the cost of moving produce from the farm to the consumer,
- Improvement of public health and quality-of-life by supplying better quality water including decrease of water-related disease,
- To ease the water carrying works,
- Groundwater recharge and improvement of vegetation, and
- Stabilization of rural farmers' livelihood and prevention of influx of rural population into urban areas.

The benefits listed above are very valuable, they are nevertheless virtually impossible to value satisfactory in monetary terms.

2.6 Indirect Benefit

During construction period, the construction works may fuel various demand for other industries. Meanwhile, after construction works, incremental agricultural production will also arouse various demands for many different industries such as chemical industries, transportation services, trade services, etc. Flood control effect may prevent inundation of highway or railway and paralysis of economic activity may be prevented or mitigated. Such ripple effects must be enormous. However, such benefits are also very hard to value in money terms without more detailed study.

3. ECONOMIC PROJECT COST

The economic project cost has been estimated from the financial project cost adjusting by SCF (0.9) after deducting the direct transfer payment. The financial and economic costs of the projects are shown in Table I.12. Annual economic project costs are presented in Table I.13

4. COST-BENEFIT ANALYSIS

Based on the benefits and costs discussed above, economic viabilities of the projects are examined by cost-benefit analysis. The analysis is conducted by the discounted cash flow analysis. The cash flow of the projects is presented in Table I.14. The results of the economic analysis are summarized in the beginning of succeeding chapter..

5. RESULTS OF ECONOMIC ANALYSIS

The results of the economic analyses showed the projects of Bang Giang & Ky Cung, Ca, Huong, Tra Khuc, Kone, Ba, and Srepok river basins have sufficient economic efficiency with EIRRs of more than 12%, which reflects the opportunity cost of capital in Vietnam. Especially the projects in the Central Coast Region such as Huong, Tra Khuc, Kone, and Ba show high economic efficiency with EIRRs of more than 15%.

Economic indicators are calculated as shown in Table I.14 and summarized below:

Economic Indicators

River basin projects	EIRR (%)	B/C Ratio	NPV (Million US$)
Bang Giang & Ky Cung	14.1	1.27	24.8
Ma	11.7	0.97	-7.5
Ca	12.5	1.06	16.2
Thach Han	11.2	0.91	-8.6
Huong	17.4	1.70	59.5
Vu Gia-Thu Bon	9.6	0.78	-81.8
Tra Khuc	19.8	2.12	60.5
Kone	15.4	1.40	35.3
Ba	15.6	1.44	103.9
Se San	9.9	0.79	-24.7
Srepok	13.5	1.16	33.9

Note: B/C and NPV are calculated with a discount rate of 12%.

Table I.1 Results of Flood Damage Assessment, November 1999 (1/2)
(Source: General Statistical Office of Thua Thien Hue Province)

FROM NOVEMBER, 1st TO 6th, 1999

A. HUMAN DAMAGE
1. Dead: 352 people (357)
2. Lost: 11 people (12)
3. Injured: 305 people

CRITERIA	UNIT	QUANTITY	TOTAL (MILLION VND)
A	B	1	2
A. Flood, storm prevention structure and infrastructure		**x**	**481,123**
I. Flood and storm prevention structure		x	76,501
1. Length of bursted, floated dykes	m	20,270	x
2. Length of eroded dykes	m	132,250	x
3. Estimated quantity of landslide	m^3	595,750	14,893
4. Length of broken, floated revetment	m	1,930	x
5. Estimated quantity of floated dyke	m^3	28,950	44,343
6. Estimated quantity of eroded, floated concrete	m^3	28,776	17,266
II. Water resources		x	58,293
7. Destroyed culvert…	unit	218	14,649
8. Damaged culvert…	unit	247	7,167
9. Damaged, destroyed pumping station	unit	124	874
10. Length of eroded, floated canal	m	449,955	x
11. Estimated quantity of landslide..	m^3	959,332	23,332
12. Estimated quantity of stone slide…	m^3	218,595	6,132
13. Estimated eroded concrete	m^3	16,542	6,140
III. Transportation and fishery		x	293,082
14. Destroyed, sunk boats and ships	unit	1,431	15,240
15. Damaged boats and ships	unit	1,175	8,048
16. Lost boats and ships	unit	256	x
17. Destroyed bridges and culverts	unit	384	18,239
18. Damaged bridges and culverts	unit	1,369	8,860
19. Length of eroded, floated road	m	395,147	22,841
20.Length of inundated road	m	220,700	x
21. Estimated quantity of eroded, floated land, stone, concrete...	m3	1,126,801	42,371
22. Destroyed, floated cars	unit	9	15
23. Damaged cars	unit	150	322
24. Other damage to transportation		x	27,146
Managed by transportation department	**million VND**		**150,000**
IV. Electricity and post office		x	53,248
Electricity	million VND	x	28,248
Post office	million VND	x	25,000
Of which:			
24. Collapsed mid and high voltage pole	pole	273	143
25. Collapsed low voltage pole	pole	624	945
26. Inundated and damaged transformer station	station	256	4,280
27. Collapsed communication pole	pole	469	237
28. Floated communication wire	km	83	4,210
B. DAMAGE TO BUSINESS		**x**	**523,549**
29. Inundated, damaged paddy area	ha	345	x
29.1. Of which, dead loss area	ha	255	1,398
30. Inundated, damaged sown area	ha	241	28
31. Inundated, damaged subsidiary crop	ha	4,450	x
31.1. Of which, dead loss area	ha	3,963	8,322
32. Damaged fruit trees area	ha	2,077	10,383
33. Inundated, damaged industrial plants	ha	2,299	9,461
34. Damaged protective forest area	ha	5,154	23,646
35. Damaged seedling garden	ha	526	10,200
36. Dead buffalo and cows	head	5,062	11,342
37. Dead pigs	head	86,862	45,460
38. Damaged livestock, poultry	head	869,872	23,316
39. Damaged aquaculture area	ha	2,459	32,852
40. Amount of damaged factories, warehouse, restaurant, shop, and others for manufacture and business.	unit	729	2,479
41.Floated machines, devices, materials and products			10,130
_ Destroyed agricultural machines	unit	330	574
_ Inundated, damaged pumping machines	unit	125	506
_ Inundated, damaged fertilizer	ton	1,258	2,515
_ Inundated, floated pesticide	ton	8	611
_ Paddy	ton	4,199	7,558

Table I.1 Results of Flood Damage Assessment, November 1999 (2/2)
(Source: General Statistical Office of Thua Thien Hue Province)

FROM NOVEMBER, 1st TO 6th, 1999

A. HUMAN DAMAGE

1. Dead: 352 people (357)
2. Lost: 11 people (12)
3. Injured: 305 people

CRITERIA	UNIT	QUANTITY	TOTAL (MILLION VND)
A	B	1	2
_ Rice	ton	139	411
_ Wet, floated cement	ton	919	16
_ Fishing devices: Fish net	ton	2,742	
_ Net	ton	127	30,930
_ Say	unit	50,700	
_ Lost fish of all kinds	ton	293	
_ Fish breed	million heads	4	11,529
_ Other kinds of fish	ton	290	
_ Others		x	46,631
42. Amount of each wet, inundated, but can be recovered machine, device, material, product			53,940
_ Paddy	ton	15,656	28,180
_ Cement	ton	500	400
_ Foods of all kinds	ton	110	1,620
_ Petrol of all kinds	litre	50,000	200
_ Others		x	23,540
Damage of sectors in provincial level	million VND		189,442
_ Industry	million VND		100,978
_ Service	million VND		58,400
_ Tourism	million VND		15,000
_ Construction	million VND		15,064
C. DAMAGE TO WELFARE, CULTURAL STRUCTURE		**x**	**86,227**
_ Damage to cultural sector	million VND		20,516
_ Damage to health care	million VND		20,000
_ Damage to education	million VND		45,712
Of which:			
43. Collapsed, floated classroom	classroom	126	
44. Inundated, damaged classroom	classroom	938	
45. Inundated, floated clinics, hospitals	room	45	
46. Partly damaged clinics, hospitals	room	192	
47. Other damaged cultural, welfare constructions, included:			
_ Floated desks, chairs	set		
_ Books and learning aids			
_ Drugs and medical device			
_ Others			
D. DAMAGED HOUSES		**x**	**235,922**
48. Collapsed, floated houses	house	12,390	112,872
49. Inundated houses	house	152,024	30,405
50. Eroded, non-roof houses	house	15,853	92,645
E. ECOLOGICAL ENVIRONMENT AND LIVELIHOOD			
51. Homeless people because of collapsed or floated houses	person	71,876	x
52. Temporarily homeless because of inundation	person	66,686	x
53. Inundated residential area because of pesticide, petrol, fertilizer, toxic chemicals…	km^2	262	x
F. OTHER DAMAGED ASSETS (IF ANY)		**x**	**419,585**
_ Wet and floated paddy, including seedling paddy	ton	78,987	126,379
_ Petrol of all kinds	litre	4,850	17
_ Subsidiary crop	ton		1,018
_ Floated Vinh Hien estuary		788	35,000
_ Others		x	225,369
Administration and armament		x	31,803
_ Administration	million VND		25,303
_ Armament	million VND		6,500
G. ESTIMATED TOTAL DAMAGE			**1,746,406**
H. INITIALLY FLOOD, STORM DAMAGE RECOVERY			
1. Human and asset safeguard			
_ Rescued people			
_ Rescued asset			
_ …			
2. Relief, support and stabilization			
_ Supported people	person		
_ Supported sum	million VND		

Table I.2 Estimated Flood Damage to Agricultural Production (1/14)
(Ma River Basin, Without Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
	(km2)	from (m)	to (m)			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
	(km2)	from (m)	to (m)			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
	(km2)	from (m)	to (m)			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Table I.2 Estimated Flood Damage to Agricultural Production (2/14)
(Ma River Basin, With Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Table I.2 Estimated Flood Damage to Agricultural Production (3/14)
(Thach Han River Basin, Without Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	10	-	0.49	0.30	0.42	7	300	2,100	4,536				-	1,361	-	1,361
B	8	0.50	0.99	0.44	0.48	6	300	2,100	3,629				-	1,597	-	1,597
C	41	1.00		0.54	0.67	30	300	2,100	18,598				-	10,043	-	10,043
Total	59					42			26,763	-			-	13,001	-	13,001

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	10	-	0.49	0.30	0.42	7.2	300	2,100	4,536				-	1,361	-	1,361
B	9	0.50	0.99	0.44	0.48	6.5	300	2,100	4,082				-	1,796	-	1,796
C	62	1.00		0.54	0.67	44.6	300	2,100	28,123				-	15,186	-	15,186
Total	81					58			36,741	-			-	18,343	-	18,343

Table I.2 Estimated Flood Damage to Agricultural Production (4/14)
(Thach Han River Basin, With Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	3	-	0.49	0.30	0.42	2	300	2,100	1,361				-	408	-	408
B	2	0.50	0.99	0.44	0.48	1	300	2,100	907				-	399	-	399
C	14	1.00		0.54	0.67	10	300	2,100	6,350				-	3,429	-	3,429
Total	19					14			8,618	-			-	4,236	-	4,236

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	5	-	0.49	0.30	0.42	3.6	300	2,100	2,268				-	680	-	680
B	5	0.50	0.99	0.44	0.48	3.6	300	2,100	2,268				-	998	-	998
C	23	1.00		0.54	0.67	16.6	300	2,100	10,433				-	5,634	-	5,634
Total	33					24			14,969	-			-	7,312	-	7,312

Table I.2 Estimated Flood Damage to Agricultural Production (5/14)
(Huong River Basin, Without Project, in 2001)

Flood Scale: Early Flood 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: Early Flood 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	4	-	0.49	0.30	0.42	3	300	2,100	1,814				-	544	-	544
B	5	0.50	0.99	0.44	0.48	4	300	2,100	2,268				-	998	-	998
C	5	1.00		0.54	0.67	4	300	2,100	2,268				-	1,225	-	1,225
Total	14					10			6,350	-			-	2,767	-	2,767

Flood Scale: Early Flood 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	6	-	0.49	0.30	0.42	4.3	300	2,100	2,722				-	817	-	817
B	5	0.50	0.99	0.44	0.48	3.6	300	2,100	2,268				-	998	-	998
C	15	1.00		0.54	0.67	10.8	300	2,100	6,804				-	3,674	-	3,674
Total	26					19			11,794	-			-	5,489	-	5,489

Table I.2 Estimated Flood Damage to Agricultural Production (6/14)
(Huong River Basin, With Project)

Flood Scale: Early Flood 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
	(km2)	from (m)	to (m)			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: Early Flood 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
	(km2)	from (m)	to (m)			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: Early Flood 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
	(km2)	from (m)	to (m)			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Table I.2 Estimated Flood Damage to Agricultural Production (7/14)
(Vu Gia-Thu Bon River Basin, Without Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	15	-	0.49	0.30	0.42	11	300	2,100	6,804				-	2,041	-	2,041
B	11	0.50	0.99	0.44	0.48	8	300	2,100	4,990				-	2,196	-	2,196
C	32	1.00		0.54	0.67	23	300	2,100	14,515				-	7,838	-	7,838
Total	58					42			26,309	-			-	12,075	-	12,075

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	14	-	0.49	0.30	0.42	10.1	300	2,100	6,350				-	1,905	-	1,905
B	14	0.50	0.99	0.44	0.48	10.1	300	2,100	6,350				-	2,794	-	2,794
C	40	1.00		0.54	0.67	28.8	300	2,100	18,144				-	9,798	-	9,798
Total	68					49			30,844	-			-	14,497	-	14,497

Table I.2 Estimated Flood Damage to Agricultural Production (8/14)
(Vu Gia-Thu Bon River Basin, With Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	10	-	0.49	0.30	0.42	7	300	2,100	4,536				-	1,361	-	1,361
B	6	0.50	0.99	0.44	0.48	4	300	2,100	2,722				-	1,198	-	1,198
C	26	1.00		0.54	0.67	19	300	2,100	11,794				-	6,369	-	6,369
Total	42					30			19,052	-			-	8,928	-	8,928

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	11	-	0.49	0.30	0.42	7.9	300	2,100	4,990				-	1,497	-	1,497
B	5	0.50	0.99	0.44	0.48	3.6	300	2,100	2,268				-	998	-	998
C	27	1.00		0.54	0.67	19.4	300	2,100	12,247				-	6,613	-	6,613
Total	43					31			19,505	-			-	9,108	-	9,108

Table I.2 Estimated Flood Damage to Agricultural Production (9/14)
(Tra Khuc River Basin, Without Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	17	-	0.49	0.30	0.42	12	300	2,100	7,711				-	2,313	-	2,313
B	10	0.50	0.99	0.44	0.48	7	300	2,100	4,536				-	1,996	-	1,996
C	50	1.00		0.54	0.67	36	300	2,100	22,680				-	12,247	-	12,247
Total	77					55			34,927	-			-	16,556	-	16,556

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	16	-	0.49	0.30	0.42	11.5	300	2,100	7,258				-	2,177	-	2,177
B	17	0.50	0.99	0.44	0.48	12.2	300	2,100	7,711				-	3,393	-	3,393
C	70	1.00		0.54	0.67	50.4	300	2,100	31,752				-	17,146	-	17,146
Total	103					74			46,721	-			-	22,716	-	22,716

Table I.2 Estimated Flood Damage to Agricultural Production (10/14)
(Tra Khuc River Basin, With Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	4	-	0.49	0.30	0.42	2.9	300	2,100	1,814				-	544	-	544
B	3	0.50	0.99	0.44	0.48	2.2	300	2,100	1,361				-	599	-	599
C	13	1.00		0.54	0.67	9.4	300	2,100	5,897				-	3,184	-	3,184
Total	20					14			9,072	-			-	4,327	-	4,327

Table I.2 Estimated Flood Damage to Agricultural Production (11/14)
(Kone River Basin, Without Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	8	-	0.49	0.30	0.42	6	300	2,100	3,629				-	1,089	-	1,089
B	9	0.50	0.99	0.44	0.48	6	300	2,100	4,082				-	1,796	-	1,796
C	54	1.00		0.54	0.67	39	300	2,100	24,494				-	13,227	-	13,227
Total	71					51			32,205	-			-	16,112	-	16,112

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	14	-	0.49	0.30	0.42	10.1	300	2,100	6,350				-	1,905	-	1,905
B	9	0.50	0.99	0.44	0.48	6.5	300	2,100	4,082				-	1,796	-	1,796
C	64	1.00		0.54	0.67	46.1	300	2,100	29,030				-	15,676	-	15,676
Total	87					63			39,462	-			-	19,377	-	19,377

Table I.2 Estimated Flood Damage to Agricultural Production (12/14)
(Kone River Basin, With Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Table I.2 Estimated Flood Damage to Agricultural Production (13/14)
(Ba River Basin, Without Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood	Productivity	Farmgate price	Expected output	Area in flood	Productivity	Farmgate price	Expected output			
	(km2)	(m)	(m)			area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	area (km2)	(ton/km2)	(VND1,000/ton)	(VND Million)	(VND Million)	(VND Million)	
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A	3	-	0.49	0.30	0.42	2.2	300	2,100	1,361				-	408	-	408
B	3	0.50	0.99	0.44	0.48	2.2	300	2,100	1,361				-	599	-	599
C	13	1.00		0.54	0.67	9.4	300	2,100	5,897				-	3,184	-	3,184
Total	19					14			8,619	-			-	4,191	-	4,191

Table I.2 Estimated Flood Damage to Agricultural Production (14/14)
(Ba River Basin, With Project)

Flood Scale: 2-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42				-				-	-	-	-
B		0.50	0.99	0.44	0.48				-				-	-	-	-
C		1.00		0.54	0.67				-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage Rate		Agricultural Production (Summer-Autumn)								Flood Damage		Total flood damage to agricalture (VND Million)
	Area	Inundation Depth		Paddy	Upland crop	Paddy				Upland crop				Paddy	Upland crop	
		from	to			Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	Area in flood area (km2)	Productivity (ton/km2)	Farmgate price (VND1,000/ton)	Expected output (VND Million)	(VND Million)	(VND Million)	
	(km2)	(m)	(m)													
	a	b	c	d	e	f=a x 72%	g	h	i = f x g x h	j	k	l	m = j x k x l	n=d x i	o=e x m	p=n+o
A		-	0.49	0.30	0.42	-	300	2,100	-				-	-	-	-
B		0.50	0.99	0.44	0.48	-	300	2,100	-				-	-	-	-
C		1.00		0.54	0.67	-	300	2,100	-				-	-	-	-
Total	-					-			-	-			-	-	-	-

Table I.3 Average Value of House by Region

Region: North Central Coast

		Distr.	%	Ave. unit value in 1998 (Million VND)	Ave. unit value in 2001 (Million VND)	Weighted ave. value of house (Million VND)
1	City house with garden	46.62	49%	233	255	124
2	Multi-storied house with private bathroom/kitchen	1.77	2%	204	223	4
3	Multi-storied house with separate bathroom/kitchen	10.73	11%	109	119	13
4	Permanet one-story house with private bath/kitchen/toilet	4.11	4%	147	161	7
5	Permanent one-story house with separate bath/kitchen/toilet	8.4	9%	43	47	4
6	Semi-permanent house	19.72	21%	20	22	5
7	Temporary house	4.52	5%	6	7	0
8	Total	95.87	100%			157
9	Adjustment to deduct value of land use right					50%
10	Average value of house without land (Financial)					79
11	SCF					90%
12	Average value of house without land (Economic)					71
13	Equivalent US Dollar (US$1,000)					4.7

Region: South Central Coast

		Distr.	%	Ave. unit value in 1998 (Million VND)	Ave. unit value in 2001 (Million VND)	Weighted ave. value of house (Million VND)
1	City house with garden	0	0%	0	0	0
2	Multi-storied house with private bathroom/kitchen	8.45	17%	272	297	51
3	Multi-storied house with separate bathroom/kitchen	8.97	18%	194	212	39
4	Permanet one-story house with private bath/kitchen/toilet	6.73	14%	156	170	23
5	Permanent one-story house with separate bath/kitchen/toilet	3.09	6%	110	120	8
6	Semi-permanent house	12.46	25%	33	36	9
7	Temporary house	9.64	20%	12	13	3
8	Total	49.34	100%			132
9	Adjustment to deduct value of land use right					50%
10	Average value of house without land (Financial)					66
11	SCF					90%
12	Average value of house without land (Economic)					59
13	Equivalent US Dollar (US$1,000)					3.9

Table I.4 Average Value of Durable Assets per Household

Region	Ave. value of household assets in 1998 (1,000 VND)	Ave. value of household assets in 2001 (1,000 VND)	SCF	Ave. value of household assets in 2001 (1,000 VND)
1 Hanoi and Ho Chi Minh Cities	26,909	29,404	90%	26,464
2 Other large cities	16,162	17,661	90%	15,895
3 Small towns	10,431	11,398	90%	10,258
4 Rural area of North Mountain and Midland	4,170	4,557	90%	4,101
5 Rural area of Red River Delta	4,258	4,652	90%	4,187
6 Rural area of North Central Coast	3,740	4,086	90%	3,677
7 Rural area of South Central Coast	6,462	7,061	90%	6,355
8 Rural area of Central Highlands	7,539	8,238	90%	7,414
9 Rural area of Southeast	10,509	11,483	90%	10,335
10 Rural area of Mekong River Delta	5,124	5,600	90%	5,040

Table I.5 Estimated Flood Damage to General Assets (1/28)
(Ma River Basin, Without Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Table I.5 Estimated Flood Damage to General Assets (2/28)
(Ma River Basin, Without Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	16	-	0.29	-	-	767	-	-	109	16	1,744	71	123,824	10.3	-	3.7	6,453	-	-	-
B	4	0.30	0.79	0.092	0.145	767	-	-	109	4	436	71	30,956	10.3	-	3.7	1,613	2,848	234	3,082
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	20							-			2,180		154,780		-		8,066	2,848	234	3,082

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	13	-	0.29	-	-	767	-	-	109	13	1,417	71	100,607	10.3	-	3.7	5,243	-	-	-
B	27	0.30	0.79	0.092	0.145	767	-	-	109	27	2,943	71	208,953	10.3	-	3.7	10,889	19,224	1,579	20,803
C	16	0.80	1.29	0.119	0.326	767	-	-	109	16	1,744	71	123,824	10.3	-	3.7	6,453	14,735	2,104	16,839
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	56							-			6,104		433,384		-		22,585	33,959	3,683	37,642

Table I.5 Estimated Flood Damage to General Assets (3/28)
(Ma River Basin, With Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109		-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Table I.5 Estimated Flood Damage to General Assets (4/28)
(Ma River Basin, With Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	767	-	-	109	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Table I.5 Estimated Flood Damage to General Assets (5/28)
(Thach Han River Basin, Without Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	6	-	0.29	-	-	233	0.4	98	40	6	223	71	22,795	10.3	1,008	3.7	826	-	-	-
B	10	0.30	0.79	0.092	0.145	233	0.7	163	40	9	372	71	37,992	10.3	1,680	3.7	1,376	3,495	443	3,938
C	5	0.80	1.29	0.119	0.326	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	2,261	498	2,759
D	10	1.30	2.29	0.266	0.508	233	0.7	163	40	9	372	71	37,992	10.3	1,680	3.7	1,376	10,106	1,552	11,658
E	8	2.30	3.29	0.580	0.928	233	0.6	130	40	7	298	71	30,394	10.3	1,344	3.7	1,101	17,629	2,269	19,898
F	20	3.30		0.834	0.991	233	1.4	326	40	19	744	71	75,984	10.3	3,360	3.7	2,753	63,371	6,058	69,429
Total	59							962			2,195		224,153		9,912		8,120	96,862	10,820	107,682

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	6	-	0.29	-	-	233	0.4	98	40	6	223	71	22,795	10.3	1,008	3.7	826	-	-	-
B	9	0.30	0.79	0.092	0.145	233	0.6	147	40	8	335	71	34,193	10.3	1,512	3.7	1,239	3,146	399	3,545
C	10	0.80	1.29	0.119	0.326	233	0.7	163	40	9	372	71	37,992	10.3	1,680	3.7	1,376	4,521	996	5,517
D	16	1.30	2.29	0.266	0.508	233	1.1	261	40	15	595	71	60,787	10.3	2,688	3.7	2,202	16,169	2,484	18,653
E	10	2.30	3.29	0.580	0.928	233	0.7	163	40	9	372	71	37,992	10.3	1,680	3.7	1,376	22,035	2,836	24,871
F	30	3.30		0.834	0.991	233	2.1	489	40	28	1,116	71	113,976	10.3	5,040	3.7	4,129	95,056	9,086	104,142
Total	81							1,321			3,013		307,735		13,608		11,148	140,927	15,801	156,728

Table I.5 Estimated Flood Damage to General Assets (6/28)
(Thach Han River Basin, Without Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	11	-	0.29	-	-	233	0.8	179	40	10	409	71	41,791	10.3	1,848	3.7	1,514	-	-	-
B	15	0.30	0.79	0.092	0.145	233	1.1	245	40	14	558	71	56,988	10.3	2,520	3.7	2,065	5,243	665	5,908
C	10	0.80	1.29	0.119	0.326	233	0.7	163	40	9	372	71	37,992	10.3	1,680	3.7	1,376	4,521	996	5,517
D	19	1.30	2.29	0.266	0.508	233	1.3	310	40	18	707	71	72,185	10.3	3,192	3.7	2,615	19,201	2,950	22,151
E	13	2.30	3.29	0.580	0.928	233	0.9	212	40	12	484	71	49,390	10.3	2,184	3.7	1,789	28,646	3,687	32,333
F	37	3.30		0.834	0.991	233	2.6	603	40	34	1,376	71	140,571	10.3	6,216	3.7	5,093	117,236	11,207	128,443
Total	105							1,713			3,906		398,917		17,640		14,452	174,847	19,505	194,352

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	11	-	0.29	-	-	233	0.8	179	40	10	409	71	41,791	10.3	1,848	3.7	1,514	-	-	-
B	18	0.30	0.79	0.092	0.145	233	1.3	294	40	17	670	71	68,386	10.3	3,024	3.7	2,478	6,292	798	7,090
C	19	0.80	1.29	0.119	0.326	233	1.3	310	40	18	707	71	72,185	10.3	3,192	3.7	2,615	8,590	1,893	10,483
D	22	1.30	2.29	0.266	0.508	233	1.5	359	40	20	818	71	83,583	10.3	3,696	3.7	3,028	22,233	3,416	25,649
E	20	2.30	3.29	0.580	0.928	233	1.4	326	40	19	744	71	75,984	10.3	3,360	3.7	2,753	44,071	5,673	49,744
F	47	3.30		0.834	0.991	233	3.3	767	40	44	1,748	71	178,563	10.3	7,896	3.7	6,469	148,922	14,236	163,158
Total	137							2,234			5,096		520,492		23,016		18,857	230,108	26,016	256,124

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	11	-	0.29	-	-	233	0.8	179	40	10	409	71	41,791	10.3	1,848	3.7	1,514	-	-	-
B	18	0.30	0.79	0.092	0.145	233	1.3	294	40	17	670	71	68,386	10.3	3,024	3.7	2,478	6,292	798	7,090
C	19	0.80	1.29	0.119	0.326	233	1.3	310	40	18	707	71	72,185	10.3	3,192	3.7	2,615	8,590	1,893	10,483
D	34	1.30	2.29	0.266	0.508	233	2.4	555	40	32	1,265	71	129,173	10.3	5,712	3.7	4,680	34,360	5,279	39,639
E	20	2.30	3.29	0.580	0.928	233	1.4	326	40	19	744	71	75,984	10.3	3,360	3.7	2,753	44,071	5,673	49,744
F	61	3.30		0.834	0.991	233	4.3	995	40	57	2,269	71	231,752	10.3	10,248	3.7	8,396	193,281	18,476	211,757
Total	163							2,659			6,064		619,271		27,384		22,436	286,594	32,119	318,713

Table I.5 Estimated Flood Damage to General Assets (7/28)
(Thach Han River Basin, With Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
B		0.30	0.79	0.092	0.145	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
C		0.80	1.29	0.119	0.326	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
D		1.30	2.29	0.266	0.508	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
E		2.30	3.29	0.580	0.928	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
F		3.30		0.834	0.991	233	-	-	40		-	71	-	10.3	-	3.7	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	1	-	0.29	-	-	233	0.1	16	40	1	37	71	3,799	10.3	168	3.7	138	-	-	-
B	3	0.30	0.79	0.092	0.145	233	0.2	49	40	3	112	71	11,398	10.3	504	3.7	413	1,049	133	1,182
C	3	0.80	1.29	0.119	0.326	233	0.2	49	40	3	112	71	11,398	10.3	504	3.7	413	1,356	299	1,655
D	3	1.30	2.29	0.266	0.508	233	0.2	49	40	3	112	71	11,398	10.3	504	3.7	413	3,032	466	3,498
E	9	2.30	3.29	0.580	0.928	233	0.6	147	40	8	335	71	34,193	10.3	1,512	3.7	1,239	19,832	2,553	22,385
F	-	3.30		0.834	0.991	233	-	-	40	-	-	71	-	10.3	-	3.7	-	-	-	-
Total	19							310			707		72,186		3,192		2,616	25,269	3,451	28,720

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	3	-	0.29	-	-	233	0.2	49	40	3	112	71	11,398	10.3	504	3.7	413	-	-	-
B	5	0.30	0.79	0.092	0.145	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	1,748	222	1,970
C	4	0.80	1.29	0.119	0.326	233	0.3	65	40	4	149	71	15,197	10.3	672	3.7	551	1,808	399	2,207
D	5	1.30	2.29	0.266	0.508	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	5,053	776	5,829
E	5	2.30	3.29	0.580	0.928	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	11,018	1,418	12,436
F	11	3.30		0.834	0.991	233	0.8	179	40	10	409	71	41,791	10.3	1,848	3.7	1,514	34,854	3,332	38,186
Total	33							538			1,228		125,374		5,544		4,542	54,481	6,147	60,628

Table I.5 Estimated Flood Damage to General Assets (8/28)
(Thach Han River Basin, With Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	3	-	0.29	-	-	233	0.2	49	40	3	112	71	11,398	10.3	504	3.7	413	-	-	-
B	5	0.30	0.79	0.092	0.145	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	1,748	222	1,970
C	4	0.80	1.29	0.119	0.326	233	0.3	65	40	4	149	71	15,197	10.3	672	3.7	551	1,808	399	2,207
D	6	1.30	2.29	0.266	0.508	233	0.4	98	40	6	223	71	22,795	10.3	1,008	3.7	826	6,063	932	6,995
E	5	2.30	3.29	0.580	0.928	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	11,018	1,418	12,436
F	12	3.30		0.834	0.991	233	0.8	196	40	11	446	71	45,591	10.3	2,016	3.7	1,652	38,023	3,635	41,658
Total	35							571			1,302		132,973		5,880		4,818	58,660	6,606	65,266

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	3	-	0.29	-	-	233	0.2	49	40	3	112	71	11,398	10.3	504	3.7	413	-	-	-
B	5	0.30	0.79	0.092	0.145	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	1,748	222	1,970
C	5	0.80	1.29	0.119	0.326	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	2,261	498	2,759
D	6	1.30	2.29	0.266	0.508	233	0.4	98	40	6	223	71	22,795	10.3	1,008	3.7	826	6,063	932	6,995
E	6	2.30	3.29	0.580	0.928	233	0.4	98	40	6	223	71	22,795	10.3	1,008	3.7	826	13,221	1,702	14,923
F	13	3.30		0.834	0.991	233	0.9	212	40	12	484	71	49,390	10.3	2,184	3.7	1,789	41,191	3,937	45,128
Total	38							620			1,414		144,370		6,384		5,230	64,484	7,291	71,775

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	3	-	0.29	-	-	233	0.2	49	40	3	112	71	11,398	10.3	504	3.7	413	-	-	-
B	5	0.30	0.79	0.092	0.145	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	1,748	222	1,970
C	5	0.80	1.29	0.119	0.326	233	0.4	82	40	5	186	71	18,996	10.3	840	3.7	688	2,261	498	2,759
D	8	1.30	2.29	0.266	0.508	233	0.6	130	40	7	298	71	30,394	10.3	1,344	3.7	1,101	8,085	1,242	9,327
E	6	2.30	3.29	0.580	0.928	233	0.4	98	40	6	223	71	22,795	10.3	1,008	3.7	826	13,221	1,702	14,923
F	15	3.30		0.834	0.991	233	1.1	245	40	14	558	71	56,988	10.3	2,520	3.7	2,065	47,528	4,544	52,072
Total	42							685			1,562		159,567		7,056		5,781	72,843	8,208	81,051

Table I.5 Estimated Flood Damage to Houses due to Major Flood (9/28)
(Huong River Basin, Without Project (1/2))

Flood Scale: Major Flood 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	4	-	0.29	-	-	1,138	0.4	401	185	4	675	71	76,357	15.9	6,369	3.7	2,497	-	-	-
B	5	0.30	0.79	0.092	0.145	1,138	0.3	300	185	5	876	71	83,538	15.9	4,777	3.7	3,242	7,685	1,163	8,848
C	5	0.80	1.29	0.119	0.326	1,138	-	-	185	5	925	71	65,675	15.9	-	3.7	3,423	7,815	1,116	8,931
D	7	1.30	2.29	0.266	0.508	1,138	-	-	185	7	1,295	71	91,945	15.9	-	3.7	4,792	24,457	2,434	26,891
E	9	2.30	3.29	0.580	0.928	1,138	-	-	185	9	1,665	71	118,215	15.9	-	3.7	6,161	68,565	5,717	74,282
F	-	3.30		0.834	0.991	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
Total	30						1	701		29	5,436		435,730		11,146		20,115	108,522	10,430	118,952
								6,137												

Flood Scale: Major Flood 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	8	-	0.29	-	-	1,138	0.7	801	185	7	1,350	71	152,715	15.9	12,738	3.7	4,994	-	-	-
B	12	0.30	0.79	0.092	0.145	1,138	1.1	1,202	185	11	2,025	71	229,072	15.9	19,107	3.7	7,491	21,075	3,857	24,932
C	6	0.80	1.29	0.119	0.326	1,138	0.5	601	185	5	1,012	71	114,536	15.9	9,554	3.7	3,746	13,630	4,336	17,966
D	12	1.30	2.29	0.266	0.508	1,138	0.8	961	185	11	2,064	71	214,782	15.9	15,286	3.7	7,636	57,132	11,644	68,776
E	8	2.30	3.29	0.580	0.928	1,138	-	-	185	8	1,480	71	105,080	15.9	-	3.7	5,476	60,946	5,082	66,028
F	13	3.30		0.834	0.991	1,138	-	-	185	13	2,405	71	170,755	15.9	-	3.7	8,899	142,410	8,819	151,229
Total	59						3.1	3,565		56	10,335		986,940		56,685		38,242	295,193	33,738	328,931
								13,901												

Flood Scale: Major Flood 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	9	-	0.29	-	-	1,138	0.8	901	185	8	1,518	71	171,804	15.9	14,331	3.7	5,618	-	-	-
B	14	0.30	0.79	0.092	0.145	1,138	1.2	1,402	185	13	2,362	71	267,251	15.9	22,292	3.7	8,740	24,587	4,500	29,087
C	14	0.80	1.29	0.119	0.326	1,138	1.2	1,402	185	13	2,362	71	267,251	15.9	22,292	3.7	8,740	31,803	10,116	41,919
D	17	1.30	2.29	0.266	0.508	1,138	1.5	1,702	185	16	2,868	71	324,519	15.9	27,069	3.7	10,612	86,322	19,142	105,464
E	12	2.30	3.29	0.580	0.928	1,138	1.0	1,082	185	11	2,044	71	221,927	15.9	17,197	3.7	7,563	128,718	22,977	151,695
F	21	3.30		0.834	0.991	1,138	-	-	185	21	3,885	71	275,835	15.9	-	3.7	14,375	230,046	14,246	244,292
Total	87						5.7	6,489		81	15,040		1,528,587		103,181		55,648	501,476	70,981	572,457
								21,529												

Table I.5 Estimated Flood Damage to Houses due to Major Flood (10/28)
(Huong River Basin, Without Project (2/2))

Flood Scale: Major Flood 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	19	-	0.29	-	-	1,138	1.7	1,903	185	17	3,206	71	362,698	15.9	30,254	3.7	11,861	-	-	-
B	20	0.30	0.79	0.092	0.145	1,138	1.8	2,003	185	18	3,374	71	381,787	15.9	31,846	3.7	12,485	35,124	6,428	41,552
C	14	0.80	1.29	0.119	0.326	1,138	1.2	1,402	185	13	2,362	71	267,251	15.9	22,292	3.7	8,740	31,803	10,116	41,919
D	28	1.30	2.29	0.266	0.508	1,138	2.5	2,804	185	26	4,724	71	534,502	15.9	44,584	3.7	17,479	142,178	31,528	173,706
E	14	2.30	3.29	0.580	0.928	1,138	1.2	1,402	185	13	2,362	71	267,251	15.9	22,292	3.7	8,740	155,006	28,798	183,804
F	30	3.30		0.834	0.991	1,138	2.6	3,004	185	27	5,062	71	572,680	15.9	47,769	3.7	18,728	477,615	65,899	543,514
Total	125						11.0	12,518		114	21,090		2,386,169		199,037		78,033	841,726	142,769	984,495
								33,608												

Flood Scale: Major Flood 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	19	-	0.29	-	-	1,138	1.7	1,903	185	17	3,206	71	362,698	15.9	30,254	3.7	11,861	-	-	-
B	33	0.30	0.79	0.092	0.145	1,138	2.9	3,305	185	30	5,568	71	629,948	15.9	52,546	3.7	20,601	57,955	10,606	68,561
C	32	0.80	1.29	0.119	0.326	1,138	2.8	3,205	185	29	5,399	71	610,859	15.9	50,953	3.7	19,976	72,692	23,123	95,815
D	28	1.30	2.29	0.266	0.508	1,138	2.5	2,804	185	26	4,724	71	534,502	15.9	44,584	3.7	17,479	142,178	31,528	173,706
E	27	2.30	3.29	0.580	0.928	1,138	2.4	2,704	185	25	4,555	71	515,412	15.9	42,992	3.7	16,855	298,939	55,538	354,477
F	40	3.30		0.834	0.991	1,138	3.5	4,006	185	36	6,749	71	763,574	15.9	63,692	3.7	24,971	636,821	87,865	724,686
Total	179						15.8	17,926		163	30,201		3,416,993		285,021		111,743	1,208,585	208,660	1,417,245
								48,127												

Flood Scale: Major Flood 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	19	-	0.29	-	-	1,138	1.7	1,903	185	17	3,206	71	362,698	15.9	30,254	3.7	11,861	-	-	-
B	33	0.30	0.79	0.092	0.145	1,138	2.9	3,305	185	30	5,568	71	629,948	15.9	52,546	3.7	20,601	57,955	10,606	68,561
C	32	0.80	1.29	0.119	0.326	1,138	2.8	3,205	185	29	5,399	71	610,859	15.9	50,953	3.7	19,976	72,692	23,123	95,815
D	54	1.30	2.29	0.266	0.508	1,138	4.8	5,408	185	49	9,111	71	1,030,825	15.9	85,984	3.7	33,710	274,199	60,805	335,004
E	28	2.30	3.29	0.580	0.928	1,138	2.5	2,804	185	26	4,724	71	534,502	15.9	44,584	3.7	17,479	310,011	57,594	367,605
F	60	3.30		0.834	0.991	1,138	5.3	6,009	185	55	10,123	71	1,145,361	15.9	95,537	3.7	37,456	955,231	131,796	1,087,027
Total	226						19.9	22,633		206	38,131		4,314,193		359,858		141,083	1,670,088	283,924	1,954,012
								60,763												

Table I.5 Estimated Flood Damage to Houses due to Major Flood (11/28)
(Huong River Basin, With Project (1/2))

Flood Scale: Major Flood 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	-	-	0.29	-	-	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
B	-	0.30	0.79	0.092	0.145	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
C	-	0.80	1.29	0.119	0.326	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
D	-	1.30	2.29	0.266	0.508	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
E	-	2.30	3.29	0.580	0.928	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
F	-	3.30		0.834	0.991	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
Total	-						-	-		-	-		-		-		-	-	-	-

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Flood Scale: Major Flood 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	-	-	0.29	-	-	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
B	-	0.30	0.79	0.092	0.145	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
C	-	0.80	1.29	0.119	0.326	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
D	-	1.30	2.29	0.266	0.508	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
E	-	2.30	3.29	0.580	0.928	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
F	-	3.30		0.834	0.991	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
Total	-						-	-		-	-		-		-		-	-	-	-

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Flood Scale: Major Flood 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	-	-	0.29	-	-	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
B	-	0.30	0.79	0.092	0.145	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
C	-	0.80	1.29	0.119	0.326	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
D	-	1.30	2.29	0.266	0.508	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
E	-	2.30	3.29	0.580	0.928	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
F	-	3.30		0.834	0.991	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
Total	-						-	-		-	-		-		-		-	-	-	-

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Table I.5 Estimated Flood Damage to Houses due to Major Flood (12/28)
(Huong River Basin, With Project (2/2))

Flood Scale: Major Flood 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	3	-	0.29	-	-	1,138	-	-	185	3	555	71	39,405	15.9	-	3.7	2,054	-	-	-
B	5	0.30	0.79	0.092	0.145	1,138	-	-	185	5	925	71	65,675	15.9	-	3.7	3,423	6,042	496	6,538
C	5	0.80	1.29	0.119	0.326	1,138	-	-	185	5	925	71	65,675	15.9	-	3.7	3,423	7,815	1,116	8,931
D	-	1.30	2.29	0.266	0.508	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
E	-	2.30	3.29	0.580	0.928	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
F	-	3.30		0.834	0.991	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
Total	13						-	-		13	2,405		170,755		-		8,900	13,857	1,612	15,469

2,405

Flood Scale: Major Flood 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	4	-	0.29	-	-	1,138	0.2	254	185	4	699	71	67,624	15.9	4,034	3.7	2,585	-	-	-
B	5	0.30	0.79	0.092	0.145	1,138	-	-	185	5	925	71	65,675	15.9	-	3.7	3,423	6,042	496	6,538
C	3	0.80	1.29	0.119	0.326	1,138	-	-	185	3	555	71	39,405	15.9	-	3.7	2,054	4,689	670	5,359
D	9	1.30	2.29	0.266	0.508	1,138	-	-	185	9	1,665	71	118,215	15.9	-	3.7	6,161	31,445	3,130	34,575
E	4	2.30	3.29	0.580	0.928	1,138	-	-	185	4	740	71	52,540	15.9	-	3.7	2,738	30,473	2,541	33,014
F	-	3.30		0.834	0.991	1,138	-	-	185	-	-	71	-	15.9	-	3.7	-	-	-	-
Total	25						0.2	254		25	4,584		343,459		4,034		16,961	72,649	6,837	79,486

4,837

Flood Scale: Major Flood 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	4	-	0.29	-	-	1,138	0.4	401	185	4	675	71	76,357	15.9	6,369	3.7	2,497	-	-	-
B	6	0.30	0.79	0.092	0.145	1,138	0.5	601	185	5	1,012	71	114,536	15.9	9,554	3.7	3,746	10,537	1,929	12,466
C	5	0.80	1.29	0.119	0.326	1,138	0.4	501	185	5	844	71	95,447	15.9	7,961	3.7	3,121	11,358	3,613	14,971
D	10	1.30	2.29	0.266	0.508	1,138	0.1	70	185	10	1,839	71	135,518	15.9	1,115	3.7	6,803	36,048	4,022	40,070
E	8	2.30	3.29	0.580	0.928	1,138	-	-	185	8	1,480	71	105,080	15.9	-	3.7	5,476	60,946	5,082	66,028
F	6	3.30		0.834	0.991	1,138	-	-	185	6	1,110	71	78,810	15.9	-	3.7	4,107	65,728	4,070	69,798
Total	39						1.4	1,572		38	6,959		605,748		24,999		25,750	184,617	18,716	203,333

8,532

Table I.5 Estimated Flood Damage to General Assets (13/28)
(Vu Gia-Thu Bon River Basin, Without Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	9	-	0.29	-	-	302	0.3	76	65	9	569	59	38,039	10.3	784	6.4	3,639	-	-	-
B	14	0.30	0.79	0.092	0.145	302	0.4	118	65	14	885	59	59,171	10.3	1,219	6.4	5,661	5,444	998	6,442
C	6	0.80	1.29	0.119	0.326	302	0.2	51	65	6	379	59	25,359	10.3	523	6.4	2,426	3,018	961	3,979
D	11	1.30	2.29	0.266	0.508	302	0.3	93	65	11	695	59	46,492	10.3	958	6.4	4,448	12,367	2,746	15,113
E	8	2.30	3.29	0.580	0.928	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	19,611	3,649	23,260
F	10	3.30		0.834	0.991	302	0.3	85	65	10	632	59	42,265	10.3	871	6.4	4,044	35,249	4,871	40,120
Total	58							490			3,664		245,138		5,052		23,453	75,689	13,225	88,914

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	8	-	0.29	-	-	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	-	-	-
B	15	0.30	0.79	0.092	0.145	302	0.4	127	65	15	948	59	63,398	10.3	1,306	6.4	6,065	5,833	1,069	6,902
C	12	0.80	1.29	0.119	0.326	302	0.3	101	65	12	758	59	50,718	10.3	1,045	6.4	4,852	6,035	1,922	7,957
D	11	1.30	2.29	0.266	0.508	302	0.3	93	65	11	695	59	46,492	10.3	958	6.4	4,448	12,367	2,746	15,113
E	10	2.30	3.29	0.580	0.928	302	0.3	85	65	10	632	59	42,265	10.3	871	6.4	4,044	24,514	4,561	29,075
F	12	3.30		0.834	0.991	302	0.3	101	65	12	758	59	50,718	10.3	1,045	6.4	4,852	42,299	5,844	48,143
Total	68							575			4,296		287,403		5,922		27,496	91,048	16,142	107,190

Table I.5 Estimated Flood Damage to General Assets (14/28)
(Vu Gia-Thu Bon River Basin, Without Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	23	-	0.29	-	-	302	0.6	194	65	22	1,453	59	97,210	10.3	2,003	6.4	9,300	-	-	-
B	18	0.30	0.79	0.092	0.145	302	0.5	152	65	17	1,137	59	76,077	10.3	1,568	6.4	7,278	6,999	1,283	8,282
C	15	0.80	1.29	0.119	0.326	302	0.4	127	65	15	948	59	63,398	10.3	1,306	6.4	6,065	7,544	2,403	9,947
D	28	1.30	2.29	0.266	0.508	302	0.8	237	65	27	1,769	59	118,343	10.3	2,439	6.4	11,322	31,479	6,991	38,470
E	12	2.30	3.29	0.580	0.928	302	0.3	101	65	12	758	59	50,718	10.3	1,045	6.4	4,852	29,416	5,472	34,888
F	25	3.30		0.834	0.991	302	0.7	211	65	24	1,580	59	105,663	10.3	2,177	6.4	10,109	88,123	12,175	100,298
Total	121							1,023			7,645		511,409		10,538		48,926	163,561	28,324	191,885

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	61	-	0.29	-	-	302	1.7	516	65	59	3,854	59	257,818	10.3	5,313	6.4	24,665	-	-	-
B	93	0.30	0.79	0.092	0.145	302	2.6	786	65	90	5,876	59	393,067	10.3	8,100	6.4	37,605	36,162	6,627	42,789
C	38	0.80	1.29	0.119	0.326	302	1.1	321	65	37	2,401	59	160,608	10.3	3,310	6.4	15,365	19,112	6,088	25,200
D	76	1.30	2.29	0.266	0.508	302	2.1	643	65	74	4,802	59	321,216	10.3	6,619	6.4	30,731	85,443	18,974	104,417
E	50	2.30	3.29	0.580	0.928	302	1.4	423	65	49	3,159	59	211,326	10.3	4,355	6.4	20,218	122,569	22,804	145,373
F	75	3.30		0.834	0.991	302	2.1	634	65	73	4,739	59	316,989	10.3	6,532	6.4	30,326	264,369	36,526	300,895
Total	393							3,323			24,830		1,661,024		34,229		158,910	527,655	91,019	618,674

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	61	-	0.29	-	-	302	1.7	516	65	59	3,854	59	257,818	10.3	5,313	6.4	24,665	-	-	-
B	101	0.30	0.79	0.092	0.145	302	2.8	854	65	98	6,381	59	426,879	10.3	8,797	6.4	40,840	39,273	7,197	46,470
C	102	0.80	1.29	0.119	0.326	302	2.9	863	65	99	6,444	59	431,105	10.3	8,884	6.4	41,244	51,301	16,342	67,643
D	167	1.30	2.29	0.266	0.508	302	4.7	1,412	65	162	10,551	59	705,830	10.3	14,545	6.4	67,527	187,751	41,693	229,444
E	76	2.30	3.29	0.580	0.928	302	2.1	643	65	74	4,802	59	321,216	10.3	6,619	6.4	30,731	186,305	34,661	220,966
F	146	3.30		0.834	0.991	302	4.1	1,235	65	142	9,224	59	617,073	10.3	12,716	6.4	59,035	514,639	71,105	585,744
Total	653							5,522			41,257		2,759,921		56,874		264,042	979,269	170,998	1,150,267

Table I.5 Estimated Flood Damage to General Assets (15/28)
(Vu Gia-Thu Bon River Basin, With Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	302	-	-	65		-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	8	-	0.29	-	-	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	-	-	-
B	6	0.30	0.79	0.092	0.145	302	0.2	51	65	6	379	59	25,359	10.3	523	6.4	2,426	2,333	428	2,761
C	5	0.80	1.29	0.119	0.326	302	0.1	42	65	5	316	59	21,133	10.3	435	6.4	2,022	2,515	801	3,316
D	10	1.30	2.29	0.266	0.508	302	0.3	85	65	10	632	59	42,265	10.3	871	6.4	4,044	11,242	2,497	13,739
E	5	2.30	3.29	0.580	0.928	302	0.1	42	65	5	316	59	21,133	10.3	435	6.4	2,022	12,257	2,280	14,537
F	8	3.30		0.834	0.991	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	28,199	3,897	32,096
Total	42							355			2,654		177,514		3,658		16,984	56,546	9,903	66,449

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	8	-	0.29	-	-	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	-	-	-
B	6	0.30	0.79	0.092	0.145	302	0.2	51	65	6	379	59	25,359	10.3	523	6.4	2,426	2,333	428	2,761
C	5	0.80	1.29	0.119	0.326	302	0.1	42	65	5	316	59	21,133	10.3	435	6.4	2,022	2,515	801	3,316
D	11	1.30	2.29	0.266	0.508	302	0.3	93	65	11	695	59	46,492	10.3	958	6.4	4,448	12,367	2,746	15,113
E	5	2.30	3.29	0.580	0.928	302	0.1	42	65	5	316	59	21,133	10.3	435	6.4	2,022	12,257	2,280	14,537
F	8	3.30		0.834	0.991	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	28,199	3,897	32,096
Total	43							364			2,717		181,741		3,745		17,388	57,671	10,152	67,823

Table I.5 Estimated Flood Damage to General Assets (16/28)
(Vu Gia-Thu Bon River Basin, With Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	8	-	0.29	-	-	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	-	-	-
B	11	0.30	0.79	0.092	0.145	302	0.3	93	65	11	695	59	46,492	10.3	958	6.4	4,448	4,277	784	5,061
C	6	0.80	1.29	0.119	0.326	302	0.2	51	65	6	379	59	25,359	10.3	523	6.4	2,426	3,018	961	3,979
D	11	1.30	2.29	0.266	0.508	302	0.3	93	65	11	695	59	46,492	10.3	958	6.4	4,448	12,367	2,746	15,113
E	6	2.30	3.29	0.580	0.928	302	0.2	51	65	6	379	59	25,359	10.3	523	6.4	2,426	14,708	2,737	17,445
F	10	3.30		0.834	0.991	302	0.3	85	65	10	632	59	42,265	10.3	871	6.4	4,044	35,249	4,871	40,120
Total	52							440			3,285		219,779		4,530		21,027	69,619	12,099	81,718

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	8	-	0.29	-	-	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	-	-	-
B	15	0.30	0.79	0.092	0.145	302	0.4	127	65	15	948	59	63,398	10.3	1,306	6.4	6,065	5,833	1,069	6,902
C	5	0.80	1.29	0.119	0.326	302	0.1	42	65	5	316	59	21,133	10.3	435	6.4	2,022	2,515	801	3,316
D	11	1.30	2.29	0.266	0.508	302	0.3	93	65	11	695	59	46,492	10.3	958	6.4	4,448	12,367	2,746	15,113
E	8	2.30	3.29	0.580	0.928	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	19,611	3,649	23,260
F	10	3.30		0.834	0.991	302	0.3	85	65	10	632	59	42,265	10.3	871	6.4	4,044	35,249	4,871	40,120
Total	57							482			3,601		240,912		4,964		23,049	75,575	13,136	88,711

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	9	-	0.29	-	-	302	0.3	76	65	9	569	59	38,039	10.3	784	6.4	3,639	-	-	-
B	14	0.30	0.79	0.092	0.145	302	0.4	118	65	14	885	59	59,171	10.3	1,219	6.4	5,661	5,444	998	6,442
C	8	0.80	1.29	0.119	0.326	302	0.2	68	65	8	505	59	33,812	10.3	697	6.4	3,235	4,024	1,282	5,306
D	10	1.30	2.29	0.266	0.508	302	0.3	85	65	10	632	59	42,265	10.3	871	6.4	4,044	11,242	2,497	13,739
E	9	2.30	3.29	0.580	0.928	302	0.3	76	65	9	569	59	38,039	10.3	784	6.4	3,639	22,063	4,105	26,168
F	11	3.30		0.834	0.991	302	0.3	93	65	11	695	59	46,492	10.3	958	6.4	4,448	38,774	5,357	44,131
Total	61							516			3,854		257,818		5,313		24,666	81,547	14,239	95,786

Table I.5 Estimated Flood Damage to General Assets (17/28)
(Tra Khuc River Basin, Without Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	10	-	0.29	-	-	766	0.5	368	132	10	1,257	59	95,835	10.3	3,787	6.4	8,042	-	-	-
B	13	0.30	0.79	0.092	0.145	766	0.6	478	132	12	1,634	59	124,585	10.3	4,923	6.4	10,455	11,462	2,230	13,692
C	8	0.80	1.29	0.119	0.326	766	0.4	294	132	8	1,005	59	76,668	10.3	3,030	6.4	6,434	9,123	3,085	12,208
D	15	1.30	2.29	0.266	0.508	766	0.7	552	132	14	1,885	59	143,752	10.3	5,681	6.4	12,064	38,238	9,014	47,252
E	10	2.30	3.29	0.580	0.928	766	0.5	368	132	10	1,257	59	95,835	10.3	3,787	6.4	8,042	55,584	10,977	66,561
F	21	3.30		0.834	0.991	766	1.0	772	132	20	2,639	59	201,253	10.3	7,953	6.4	16,889	167,845	24,618	192,463
Total	77							2,831			9,676		737,928		29,161		61,926	282,252	49,924	332,176

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	10	-	0.29	-	-	766	0.5	368	132	10	1,257	59	95,835	10.3	3,787	6.4	8,042	-	-	-
B	16	0.30	0.79	0.092	0.145	766	0.8	588	132	15	2,011	59	153,336	10.3	6,059	6.4	12,868	14,107	2,744	16,851
C	17	0.80	1.29	0.119	0.326	766	0.8	625	132	16	2,136	59	162,919	10.3	6,438	6.4	13,672	19,387	6,556	25,943
D	17	1.30	2.29	0.266	0.508	766	0.8	625	132	16	2,136	59	162,919	10.3	6,438	6.4	13,672	43,336	10,216	53,552
E	15	2.30	3.29	0.580	0.928	766	0.7	552	132	14	1,885	59	143,752	10.3	5,681	6.4	12,064	83,376	16,467	99,843
F	28	3.30		0.834	0.991	766	1.3	1,030	132	27	3,519	59	268,338	10.3	10,604	6.4	22,519	223,794	32,825	256,619
Total	103							3,787			12,943		987,099		39,007		82,837	384,000	68,808	452,808

Table I.5 Estimated Flood Damage to General Assets (18/28)
(Tra Khuc River Basin, Without Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	15	-	0.29	-	-	766	0.7	552	132	14	1,885	59	143,752	10.3	5,681	6.4	12,064	-	-	-
B	17	0.30	0.79	0.092	0.145	766	0.8	625	132	16	2,136	59	162,919	10.3	6,438	6.4	13,672	14,989	2,916	17,905
C	16	0.80	1.29	0.119	0.326	766	0.8	588	132	15	2,011	59	153,336	10.3	6,059	6.4	12,868	18,247	6,170	24,417
D	30	1.30	2.29	0.266	0.508	766	1.4	1,103	132	29	3,770	59	287,505	10.3	11,361	6.4	24,127	76,476	18,028	94,504
E	16	2.30	3.29	0.580	0.928	766	0.8	588	132	15	2,011	59	153,336	10.3	6,059	6.4	12,868	88,935	17,564	106,499
F	38	3.30		0.834	0.991	766	1.8	1,397	132	36	4,775	59	364,173	10.3	14,391	6.4	30,561	303,720	44,547	348,267
Total	132							4,853			16,588		1,265,021		49,989		106,160	502,367	89,225	591,592

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	22	-	0.29	-	-	766	1.1	809	132	21	2,765	59	210,837	10.3	8,332	6.4	17,693	-	-	-
B	36	0.30	0.79	0.092	0.145	766	1.7	1,324	132	34	4,524	59	345,006	10.3	13,634	6.4	28,953	31,741	6,175	37,916
C	24	0.80	1.29	0.119	0.326	766	1.2	882	132	23	3,016	59	230,004	10.3	9,089	6.4	19,302	27,370	9,255	36,625
D	33	1.30	2.29	0.266	0.508	766	1.6	1,213	132	31	4,147	59	316,255	10.3	12,497	6.4	26,540	84,124	19,831	103,955
E	28	2.30	3.29	0.580	0.928	766	1.3	1,030	132	27	3,519	59	268,338	10.3	10,604	6.4	22,519	155,636	30,738	186,374
F	51	3.30		0.834	0.991	766	2.4	1,875	132	49	6,409	59	488,758	10.3	19,314	6.4	41,017	407,624	59,788	467,412
Total	194							7,133			24,379		1,859,198		73,470		156,024	706,495	125,787	832,282

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	21	-	0.29	-	-	766	1.0	772	132	20	2,639	59	201,253	10.3	7,953	6.4	16,889	-	-	-
B	37	0.30	0.79	0.092	0.145	766	1.8	1,360	132	35	4,650	59	354,589	10.3	14,012	6.4	29,757	32,622	6,347	38,969
C	36	0.80	1.29	0.119	0.326	766	1.7	1,324	132	34	4,524	59	345,006	10.3	13,634	6.4	28,953	41,056	13,883	54,939
D	61	1.30	2.29	0.266	0.508	766	2.9	2,243	132	58	7,666	59	584,593	10.3	23,101	6.4	49,059	155,502	36,657	192,159
E	33	2.30	3.29	0.580	0.928	766	1.6	1,213	132	31	4,147	59	316,255	10.3	12,497	6.4	26,540	183,428	36,226	219,654
F	80	3.30		0.834	0.991	766	3.8	2,941	132	76	10,053	59	766,679	10.3	30,297	6.4	64,340	639,410	93,785	733,195
Total	268							9,854			33,678		2,568,375		101,494		215,538	1,052,018	186,898	1,238,916

Table I.5 Estimated Flood Damage to General Assets (19/28)
(Tra Khuc River Basin, With Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	766	-	-	132		-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	766	-	-	132	-	-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	766	-	-	132	-	-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	766	-	-	132	-	-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	766	-	-	132	-	-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	766	-	-	132	-	-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	766	-	-	132	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	3	-	0.29	-	-	766	0.1	110	132	3	377	59	28,750	10.3	1,136	6.4	2,413	-	-	-
B	3	0.30	0.79	0.092	0.145	766	0.1	110	132	3	377	59	28,750	10.3	1,136	6.4	2,413	2,645	515	3,160
C	3	0.80	1.29	0.119	0.326	766	0.1	110	132	3	377	59	28,750	10.3	1,136	6.4	2,413	3,421	1,157	4,578
D	4	1.30	2.29	0.266	0.508	766	0.2	147	132	4	503	59	38,334	10.3	1,515	6.4	3,217	10,197	2,404	12,601
E	7	2.30	3.29	0.580	0.928	766	0.3	257	132	7	880	59	67,084	10.3	2,651	6.4	5,630	38,909	7,685	46,594
F	-	3.30		0.834	0.991	766	-	-	132	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	20							735			2,513		191,668		7,574		16,086	55,172	11,761	66,933

Table I.5 Estimated Flood Damage to General Assets (20/28)
(Tra Khuc River Basin, With Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	5	-	0.29	-	-	766	0.2	184	132	5	628	59	47,917	10.3	1,894	6.4	4,021	-	-	-
B	7	0.30	0.79	0.092	0.145	766	0.3	257	132	7	880	59	67,084	10.3	2,651	6.4	5,630	6,172	1,201	7,373
C	8	0.80	1.29	0.119	0.326	766	0.4	294	132	8	1,005	59	76,668	10.3	3,030	6.4	6,434	9,123	3,085	12,208
D	11	1.30	2.29	0.266	0.508	766	0.5	404	132	10	1,382	59	105,418	10.3	4,166	6.4	8,847	28,041	6,611	34,652
E	7	2.30	3.29	0.580	0.928	766	0.3	257	132	7	880	59	67,084	10.3	2,651	6.4	5,630	38,909	7,685	46,594
F	16	3.30		0.834	0.991	766	0.8	588	132	15	2,011	59	153,336	10.3	6,059	6.4	12,868	127,882	18,757	146,639
Total	54							1,985			6,786		517,507		20,451		43,430	210,127	37,339	247,466

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	10	-	0.29	-	-	766	0.5	368	132	10	1,257	59	95,835	10.3	3,787	6.4	8,042	-	-	-
B	17	0.30	0.79	0.092	0.145	766	0.8	625	132	16	2,136	59	162,919	10.3	6,438	6.4	13,672	14,989	2,916	17,905
C	16	0.80	1.29	0.119	0.326	766	0.8	588	132	15	2,011	59	153,336	10.3	6,059	6.4	12,868	18,247	6,170	24,417
D	15	1.30	2.29	0.266	0.508	766	0.7	552	132	14	1,885	59	143,752	10.3	5,681	6.4	12,064	38,238	9,014	47,252
E	15	2.30	3.29	0.580	0.928	766	0.7	552	132	14	1,885	59	143,752	10.3	5,681	6.4	12,064	83,376	16,467	99,843
F	25	3.30		0.834	0.991	766	1.2	919	132	24	3,142	59	239,587	10.3	9,468	6.4	20,106	199,816	29,308	229,124
Total	98							3,603			12,315		939,181		37,114		78,816	354,666	63,875	418,541

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	10	-	0.29	-	-	766	0.5	368	132	10	1,257	59	95,835	10.3	3,787	6.4	8,042	-	-	-
B	17	0.30	0.79	0.092	0.145	766	0.8	625	132	16	2,136	59	162,919	10.3	6,438	6.4	13,672	14,989	2,916	17,905
C	16	0.80	1.29	0.119	0.326	766	0.8	588	132	15	2,011	59	153,336	10.3	6,059	6.4	12,868	18,247	6,170	24,417
D	27	1.30	2.29	0.266	0.508	766	1.3	993	132	26	3,393	59	258,754	10.3	10,225	6.4	21,715	68,829	16,226	85,055
E	15	2.30	3.29	0.580	0.928	766	0.7	552	132	14	1,885	59	143,752	10.3	5,681	6.4	12,064	83,376	16,467	99,843
F	36	3.30		0.834	0.991	766	1.7	1,324	132	34	4,524	59	345,006	10.3	13,634	6.4	28,953	287,735	42,204	329,939
Total	121							4,449			15,205		1,159,602		45,824		97,314	473,176	83,983	557,159

Table I.5 Estimated Flood Damage to General Assets (21/28)
(Kone River Basin, Without Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	5	-	0.29	-	-	-	-	-	152	5	760	59	44,840	10.3	-	6.4	4,864	-	-	-
B	9	0.30	0.79	0.092	0.145	-	-	-	152	9	1,368	59	80,712	10.3	-	6.4	8,755	7,426	1,269	8,695
C	8	0.80	1.29	0.119	0.326	-	-	-	152	8	1,216	59	71,744	10.3	-	6.4	7,782	8,538	2,537	11,075
D	13	1.30	2.29	0.266	0.508	-	-	-	152	13	1,976	59	116,584	10.3	-	6.4	12,646	31,011	6,424	37,435
E	10	2.30	3.29	0.580	0.928	-	-	-	152	10	1,520	59	89,680	10.3	-	6.4	9,728	52,014	9,028	61,042
F	26	3.30		0.834	0.991	-	-	-	152	26	3,952	59	233,168	10.3	-	6.4	25,293	194,462	25,065	219,527
Total	71							-			10,792		636,728		-		69,068	293,451	44,323	337,774

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	10	-	0.29	-	-	-	-	-	152	10	1,520	59	89,680	10.3	-	6.4	9,728	-	-	-
B	10	0.30	0.79	0.092	0.145	-	-	-	152	10	1,520	59	89,680	10.3	-	6.4	9,728	8,251	1,411	9,662
C	8	0.80	1.29	0.119	0.326	-	-	-	152	8	1,216	59	71,744	10.3	-	6.4	7,782	8,538	2,537	11,075
D	18	1.30	2.29	0.266	0.508	-	-	-	152	18	2,736	59	161,424	10.3	-	6.4	17,510	42,939	8,895	51,834
E	9	2.30	3.29	0.580	0.928	-	-	-	152	9	1,368	59	80,712	10.3	-	6.4	8,755	46,813	8,125	54,938
F	32	3.30		0.834	0.991	-	-	-	152	32	4,864	59	286,976	10.3	-	6.4	31,130	239,338	30,850	270,188
Total	87							-			13,224		780,216		-		84,633	345,879	51,818	397,697

Table I.5 Estimated Flood Damage to General Assets (22/28)
(Kone River Basin, Without Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	10	-	0.29	-	-	-	-	-	152	10	1,520	59	89,680	10.3	-	6.4	9,728	-	-	-
B	16	0.30	0.79	0.092	0.145	-	-	-	152	16	2,432	59	143,488	10.3	-	6.4	15,565	13,201	2,257	15,458
C	9	0.80	1.29	0.119	0.326	-	-	-	152	9	1,368	59	80,712	10.3	-	6.4	8,755	9,605	2,854	12,459
D	18	1.30	2.29	0.266	0.508	-	-	-	152	18	2,736	59	161,424	10.3	-	6.4	17,510	42,939	8,895	51,834
E	13	2.30	3.29	0.580	0.928	-	-	-	152	13	1,976	59	116,584	10.3	-	6.4	12,646	67,619	11,735	79,354
F	36	3.30		0.834	0.991	-	-	-	152	36	5,472	59	322,848	10.3	-	6.4	35,021	269,255	34,706	303,961
Total	102							-			15,504		914,736		-		99,225	402,619	60,447	463,066

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	10	-	0.29	-	-	-	-	-	152	10	1,520	59	89,680	10.3	-	6.4	9,728	-	-	-
B	16	0.30	0.79	0.092	0.145	-	-	-	152	16	2,432	59	143,488	10.3	-	6.4	15,565	13,201	2,257	15,458
C	17	0.80	1.29	0.119	0.326	-	-	-	152	17	2,584	59	152,456	10.3	-	6.4	16,538	18,142	5,391	23,533
D	18	1.30	2.29	0.266	0.508	-	-	-	152	18	2,736	59	161,424	10.3	-	6.4	17,510	42,939	8,895	51,834
E	18	2.30	3.29	0.580	0.928	-	-	-	152	18	2,736	59	161,424	10.3	-	6.4	17,510	93,626	16,249	109,875
F	42	3.30		0.834	0.991	-	-	-	152	42	6,384	59	376,656	10.3	-	6.4	40,858	314,131	40,490	354,621
Total	121							-			18,392		1,085,128		-		117,709	482,039	73,282	555,321

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	10	-	0.29	-	-	-	-	-	152	10	1,520	59	89,680	10.3	-	6.4	9,728	-	-	-
B	16	0.30	0.79	0.092	0.145	-	-	-	152	16	2,432	59	143,488	10.3	-	6.4	15,565	13,201	2,257	15,458
C	17	0.80	1.29	0.119	0.326	-	-	-	152	17	2,584	59	152,456	10.3	-	6.4	16,538	18,142	5,391	23,533
D	26	1.30	2.29	0.266	0.508	-	-	-	152	26	3,952	59	233,168	10.3	-	6.4	25,293	62,023	12,849	74,872
E	17	2.30	3.29	0.580	0.928	-	-	-	152	17	2,584	59	152,456	10.3	-	6.4	16,538	88,424	15,347	103,771
F	51	3.30		0.834	0.991	-	-	-	152	51	7,752	59	457,368	10.3	-	6.4	49,613	381,445	49,166	430,611
Total	137							-			20,824		1,228,616		-		133,275	563,235	85,010	648,245

Table I.5 Estimated Flood Damage to General Assets (23/28)
(Kone River Basin, With Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	-	-	-	152		-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Table I.5 Estimated Flood Damage to General Assets (24/28)
(Kone River Basin, With Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	1	-	0.29	-	-	-	-	-	152	1	152	59	8,968	10.3	-	6.4	973	-	-	-
B	2	0.30	0.79	0.092	0.145	-	-	-	152	2	304	59	17,936	10.3	-	6.4	1,946	1,650	282	1,932
C	2	0.80	1.29	0.119	0.326	-	-	-	152	2	304	59	17,936	10.3	-	6.4	1,946	2,134	634	2,768
D	7	1.30	2.29	0.266	0.508	-	-	-	152	7	1,064	59	62,776	10.3	-	6.4	6,810	16,698	3,459	20,157
E	-	2.30	3.29	0.580	0.928	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
F	-	3.30		0.834	0.991	-	-	-	152	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	12							-			1,824		107,616		-		11,675	20,482	4,375	24,857

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	2	-	0.29	-	-	-	-	-	152	2	304	59	17,936	10.3	-	6.4	1,946	-	-	-
B	4	0.30	0.79	0.092	0.145	-	-	-	152	4	608	59	35,872	10.3	-	6.4	3,891	3,300	564	3,864
C	3	0.80	1.29	0.119	0.326	-	-	-	152	3	456	59	26,904	10.3	-	6.4	2,918	3,202	951	4,153
D	5	1.30	2.29	0.266	0.508	-	-	-	152	5	760	59	44,840	10.3	-	6.4	4,864	11,927	2,471	14,398
E	3	2.30	3.29	0.580	0.928	-	-	-	152	3	456	59	26,904	10.3	-	6.4	2,918	15,604	2,708	18,312
F	10	3.30		0.834	0.991	-	-	-	152	10	1,520	59	89,680	10.3	-	6.4	9,728	74,793	9,640	84,433
Total	27							-			4,104		242,136		-		26,265	108,826	16,334	125,160

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	3	-	0.29	-	-	-	-	-	152	3	456	59	26,904	10.3	-	6.4	2,918	-	-	-
B	5	0.30	0.79	0.092	0.145	-	-	-	152	5	760	59	44,840	10.3	-	6.4	4,864	4,125	705	4,830
C	4	0.80	1.29	0.119	0.326	-	-	-	152	4	608	59	35,872	10.3	-	6.4	3,891	4,269	1,268	5,537
D	8	1.30	2.29	0.266	0.508	-	-	-	152	8	1,216	59	71,744	10.3	-	6.4	7,782	19,084	3,953	23,037
E	5	2.30	3.29	0.580	0.928	-	-	-	152	5	760	59	44,840	10.3	-	6.4	4,864	26,007	4,514	30,521
F	15	3.30		0.834	0.991	-	-	-	152	15	2,280	59	134,520	10.3	-	6.4	14,592	112,190	14,461	126,651
Total	40							-			6,080		358,720		-		38,911	165,675	24,901	190,576

Table I.5 Estimated Flood Damage to General Assets (25/28)
(Ba River Basin, Without Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	2	-	0.29	-	-	129	1	69	60	1	88	59	9,262	10.3	712	6.4	562	-	-	-
B	3	0.30	0.79	0.092	0.145	129	1	104	60	2	132	59	13,893	10.3	1,068	6.4	843	1,278	277	1,555
C	3	0.80	1.29	0.119	0.326	129	1	104	60	2	132	59	13,893	10.3	1,068	6.4	843	1,653	623	2,276
D	5	1.30	2.29	0.266	0.508	129	1	173	60	4	220	59	23,155	10.3	1,780	6.4	1,405	6,159	1,618	7,777
E	6	2.30	3.29	0.580	0.928	129	2	207	60	4	264	59	27,786	10.3	2,137	6.4	1,687	16,116	3,549	19,665
F	-	3.30		0.834	0.991	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	19							657			834		87,989		6,765		5,340	25,206	6,067	31,273

Table I.5 Estimated Flood Damage to General Assets (26/28)
(Ba River Basin, Without Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	3	-	0.29	-	-	129	1	104	60	2	132	59	13,893	10.3	1,068	6.4	843	-	-	-
B	7	0.30	0.79	0.092	0.145	129	2	242	60	5	307	59	32,417	10.3	2,493	6.4	1,968	2,982	647	3,629
C	6	0.80	1.29	0.119	0.326	129	2	207	60	4	264	59	27,786	10.3	2,137	6.4	1,687	3,307	1,247	4,554
D	11	1.30	2.29	0.266	0.508	129	3	380	60	8	483	59	50,941	10.3	3,917	6.4	3,092	13,550	3,561	17,111
E	6	2.30	3.29	0.580	0.928	129	2	207	60	4	264	59	27,786	10.3	2,137	6.4	1,687	16,116	3,549	19,665
F	17	3.30		0.834	0.991	129	5	588	60	12	747	59	78,727	10.3	6,054	6.4	4,778	65,658	10,735	76,393
Total	50							1,729			2,196		231,550		17,806		14,055	101,613	19,739	121,352

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	9	-	0.29	-	-	129	2	311	60	7	395	59	41,679	10.3	3,205	6.4	2,530	-	-	-
B	13	0.30	0.79	0.092	0.145	129	3	449	60	10	571	59	60,203	10.3	4,629	6.4	3,654	5,539	1,201	6,740
C	13	0.80	1.29	0.119	0.326	129	3	449	60	10	571	59	60,203	10.3	4,629	6.4	3,654	7,164	2,700	9,864
D	22	1.30	2.29	0.266	0.508	129	6	761	60	16	966	59	101,883	10.3	7,834	6.4	6,184	27,101	7,121	34,222
E	13	2.30	3.29	0.580	0.928	129	3	449	60	10	571	59	60,203	10.3	4,629	6.4	3,654	34,918	7,687	42,605
F	35	3.30		0.834	0.991	129	9	1,210	60	26	1,537	59	162,086	10.3	12,463	6.4	9,838	135,180	22,100	157,280
Total	105							3,630			4,612		486,257		37,389		29,514	209,902	40,809	250,711

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	16	-	0.29	-	-	129	4	553	60	12	703	59	74,096	10.3	5,697	6.4	4,497	-	-	-
B	26	0.30	0.79	0.092	0.145	129	7	899	60	19	1,142	59	120,407	10.3	9,258	6.4	7,308	11,077	2,402	13,479
C	26	0.80	1.29	0.119	0.326	129	7	899	60	19	1,142	59	120,407	10.3	9,258	6.4	7,308	14,328	5,401	19,729
D	30	1.30	2.29	0.266	0.508	129	8	1,037	60	22	1,318	59	138,931	10.3	10,683	6.4	8,433	36,956	9,711	46,667
E	26	2.30	3.29	0.580	0.928	129	7	899	60	19	1,142	59	120,407	10.3	9,258	6.4	7,308	69,836	15,373	85,209
F	54	3.30		0.834	0.991	129	14	1,867	60	40	2,372	59	250,076	10.3	19,229	6.4	15,179	208,563	34,098	242,661
Total	178							6,154			7,818		824,324		63,383		50,033	340,760	66,985	407,745

Table I.5 Estimated Flood Damage to General Assets (27/28)
(Ba River Basin, With Project (1/2))

Flood Scale: 2-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	129	-	-	60		-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 5-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Flood Scale: 10-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A		-	0.29	-	-	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
B		0.30	0.79	0.092	0.145	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
C		0.80	1.29	0.119	0.326	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
D		1.30	2.29	0.266	0.508	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
E		2.30	3.29	0.580	0.928	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
F		3.30		0.834	0.991	129	-	-	60	-	-	59	-	10.3	-	6.4	-	-	-	-
Total	-							-			-		-		-		-	-	-	-

Table I.5 Estimated Flood Damage to General Assets (28/28)
(Ba River Basin, With Project (2/2))

Flood Scale: 20-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	4	-	0.29	-	-	129	1	138	60	3	176	59	18,524	10.3	1,424	6.4	1,124	-	-	-
B	7	0.30	0.79	0.092	0.145	129	2	242	60	5	307	59	32,417	10.3	2,493	6.4	1,968	2,982	647	3,629
C	4	0.80	1.29	0.119	0.326	129	1	138	60	3	176	59	18,524	10.3	1,424	6.4	1,124	2,204	831	3,035
D	6	1.30	2.29	0.266	0.508	129	2	207	60	4	264	59	27,786	10.3	2,137	6.4	1,687	7,391	1,943	9,334
E	6	2.30	3.29	0.580	0.928	129	2	207	60	4	264	59	27,786	10.3	2,137	6.4	1,687	16,116	3,549	19,665
F	11	3.30		0.834	0.991	129	3	380	60	8	483	59	50,941	10.3	3,917	6.4	3,092	42,485	6,946	49,431
Total	38							1,314			1,669		175,978		13,532		10,682	71,178	13,916	85,094

Flood Scale: 50-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	7	-	0.29	-	-	129	2	242	60	5	307	59	32,417	10.3	2,493	6.4	1,968	-	-	-
B	13	0.30	0.79	0.092	0.145	129	3	449	60	10	571	59	60,203	10.3	4,629	6.4	3,654	5,539	1,201	6,740
C	13	0.80	1.29	0.119	0.326	129	3	449	60	10	571	59	60,203	10.3	4,629	6.4	3,654	7,164	2,700	9,864
D	17	1.30	2.29	0.266	0.508	129	5	588	60	12	747	59	78,727	10.3	6,054	6.4	4,778	20,941	5,503	26,444
E	13	2.30	3.29	0.580	0.928	129	3	449	60	10	571	59	60,203	10.3	4,629	6.4	3,654	34,918	7,687	42,605
F	29	3.30		0.834	0.991	129	8	1,003	60	21	1,274	59	134,300	10.3	10,327	6.4	8,152	112,006	18,313	130,319
Total	92							3,181			4,041		426,053		32,761		25,860	180,568	35,404	215,972

Flood Scale: 100-Year

Areas	Flood Condition			Damage rate		Number of houses including househokd shops and industries						House		Household durable goods				Damage to General Assets		
	Area	Inundation Depth		House	Household durable goods	Major city/town			Other district			Unit value of house	Total value of house	Major city/town		Other district		Damage to house	Damage to household goods	Total
		from	to			Density of house	Area	Number of houses	Density of house	Area	Number of houses			Unit value of household goods	Total value of household goods	Unit value of household goods	Total value of household goods			
	(km2)	(m)	(m)			(house/km2)	(km2)	(house)	(house/km2)	(km2)	(house)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)	(VND Million)
	a	b	c	d	e	f	g	h=f x g	i	j	k=i x j	l	m=l x (h+k)	n	o=n x h	p	q=p x k	r=m x d	s=(o+q) x e	t=r + s
A	16	-	0.29	-	-	129	4	553	60	12	703	59	74,096	10.3	5,697	6.4	4,497	-	-	-
B	26	0.30	0.79	0.092	0.145	129	7	899	60	19	1,142	59	120,407	10.3	9,258	6.4	7,308	11,077	2,402	13,479
C	23	0.80	1.29	0.119	0.326	129	6	795	60	17	1,010	59	106,514	10.3	8,190	6.4	6,465	12,675	4,778	17,453
D	26	1.30	2.29	0.266	0.508	129	7	899	60	19	1,142	59	120,407	10.3	9,258	6.4	7,308	32,028	8,416	40,444
E	24	2.30	3.29	0.580	0.928	129	6	830	60	18	1,054	59	111,145	10.3	8,546	6.4	6,746	64,464	14,191	78,655
F	50	3.30		0.834	0.991	129	13	1,729	60	37	2,196	59	231,551	10.3	17,805	6.4	14,054	193,114	31,572	224,686
Total	165							5,704			7,247		764,120		58,754		46,378	313,358	61,359	374,717

Table I.6 Estimation of Probable Flood Damage (1/14)
(Ma River Basin, Without Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	2,848	234	3,082	1,017	1,110	185	894	6,288	6,288
	100	-	-	-	33,959	3,683	37,642	12,422	13,551	2,259	10,916	76,790	76,790

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	-	-	-	-	-
	10	0.10	0.10	-	-	-	-	-
	20	0.05	0.05	-	-	-	-	-
	50	0.02	0.03	6,288	3,144	94	94	0.01
	100	0.010	0.01	76,790	41,539	415	510	0.03

Table I.6 Estimation of Probable Flood Damage (2/14)
(Ma River Basin, With Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	-	-	-	-	-	-	-	-	-
	50	-	-	-	-	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	-	-	-	-	-
	10	0.10	0.10	-	-	-	-	-
	20	0.05	0.05	-	-	-	-	-
	50	0.02	0.03	-	-	-	-	-
	100	0.010	0.01	-	-	-	-	-

Table I.6 Estimation of Probable Flood Damage (3/14)
(Thach Han River Basin, Without Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	13,001	-	13,001	96,862	10,820	107,682	35,535	38,766	6,461	31,228	219,672	232,673
	10	18,343	-	18,343	140,927	15,801	156,728	51,720	56,422	9,404	45,451	319,725	338,068
	20	18,343	-	18,343	174,847	19,505	194,352	64,136	69,967	11,661	56,362	396,478	414,821
	50	18,343	-	18,343	230,108	26,016	256,124	84,521	92,205	15,367	74,276	522,493	540,836
	100	18,343	-	18,343	286,594	32,119	318,713	105,175	114,737	19,123	92,427	650,175	668,518

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	232,673	116,337	34,901	34,901	2.32
	10	0.10	0.10	338,068	285,371	28,537	63,438	4.21
	20	0.05	0.05	414,821	376,445	18,822	82,260	5.46
	50	0.02	0.03	540,836	477,829	14,335	96,595	6.41
	100	0.010	0.01	668,518	604,677	6,047	102,642	6.81

Table I.6 Estimation of Probable Flood Damage (4/14)
(Thach Han River Basin, With Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	4,236	-	4,236	25,269	3,451	28,720	9,478	10,339	1,723	8,329	58,589	62,825
	10	7,312	-	7,312	54,481	6,147	60,628	20,007	21,826	3,638	17,582	123,681	130,993
	20	7,312	-	7,312	58,660	6,606	65,266	21,538	23,496	3,916	18,927	133,143	140,455
	50	7,312	-	7,312	64,484	7,291	71,775	23,686	25,839	4,307	20,815	146,422	153,734
	100	7,312	-	7,312	72,843	8,208	81,051	26,747	29,178	4,863	23,505	165,344	172,656

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	62,825	31,413	9,424	9,424	0.63
	10	0.10	0.10	130,993	96,909	9,691	19,115	1.27
	20	0.05	0.05	140,455	135,724	6,786	25,901	1.72
	50	0.02	0.03	153,734	147,095	4,413	30,314	2.01
	100	0.010	0.01	172,656	163,195	1,632	31,946	2.12

Table I.6 Estimation of Probable Flood Damage (5/14)
(Huong River Basin, Without Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	108,522	10,430	118,952	39,254	42,823	7,137	34,496	242,662	242,662
	5	2,767	-	2,767	295,193	33,738	328,931	108,547	118,415	19,736	95,390	671,019	673,786
	10	5,489	-	5,489	501,476	70,981	572,457	188,911	206,085	34,347	166,013	1,167,813	1,173,302
	20	5,489	-	5,489	841,726	142,769	984,495	324,883	354,418	59,070	285,504	2,008,370	2,013,859
	50	5,489	-	5,489	1,208,585	208,660	1,417,245	481,123	523,549	86,227	419,585	2,927,729	2,933,218
	100	5,489	-	5,489	1,670,088	283,924	1,954,012	644,824	703,444	117,241	566,663	3,986,184	3,991,673

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	242,662	121,331	60,666	60,666	4.03
	5	0.20	0.30	673,786	458,224	137,467	198,133	13.15
	10	0.10	0.10	1,173,302	923,544	92,354	290,487	19.28
	20	0.05	0.05	2,013,859	1,593,581	79,679	370,166	24.57
	50	0.02	0.03	2,933,218	2,473,539	74,206	444,372	29.49
	100	0.010	0.01	3,991,673	3,462,446	34,624	478,997	31.79

Table I.6 Estimation of Probable Flood Damage (6/14)
(Huong River Basin, With Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	13,857	1,612	15,469	5,105	5,569	928	4,486	31,557	31,557
	50	-	-	-	72,649	6,837	79,486	26,230	28,615	4,769	23,051	162,151	162,151
	100	-	-	-	184,617	18,716	203,333	67,100	73,200	12,200	58,967	414,800	414,800

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	-	-	-	-	-
	10	0.10	0.10	-	-	-	-	-
	20	0.05	0.05	31,557	15,779	789	789	0.05
	50	0.02	0.03	162,151	96,854	2,906	3,695	0.25
	100	0.010	0.01	414,800	288,476	2,885	6,579	0.44

Table I.6 Estimation of Probable Flood Damage (7/14)
(Vu Gia-Thu Bon River Basin, Without Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	12,075	-	12,075	75,689	13,225	88,914	29,342	32,009	5,335	25,785	181,385	193,460
	10	14,497	-	14,497	91,048	16,142	107,190	35,373	38,588	6,431	31,085	218,667	233,164
	20	14,497	-	14,497	163,561	28,324	191,885	63,322	69,079	11,513	55,647	391,446	405,943
	50	14,497	-	14,497	527,655	91,019	618,674	204,162	222,723	37,120	179,415	1,262,094	1,276,591
	100	14,497	-	14,497	979,269	170,998	1,150,267	379,588	414,096	69,016	333,577	2,346,544	2,361,041

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	193,460	96,730	29,019	29,019	1.93
	10	0.10	0.10	233,164	213,312	21,331	50,350	3.34
	20	0.05	0.05	405,943	319,554	15,978	66,328	4.40
	50	0.02	0.03	1,276,591	841,267	25,238	91,566	6.08
	100	0.010	0.01	2,361,041	1,818,816	18,188	109,754	7.28

Table I.6 Estimation of Probable Flood Damage (8/14)
(Vu Gia-Thu Bon River Basin, With Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	8,928	-	8,928	56,546	9,903	66,449	21,928	23,922	3,987	19,270	135,556	144,484
	10	9,108	-	9,108	57,671	10,152	67,823	22,382	24,416	4,069	19,669	138,359	147,467
	20	9,108	-	9,108	69,619	12,099	81,718	26,967	29,418	4,903	23,698	166,704	175,812
	50	9,108	-	9,108	75,575	13,136	88,711	29,275	31,936	5,323	25,726	180,971	190,079
	100	9,108	-	9,108	81,547	14,239	95,786	31,609	34,483	5,747	27,778	195,403	204,511

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	144,484	72,242	21,673	21,673	1.44
	10	0.10	0.10	147,467	145,976	14,598	36,270	2.41
	20	0.05	0.05	175,812	161,640	8,082	44,352	2.94
	50	0.02	0.03	190,079	182,946	5,488	49,840	3.31
	100	0.010	0.01	204,511	197,295	1,973	51,813	3.44

Table I.6 Estimation of Probable Flood Damage (9/14)
(Tra Khuc River Basin, Without Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	16,556	-	16,556	282,252	49,924	332,176	109,618	119,583	19,931	96,331	677,639	694,195
	10	22,716	-	22,716	384,000	68,808	452,808	149,427	163,011	27,168	131,314	923,728	946,444
	20	22,716	-	22,716	502,367	89,225	591,592	195,225	212,973	35,496	171,562	1,206,848	1,229,564
	50	22,716	-	22,716	706,495	125,787	832,282	274,653	299,622	49,937	241,362	1,697,856	1,720,572
	100	22,716	-	22,716	1,052,018	186,898	1,238,916	408,842	446,010	74,335	359,286	2,527,389	2,550,105

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	694,195	347,098	104,129	104,129	6.91
	10	0.10	0.10	946,444	820,320	82,032	186,161	12.35
	20	0.05	0.05	1,229,564	1,088,004	54,400	240,561	15.97
	50	0.02	0.03	1,720,572	1,475,068	44,252	284,813	18.90
	100	0.010	0.01	2,550,105	2,135,339	21,353	306,167	20.32

Table I.6 Estimation of Probable Flood Damage (10/14)
(Tra Khuc River Basin, With Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-
	10	4,327	-	4,327	55,172	11,761	66,933	22,088	24,096	4,016	19,411	136,544	140,871
	20	4,327	-	4,327	210,127	37,339	247,466	81,664	89,088	14,848	71,765	504,831	509,158
	50	4,327	-	4,327	354,666	63,875	418,541	138,119	150,675	25,112	121,377	853,824	858,151
	100	4,327	-	4,327	473,176	83,983	557,159	183,862	200,577	33,430	161,576	1,136,604	1,140,931

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	-	-	-	-	-
	10	0.10	0.10	140,871	70,436	7,044	7,044	0.47
	20	0.05	0.05	509,158	325,015	16,251	23,294	1.55
	50	0.02	0.03	858,151	683,655	20,510	43,804	2.91
	100	0.010	0.01	1,140,931	999,541	9,995	53,799	3.57

Table I.6 Estimation of Probable Flood Damage (11/14)
(Kone River Basin, Without Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	16,112	-	16,112	293,451	44,323	337,774	111,465	121,599	20,266	97,954	689,058	705,170
	10	19,377	-	19,377	345,879	51,818	397,697	131,240	143,171	23,862	115,332	811,302	830,679
	20	19,377	-	19,377	402,619	60,447	463,066	152,812	166,704	27,784	134,289	944,655	964,032
	50	19,377	-	19,377	482,039	73,282	555,321	183,256	199,916	33,319	161,043	1,132,855	1,152,232
	100	19,377	-	19,377	563,235	85,010	648,245	213,921	233,368	38,895	187,991	1,322,420	1,341,797

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	705,170	352,585	105,776	105,776	7.02
	10	0.10	0.10	830,679	767,925	76,792	182,568	12.12
	20	0.05	0.05	964,032	897,356	44,868	227,436	15.09
	50	0.02	0.03	1,152,232	1,058,132	31,744	259,180	17.20
	100	0.010	0.01	1,341,797	1,247,015	12,470	271,650	18.03

Table I.6 Estimation of Probable Flood Damage (12/14)
(Kone River Basin, With Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	20,482	4,375	24,857	8,203	8,949	1,491	7,209	50,709	50,709
	50	-	-	-	108,826	16,334	125,160	41,303	45,058	7,510	36,296	255,327	255,327
	100	-	-	-	165,675	24,901	190,576	62,890	68,607	11,435	55,267	388,775	388,775

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	-	-	-	-	-
	10	0.10	0.10	-	-	-	-	-
	20	0.05	0.05	50,709	25,355	1,268	1,268	0.08
	50	0.02	0.03	255,327	153,018	4,591	5,858	0.39
	100	0.010	0.01	388,775	322,051	3,221	9,079	0.60

Table I.6 Estimation of Probable Flood Damage (13/14)
(Ba River Basin, Without Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-
	10	4,191	-	4,191	25,206	6,067	31,273	10,320	11,258	1,876	9,069	63,796	67,987
	20	4,191	-	4,191	101,613	19,739	121,352	40,046	43,687	7,281	35,192	247,558	251,749
	50	4,191	-	4,191	209,902	40,809	250,711	82,735	90,256	15,043	72,706	511,451	515,642
	100	4,191	-	4,191	340,760	66,985	407,745	134,556	146,788	24,465	118,246	831,800	835,991

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	-	-	-	-	-
	10	0.10	0.10	67,987	33,994	3,399	3,399	0.23
	20	0.05	0.05	251,749	159,868	7,993	11,393	0.76
	50	0.02	0.03	515,642	383,696	11,511	22,904	1.52
	100	0.010	0.01	835,991	675,817	6,758	29,662	1.97

Table I.6 Estimation of Probable Flood Damage (14/14)
(Ba River Basin, With Project)

(1) Estimation of Flood Damage by Magnitude of Flood

Unit: VND Million

River System	Return Period (Year)	Early Flood			Major Flood								Total
		Crops			1. House			2. River facilities and infrastructure /1	3. Business activities /2	4. Welfare and cultural facilities /3	5. Other /4	Sub-total	
		Paddy	Upland crop	Sub-total	House	Household durable goods	Sub-total						
	a	b	c	d=b+c	e	f	g=e+f	h=g x 33%	i=g x 36%	j=g x 6%	k=g x 29%	l=g+h+i+j+k	m=d+l
Huong River	2	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	71,178	13,916	85,094	28,081	30,634	5,106	24,677	173,592	173,592
	50	-	-	-	180,568	35,404	215,972	71,271	77,750	12,958	62,632	440,583	440,583
	100	-	-	-	313,358	61,359	374,717	123,657	134,898	22,483	108,668	764,423	764,423

Note: /1 This item includes the damages to the facilitiies for flood prevention, water utilization, transportation, fishery, electricity, and post office.
/2 This item includes the damages to crops, forest, livestock, aquaculture, factories, shops, offices, machines, materials, and products.
/3 This item includes the damages to the facilities for cultural sector, health care, and education.
/4 This item includes the damages to administrative sector, armaments, and others.

(2) Estimation of Annual Mean Flood Damage

River System	Return Period	Exceedance	Difference of Exceedance	Damage (VND Million)		Annual Damage (VND Million)		Equivalent US$ million
				Amount	Mean	Segment	Cumulative	
Huong River	-	1.00						
	2	0.50	0.50	-	-	-	-	-
	5	0.20	0.30	-	-	-	-	-
	10	0.10	0.10	-	-	-	-	-
	20	0.05	0.05	173,592	86,796	4,340	4,340	0.29
	50	0.02	0.03	440,583	307,088	9,213	13,552	0.90
	100	0.010	0.01	764,423	602,503	6,025	19,577	1.30

Table I.7 Irrigation Benefit (1/11)
(Bang Giang & Ky Cung River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$439 /ha	**106,400 ha**	**29,636,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**42,600 ha**	**13,904,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	5,000 ha	1,000,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	0 ha	0
Maize	Irrigated	144	-	2.50	360	216	60%	144	10,000 ha	1,440,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	6,300 ha	655,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	2,000 ha	328,000
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	0 ha	0
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	1,000 ha	180,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	0 ha	0
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	7,000 ha	4,662,000
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	11,300 ha	5,639,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**48,600 ha**	**10,064,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	25,000 ha	5,000,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	11,000 ha	1,265,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	6,300 ha	655,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	0 ha	0
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	0 ha	0
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	0 ha	0
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	6,300 ha	3,144,000
3. Year Round Crop									**10,000 ha**	**4,004,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	500 ha	280,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	9,500 ha	3,724,000
4. Perenial Crop									**5,200 ha**	**1,664,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	0 ha	0
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	5,200 ha	1,664,000
Future Condition								$1,119 /ha	**123,500 ha**	**75,564,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**56,000 ha**	**39,164,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	7,000 ha	2,625,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	22,000 ha	7,612,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	3,000 ha	795,000
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	2,000 ha	676,000
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	22,000 ha	27,456,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**56,000 ha**	**29,440,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	36,000 ha	13,500,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	10,000 ha	3,460,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	0 ha	0
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	10,000 ha	12,480,000
3. Year Round Crop									**2,500 ha**	**210,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	2,500 ha	210,000
4. Perenial Crop									**9,000 ha**	**6,750,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	9,000 ha	6,750,000
Increment	0.90 (SCF)	139	per ton					$680 /ha	**17,100 ha**	**45,928,000**
								Irrigation Area	67,500 ha	

Table I.7 Irrigation Benefit (2/11)
(Ma River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$344 /ha	**352,100 ha**	**68,540,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**152,500 ha**	**26,901,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	91,000 ha	18,200,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	32,000 ha	3,680,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	12,200 ha	1,269,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	8,200 ha	992,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	4,700 ha	564,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	0 ha	0
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	4,400 ha	2,196,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**172,500 ha**	**30,476,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	106,000 ha	21,200,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	37,000 ha	4,255,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	12,200 ha	1,269,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	8,200 ha	992,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	4,700 ha	564,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	0 ha	0
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	4,400 ha	2,196,000
3. Year Round Crop									**20,600 ha**	**9,083,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	6,000 ha	3,360,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	14,600 ha	5,723,000
4. Perenial Crop									**6,500 ha**	**2,080,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	0 ha	0
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	6,500 ha	2,080,000
Future Condition								$699 /ha	**354,500 ha**	**139,479,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**155,000 ha**	**64,860,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	144,000 ha	54,000,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	1,000 ha	346,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	2,000 ha	530,000
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	0 ha	0
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	8,000 ha	9,984,000
2. Summer - Autumun Crop		-	-	-	-	-	-	-	**164,000 ha**	**67,974,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	144,000 ha	54,000,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	10,000 ha	3,460,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	2,000 ha	530,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	0 ha	0
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	8,000 ha	9,984,000
3. Year Round Crop									**30,000 ha**	**2,520,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	30,000 ha	2,520,000
4. Perenial Crop									**5,500 ha**	**4,125,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	5,500 ha	4,125,000
Increment	0.90 (SCF)	139	per ton					$356 /ha	**2,400 ha**	**70,939,000**
								Irrigation Area	199,500 ha	

Table I.7 Irrigation Benefit (3/11)
(Ca River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$352 /ha	**374,000 ha**	**71,370,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**180,000 ha**	**33,059,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	67,000 ha	13,400,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	47,000 ha	5,405,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	1,000 ha	144,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	10,000 ha	1,040,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	11,000 ha	1,804,000
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	11,000 ha	1,331,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	10,500 ha	1,890,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	9,500 ha	1,140,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	2,500 ha	1,665,000
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	10,500 ha	5,240,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**180,000 ha**	**33,087,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	88,000 ha	17,600,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	59,000 ha	6,785,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	1,000 ha	144,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	10,000 ha	1,040,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	1,000 ha	164,000
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	5,000 ha	605,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	500 ha	90,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	3,500 ha	420,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	1,500 ha	999,000
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	10,500 ha	5,240,000
3. Year Round Crop									**8,000 ha**	**3,304,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	1,000 ha	560,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	7,000 ha	2,744,000
4. Perenial Crop									**6,000 ha**	**1,920,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	0 ha	0
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	6,000 ha	1,920,000
Future Condition								$767 /ha	**365,000 ha**	**155,639,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**162,000 ha**	**65,515,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	103,000 ha	38,625,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	9,000 ha	3,114,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	18,000 ha	4,770,000
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	23,000 ha	7,774,000
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	9,000 ha	11,232,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**162,000 ha**	**66,700,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	132,000 ha	49,500,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	9,000 ha	3,114,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	4,000 ha	1,060,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	9,000 ha	3,042,000
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	8,000 ha	9,984,000
3. Year Round Crop									**11,000 ha**	**924,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	11,000 ha	924,000
4. Perenial Crop									**30,000 ha**	**22,500,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	30,000 ha	22,500,000
Increment	0.90 (SCF)	139	per ton					$415 /ha	**-9,000**	**84,269,000**
								Irrigation Area	203,000 ha	

Table I.7 Irrigation Benefit (4/11)
(Thach Han River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$339 /ha	**25,700 ha**	**5,221,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**11,200 ha**	**1,943,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	4,000 ha	800,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	5,000 ha	575,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	300 ha	31,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	300 ha	49,000
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	400 ha	48,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	300 ha	54,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	300 ha	36,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	300 ha	200,000
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	300 ha	150,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**10,300 ha**	**1,840,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	4,000 ha	800,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	4,100 ha	472,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	300 ha	31,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	300 ha	49,000
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	400 ha	48,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	300 ha	54,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	300 ha	36,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	300 ha	200,000
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	300 ha	150,000
3. Year Round Crop									**1,200 ha**	**470,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	0 ha	0
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	1,200 ha	470,000
4. Perenial Crop									**3,000 ha**	**968,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	100 ha	40,000
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	2,900 ha	928,000
Future Condition								$726 /ha	**26,600 ha**	**11,181,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**12,200 ha**	**4,711,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	9,000 ha	3,375,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	1,400 ha	484,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	400 ha	106,000
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	1,100 ha	372,000
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	300 ha	374,000
2. Summer - Autumun Crop		-	-	-	-	-	-	-	**11,200 ha**	**4,336,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	8,000 ha	3,000,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	1,400 ha	484,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	400 ha	106,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	1,100 ha	372,000
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	300 ha	374,000
3. Year Round Crop									**400 ha**	**34,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	400 ha	34,000
4. Perenial Crop									**2,800 ha**	**2,100,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	2,800 ha	2,100,000
Increment	0.90 (SCF)	139	per ton					$387 /ha	**900 ha**	**5,960,000**
								Irrigation Area	15,400 ha	

Table I.7 Irrigation Benefit (5/11)
(Huong River Project)

Crop			Net Income per ha (US$/ha)							Total	
			Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
			US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition									$307 /ha	**44,386 ha**	**7,949,000**
1. Winter - Spring Crop			-	-	-	-	-	-	-	**25,900 ha**	**4,366,000**
Paddy		Irrigated	125	-	2.80	350	210	60%	140	18,022 ha	2,523,000
Maize		Rainfed	144	-	1.20	173	104	60%	69	78 ha	5,000
Sweet Potatoes		Rainfed	63	-	4.80	302	181	60%	121	4,838 ha	585,000
Groundnuts		Rainfed	375	-	1.20	450	270	60%	180	706 ha	127,000
Vegetables		Rainfed	208	-	6.00	1,248	749	60%	499	2,256 ha	1,126,000
2. Summer - Autumn Crop			-	-	-	-	-	-	-	**18,486 ha**	**3,583,000**
Paddy		Irrigated	125	-	3.00	375	225	60%	150	15,197 ha	2,280,000
Maize		Rainfed	144	-	1.20	173	104	60%	69	79 ha	5,000
Groundnuts		Rainfed	375	-	1.20	450	270	60%	180	954 ha	172,000
Vegetables		Rainfed	208	-	6.00	1,248	749	60%	499	2,256 ha	1,126,000
Future Condition									$864 /ha	**51,800 ha**	**22,376,000**
1. Winter - Spring Crop			-	-	-	-	-	-	-	**25,900 ha**	**11,062,000**
Paddy		Irrigated	125	100%	5.00	625	250	40%	375	19,912 ha	7,467,000
Maize		Irrigated	144	115%	4.00	576	230	40%	346	460 ha	159,000
Sweet Potatoes		Irrigated	63	50%	7.00	441	176	40%	265	3,456 ha	916,000
Groundnuts		Irrigated	375	300%	1.50	563	225	40%	338	72 ha	24,000
Vegetables		Irrigated	208	166%	10.00	2,080	832	40%	1,248	2,000 ha	2,496,000
2. Summer - Autumn Crop			-	-	-	-	-	-	-	**25,900 ha**	**11,314,000**
Paddy		Irrigated	125	-	5.00	625	250	40%	375	19,912 ha	7,467,000
Maize		Irrigated	144	-	4.00	576	230	40%	346	460 ha	159,000
Groundnuts		Irrigated	375	-	1.50	563	225	40%	338	3,528 ha	1,192,000
Vegetables		Irrigated	208	-	10.00	2,080	832	40%	1,248	2,000 ha	2,496,000
Increment	0.90	(SCF)	139	per ton					$557 /ha	**7,414 ha**	**14,427,000**
									Irrigation Area	25,900 ha	

Table I.7 Irrigation Benefit (6/11)
(Vu Gia-Thu Bon River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$369 /ha	**138,400 ha**	**28,426,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**61,500 ha**	**11,252,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	26,000 ha	5,200,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	23,000 ha	2,645,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	500 ha	72,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	1,700 ha	177,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	300 ha	49,000
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	3,000 ha	363,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	300 ha	54,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	2,600 ha	312,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	2,000 ha	1,332,000
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	2,100 ha	1,048,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**61,500 ha**	**11,252,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	26,000 ha	5,200,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	23,000 ha	2,645,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	500 ha	72,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	1,700 ha	177,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	300 ha	49,000
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	3,000 ha	363,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	300 ha	54,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	2,600 ha	312,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	2,000 ha	1,332,000
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	2,100 ha	1,048,000
3. Year Round Crop									**10,100 ha**	**4,194,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	1,400 ha	784,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	8,700 ha	3,410,000
4. Perenial Crop									**5,300 ha**	**1,728,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	400 ha	160,000
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	4,900 ha	1,568,000
Future Condition								$753 /ha	**143,200 ha**	**57,973,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**66,200 ha**	**26,768,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	49,000 ha	18,375,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	4,000 ha	1,384,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	5,000 ha	1,325,000
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	5,000 ha	1,690,000
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	3,200 ha	3,994,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**66,200 ha**	**26,768,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	49,000 ha	18,375,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	4,000 ha	1,384,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	5,000 ha	1,325,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	5,000 ha	1,690,000
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	3,200 ha	3,994,000
3. Year Round Crop									**5,500 ha**	**462,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	5,500 ha	462,000
4. Perenial Crop									**5,300 ha**	**3,975,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	5,300 ha	3,975,000
Increment	0.90 (SCF)	139	per ton					$384 /ha	**4,800 ha**	**29,547,000**
								Irrigation Area	77,000 ha	

Table I.7 Irrigation Benefit (7/11)
(Tra Khuc River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$534 /ha	**116,200 ha**	**28,818,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**34,700 ha**	**6,287,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	27,000 ha	5,400,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	6,000 ha	690,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	500 ha	72,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	1,200 ha	125,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	0 ha	0
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	0 ha	0
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	0 ha	0
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	0 ha	0
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**62,300 ha**	**14,601,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	45,000 ha	9,000,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	1,100 ha	127,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	500 ha	72,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	1,200 ha	125,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	2,000 ha	328,000
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	1,100 ha	133,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	3,500 ha	630,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	900 ha	108,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	3,500 ha	2,331,000
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	3,500 ha	1,747,000
3. Year Round Crop									**13,200 ha**	**5,930,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	4,500 ha	2,520,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	8,700 ha	3,410,000
4. Perenial Crop									**6,000 ha**	**2,000,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	1,000 ha	400,000
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	5,000 ha	1,600,000
Future Condition								$1,023 /ha	**123,000 ha**	**55,235,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**36,000 ha**	**13,413,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	33,000 ha	12,375,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	3,000 ha	1,038,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	0 ha	0
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	0 ha	0
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	0 ha	0
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**69,000 ha**	**36,314,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	46,000 ha	17,250,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	3,000 ha	1,038,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	1,500 ha	398,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	6,000 ha	2,028,000
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	12,500 ha	15,600,000
3. Year Round Crop									**12,000 ha**	**1,008,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	12,000 ha	1,008,000
4. Perenial Crop									**6,000 ha**	**4,500,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	6,000 ha	4,500,000
Increment	0.90 (SCF)	139	per ton					$489 /ha	**6,800 ha**	**26,417,000**
								Irrigation Area	54,000 ha	

Table I.7 Irrigation Benefit (8/11)
(Kone River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$538 /ha	**121,200 ha**	**26,341,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**41,700 ha**	**7,374,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	24,000 ha	4,800,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	16,000 ha	1,840,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	500 ha	52,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	0 ha	0
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	0 ha	0
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	500 ha	333,000
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	700 ha	349,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**72,100 ha**	**15,982,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	48,000 ha	9,600,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	14,400 ha	1,656,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	500 ha	52,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	0 ha	0
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	0 ha	0
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	500 ha	333,000
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	8,700 ha	4,341,000
3. Year Round Crop									**7,400 ha**	**2,985,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	500 ha	280,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	6,900 ha	2,705,000
4. Perenial Crop									**0 ha**	**0**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	0 ha	0
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	0 ha	0
Future Condition								$1,222 /ha	**132,000 ha**	**59,860,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**43,000 ha**	**16,940,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	40,000 ha	15,000,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	2,000 ha	692,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	0 ha	0
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	0 ha	0
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	1,000 ha	1,248,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**83,000 ha**	**42,416,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	68,000 ha	25,500,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	2,000 ha	692,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	0 ha	0
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	0 ha	0
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	13,000 ha	16,224,000
3. Year Round Crop									**6,000 ha**	**504,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	6,000 ha	504,000
4. Perenial Crop									**0 ha**	**0**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	0 ha	0
Increment	0.90 (SCF)	139	per ton					$684 /ha	**10,800 ha**	**33,519,000**
								Irrigation Area	49,000 ha	

Table I.7 Irrigation Benefit (9/11)
(Ba River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$392 /ha	**221,700 ha**	**72,935,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**106,000 ha**	**41,201,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	26,000 ha	5,200,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	3,000 ha	345,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	800 ha	115,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	9,100 ha	946,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	1,800 ha	218,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	2,100 ha	252,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	15,500 ha	10,323,000
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	47,700 ha	23,802,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**83,700 ha**	**19,689,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	37,000 ha	7,400,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	24,000 ha	2,760,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	300 ha	43,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	3,000 ha	312,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	600 ha	73,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	1,400 ha	168,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	1,500 ha	999,000
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	15,900 ha	7,934,000
3. Year Round Crop									**23,900 ha**	**9,453,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	500 ha	280,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	23,400 ha	9,173,000
4. Perenial Crop									**8,100 ha**	**2,592,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	0 ha	0
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	8,100 ha	2,592,000
Future Condition								$1,004 /ha	**294,800 ha**	**186,818,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**126,200 ha**	**100,442,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	39,000 ha	14,625,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	15,000 ha	5,190,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	2,700 ha	716,000
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	7,500 ha	2,535,000
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	62,000 ha	77,376,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**91,400 ha**	**41,796,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	74,000 ha	27,750,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	5,000 ha	1,730,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	900 ha	239,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	2,500 ha	845,000
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	9,000 ha	11,232,000
3. Year Round Crop									**20,000 ha**	**1,680,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	20,000 ha	1,680,000
4. Perenial Crop									**57,200 ha**	**42,900,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	57,200 ha	42,900,000
Increment	0.90 (SCF)	139	per ton					$612 /ha	**73,100 ha**	**113,883,000**
								Irrigation Area	186,000 ha	

Table I.7 Irrigation Benefit (10/11)
(Se San River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$334 /ha	**55,200 ha**	**16,714,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**5,200 ha**	**1,023,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	5,000 ha	1,000,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	200 ha	23,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	0 ha	0
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	0 ha	0
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	0 ha	0
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	0 ha	0
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	0 ha	0
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**23,300 ha**	**5,883,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	13,000 ha	2,600,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	2,000 ha	230,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	0 ha	0
Maize	Rainfed	144	-	1.80	259	155	60%	104	2,700 ha	281,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	200 ha	24,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	0 ha	0
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	300 ha	36,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	1,000 ha	666,000
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	4,100 ha	2,046,000
3. Year Round Crop									**7,500 ha**	**3,024,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	500 ha	280,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	7,000 ha	2,744,000
4. Perenial Crop									**19,200 ha**	**6,784,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	8,000 ha	3,200,000
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	11,200 ha	3,584,000
Future Condition								$852 /ha	**71,800 ha**	**42,579,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**21,800 ha**	**13,275,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	12,000 ha	4,500,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	3,000 ha	1,038,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	300 ha	80,000
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	500 ha	169,000
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	6,000 ha	7,488,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**24,800 ha**	**14,400,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	15,000 ha	5,625,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	3,000 ha	1,038,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	300 ha	80,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	500 ha	169,000
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	6,000 ha	7,488,000
3. Year Round Crop									**6,000 ha**	**504,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	6,000 ha	504,000
4. Perenial Crop									**19,200 ha**	**14,400,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	19,200 ha	14,400,000
Increment	0.90 (SCF)	139	per ton					$517 /ha	**16,600 ha**	**25,865,000**
								Irrigation Area	50,000 ha	

Table I.7 Irrigation Benefit (11/11)
(Srepok River Project)

Crop		Net Income per ha (US$/ha)							Total	
		Unit Price		Unit Yeild	Gross Income	Product. Cost		Net Income	Planted Area	Net Income
		US$/ton	adjust	ton/ha	US$/ha	US$/ha	adjust	US$/ha	ha	US$
Present Condition								$402 /ha	**115,800 ha**	**36,617,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**25,000 ha**	**7,530,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	4,000 ha	800,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	2,600 ha	299,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	500 ha	72,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	4,500 ha	468,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	400 ha	48,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	500 ha	90,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	1,500 ha	180,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	500 ha	333,000
Vegetables	Rainfed	208		6.00	1,248	749	60%	499	10,500 ha	5,240,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**33,000 ha**	**8,578,000**
Paddy	Irrigated	125	-	4.00	500	300	60%	200	5,500 ha	1,100,000
Paddy	Rainfed	125	-	2.30	288	173	60%	115	9,100 ha	1,047,000
Maize	Irrigated	144	-	2.50	360	216	60%	144	500 ha	72,000
Maize	Rainfed	144	-	1.80	259	155	60%	104	4,500 ha	468,000
Sweet Potatoes	Irrigated	63	-	6.50	410	246	60%	164	0 ha	0
Sweet Potatoes	Rainfed	63	-	4.80	302	181	60%	121	400 ha	48,000
Groundnuts	Irrigated	375	-	1.20	450	270	60%	180	500 ha	90,000
Groundnuts	Rainfed	375	-	0.80	300	180	60%	120	1,500 ha	180,000
Vegetables	Irrigated	208	-	8.00	1,664	998	60%	666	500 ha	333,000
Vegetables	Rainfed	208	-	6.00	1,248	749	60%	499	10,500 ha	5,240,000
3. Year Round Crop									**2,900 ha**	**1,221,000**
Sugar Cane, etc.	Irrigated	28	-	50.00	1,400	840	60%	560	500 ha	280,000
Sugar Cane, etc.	Rainfed	28	-	35.00	980	588	60%	392	2,400 ha	941,000
4. Perenial Crop									**54,900 ha**	**19,288,000**
Coffee,etc.	Irrigated	500	-	2.00	1,000	600	60%	400	21,500 ha	8,600,000
Coffee,etc.	Rainfed	500	-	1.60	800	480	60%	320	33,400 ha	10,688,000
Future Condition								$1,045 /ha	**124,900 ha**	**95,103,000**
1. Winter - Spring Crop		-	-	-	-	-	-	-	**34,100 ha**	**30,599,000**
Paddy	Irrigated	125	100%	5.00	625	250	40%	375	6,100 ha	2,288,000
Maize	Irrigated	144	115%	4.00	576	230	40%	346	4,900 ha	1,695,000
Sweet Potatoes	Irrigated	63	50%	7.00	441	176	40%	265	400 ha	106,000
Groundnuts	Irrigated	375	300%	1.50	563	225	40%	338	2,000 ha	676,000
Vegetables	Irrigated	208	166%	10.00	2,080	832	40%	1,248	20,700 ha	25,834,000
2. Summer - Autumn Crop		-	-	-	-	-	-	-	**34,100 ha**	**23,178,000**
Paddy	Irrigated	125	-	5.00	625	250	40%	375	14,600 ha	5,475,000
Maize	Irrigated	144	-	4.00	576	230	40%	346	4,900 ha	1,695,000
Sweet Potatoes	Irrigated	63	-	7.00	441	176	40%	265	400 ha	106,000
Groundnuts	Irrigated	375	-	1.50	563	225	40%	338	2,000 ha	676,000
Vegetables	Irrigated	208	-	10.00	2,080	832	40%	1,248	12,200 ha	15,226,000
3. Year Round Crop									**1,800 ha**	**151,000**
Sugar Cane	Irrigated	28	-	5.00	140	56	40%	84	1,800 ha	151,000
4. Perenial Crop									**54,900 ha**	**41,175,000**
Coffee,etc.	Irrigated	500	-	2.50	1,250	500	40%	750	54,900 ha	41,175,000
Increment	0.90 (SCF)	139	per ton					$643 /ha	**9,100 ha**	**58,486,000**
								Irrigation Area	91,000 ha	

Table I.8 Estimation of Unit Value of Livestock and Aquaculture

I Livestock

1 Livestock Gross Output of 1999

VND 25,388 billion (Adjusted to 2001 constant price)

2 Conversion to Head Number of Cattle (Ox)

(1) Head Number in Whole Country

(a) Cattle (Ox)	3,638,900	heads
(b) Buffalo	2,955,700	heads
(c) Pig	16,306,400	heads

(2) Conversion Rate

Weight Ratio is used.

Weight Ratio is derived from daily water consumption rate.

Ref.

"Guideline for the Preparation of National Master Water Plans, Water Resources Series No.65, ESCAP, 1989"

(a) Cattle (Ox)	35	lit/head/day
(b) Buffalo	35	lit/head/day
(c) Pig	15	lit/head/day

(3) Converted Head Number to Cattle (Ox)

(a) Cattle (Ox)	3,638,900	heads
(b) Buffalo	2,955,700	heads
(c) Pig	6,988,500	heads
Total	13,583,100	

3 Gross Output per Converted Head Number of Cattle (Ox)

VND 1,869,087 per head

II Aquaculture

1 Aquaculture Gross Output of 1999

VND 7,978 billion (Adjusted to 2001 constant price)

2 Aquaculture Area

535,000 ha

3 Gross Output per Pond Area

VND 14,912,100 per ha

Ref.

Statistical Data of Vietnam, Agriculture, Forestry and Fishery 1975 - 2000

Gross Outout of 1999 at constant price of 1994

Table I.9 Estimation of Project Benefit in Livestock Production by River Basin

I Unit Value per Converted Head Number of Cattle (Ox)

VND 1,869,087 per head

II Net Output of Livestock by River Basin (2020)

90% SCF= 0.9

	River Basin	Cattle (Ox)	Buffalo	Pig	Converted Cattle (Ox)	Gross Output	Water Concerned	Prod. cost 85%	Net Output	Economic net output	Equiv-alent
		(10^3 head)	(10^3 head)	(10^3 head)	(10^3 head)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 US$)
1	Bang Giang	307	465	780	1,106	2,067,210	1,860,489.0	1,581,416	279,073	251,166	16.7
2	(Red)	1,997	2,401	20,986	13,392	25,030,813	22,527,731.7	19,148,572	3,379,160	3,041,244	201.8
3	Ma	719	626	3,222	2,726	5,095,131	4,585,617.9	3,897,775	687,843	619,058	41.1
4	Ca	649	409	1,648	1,764	3,297,069	2,967,362.1	2,522,258	445,104	400,594	26.6
5	Thach Han	1,118	50	402	1,340	2,504,577	2,254,119.3	1,916,001	338,118	304,306	20.2
6	Huong	68	42	666	395	738,289	664,460.1	564,791	99,669	89,702	6.0
7	Thu Bon	356	82	625	706	1,319,575	1,187,617.5	1,009,475	178,143	160,328	10.6
8	Tra Khuc	302	59	673	649	1,213,037	1,091,733.3	927,973	163,760	147,384	9.8
9	Kone	298	12	608	571	1,067,249	960,524.1	816,445	144,079	129,671	8.6
10	Ba	715	28	615	1,007	1,882,171	1,693,953.9	1,439,861	254,093	228,684	15.2
11	Sesan	436	47	385	648	1,211,168	1,090,051.2	926,544	163,508	147,157	9.8
12	Srepok	448	31	747	799	1,493,401	1,344,060.9	1,142,452	201,609	181,448	12.0
13	(Dong Nai)	821	154	4,721	2,998	5,603,523	5,043,170.7	4,286,695	756,476	680,828	45.2
14	(Cuu Long)	455	47	10,677	5,078	9,491,224	8,542,101.6	7,260,786	1,281,315	1,153,184	76.5
1~14	Total	8,689	4,453	46,755	33,179	62,014,437	55,812,993.3	47,441,044	8,371,949	7,534,754	500.1

III Net Output of Livestock by River Basin (2001)

90% SCF= 0.9

	River Basin	Cattle (Ox)	Buffalo	Pig	Converted Cattle (Ox)	Gross Output	Water Concerned	Prod. cost 85%	Net Output	Economic net output	Equiv-alent
		(10^3 head)	(10^3 head)	(10^3 head)	(10^3 head)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 US$)
1	Bang Giang	103	166	332	411	768,195	691,375.5	587,669	103,706	93,336	6.2
2	(Red)	991	1,473	9,082	6,356	11,879,917	10,691,925.3	9,088,137	1,603,789	1,443,410	95.8
3	Ma	336	368	1,494	1,344	2,512,053	2,260,847.7	1,921,721	339,127	305,214	20.3
4	Ca	353	292	951	1,053	1,968,149	1,771,334.1	1,505,634	265,700	239,130	15.9
5	Thach Han	63	35	186	178	332,697	299,427.3	254,513	44,914	40,423	2.7
6	Huong	33	35	227	165	308,399	277,559.1	235,925	41,634	37,470	2.5
7	Thu Bon	214	52	495	478	893,424	804,081.6	683,469	120,612	108,551	7.2
8	Tra Khuc	174	34	314	343	641,097	576,987.3	490,439	86,548	77,893	5.2
9	Kone	134	10	221	239	446,712	402,040.8	341,735	60,306	54,276	3.6
10	Ba	291	17	390	475	887,816	799,034.4	679,179	119,855	107,870	7.2
11	Sesan	135	14	190	230	429,890	386,901.0	328,866	58,035	52,232	3.5
12	Srepok	74	16	299	218	407,461	366,714.9	311,708	55,007	49,507	3.3
13	(Dong Nai)	313	140	1,675	1,171	2,188,701	1,969,830.9	1,674,356	295,475	265,927	17.6
14	(Cuu Long)	171	41	2,662	1,353	2,528,875	2,275,987.5	1,934,589	341,398	307,258	20.4
1~14	Total	3,385	2,693	18,518	14,014	26,193,386	23,574,047.4	20,037,940	3,536,107	3,182,496	211.2

IV Increment of Net Output of Livestock (2001-2020)

90% SCF= 0.9

	River Basin	Cattle (Ox)	Buffalo	Pig	Converted Cattle (Ox)	Gross Output	Water Concerned	Prod. cost 85%	Net Output	Economic net output	Equiv-alent
		(10^3 head)	(10^3 head)	(10^3 head)	(10^3 head)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 US$)
1	Bang Giang	204	299	448	695	1,299,015	1,169,113.5	993,746	175,367	157,830	10.5
2	(Red)	1,006	928	11,904	7,036	13,150,896	11,835,806.4	10,060,435	1,775,371	1,597,834	106.0
3	Ma	383	258	1,728	1,382	2,583,078	2,324,770.2	1,976,055	348,716	313,844	20.8
4	Ca	296	117	697	712	1,330,790	1,197,711.0	1,018,054	179,657	161,691	10.7
5	Thach Han	1,055	15	216	1,163	2,173,748	1,956,373.2	1,662,917	293,456	264,110	17.5
6	Huong	35	7	439	230	429,890	386,901.0	328,866	58,035	52,232	3.5
7	Thu Bon	142	30	130	228	426,152	383,536.8	326,006	57,531	51,777	3.4
8	Tra Khuc	128	25	359	307	573,810	516,429.0	438,965	77,464	69,718	4.6
9	Kone	164	2	387	332	620,537	558,483.3	474,711	83,772	75,395	5.0
10	Ba	424	11	225	531	992,485	893,236.5	759,251	133,985	120,587	8.0
11	Sesan	301	33	195	418	781,278	703,150.2	597,678	105,473	94,925	6.3
12	Srepok	374	15	448	581	1,085,940	977,346.0	830,744	146,602	131,942	8.8
13	(Dong Nai)	508	14	3,046	1,827	3,414,822	3,073,339.8	2,612,339	461,001	414,901	27.5
14	(Cuu Long)	284	6	8,015	3,725	6,962,349	6,266,114.1	5,326,197	939,917	845,925	56.1
1~14	Total	5,304	1,760	28,237	19,167	35,824,790	32,242,311.0	27,405,964	4,836,347	4,352,712	288.9

Ref.
Progress Report (2), Page T1-152
Table 1.9.2.9.B Future Water Demand of Livestock, 2020
Table 1.9.2.8 Present Water Demand of Livestock, 2001
Gross Outout at constant price of 1994

Table I.10 Estimation of Project Benefit in Aquaculture by River Basin

I Gross Output per Pond Area

VND	14,912,100 per ha

II Net Output of Aquaculture by River Basin (2020)

100% SCF= 0.9

	River Basin	Coastal Shrimp	Inland Fish	Total Aquaculture	Gross Output	Water Concerned	Prod. cost 50%	Net Output	Economic net output	Equiv-alent
		(ha)	(ha)	(ha)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 US$)
1	Bang Giang	0	956	956	14,256	14,256	7,128	7,128	6,415	0.4
2	(Red)	16,100	130,296	146,396	2,183,072	2,183,072	1,091,536	1,091,536	982,382	65.2
3	Ma	5,508	14,361	19,869	296,289	296,289	148,145	148,145	133,330	8.8
4	Ca	2,427	12,542	14,969	223,219	223,219	111,610	111,610	100,449	6.7
5	Thach Han	292	798	1,090	16,254	16,254	8,127	8,127	7,314	0.5
6	Huong	4,514	3,693	8,207	122,384	122,384	61,192	61,192	55,073	3.7
7	Thu Bon	1,256	3,643	4,899	73,054	73,054	36,527	36,527	32,874	2.2
8	Tra Khuc	454	73	527	7,859	7,859	3,930	3,930	3,537	0.2
9	Kone	1,054	777	1,831	27,304	27,304	13,652	13,652	12,287	0.8
10	Ba	1,481	814	2,295	34,223	34,223	17,112	17,112	15,400	1.0
11	Sesan	0	409	409	6,099	6,099	3,050	3,050	2,745	0.2
12	Srepok	0	2,086	2,086	31,107	31,107	15,554	15,554	13,998	0.9
13	(Dong Nai)	8,568	33,533	42,101	627,814	627,814	313,907	313,907	282,516	18.7
14	(Cuu Long)	677,523	265,979	943,502	14,069,596	14,069,596	7,034,798	7,034,798	6,331,318	420.2
1~14	Total	719,177	469,960	1,189,137	17,732,530	17,732,530	8,866,265	8,866,265	7,979,639	529.6

III Net Output of Aquaculture by River Basin (2001)

100% SCF= 0.9

	River Basin	Coastal Shrimp	Inland Fish	Total Aquaculture	Gross Output	Water Concerned	Prod. cost 50%	Net Output	Economic net output	Equiv-alent
		(ha)	(ha)	(ha)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 US$)
1	Bang Giang	0	709	709	10,573	10,573	5,287	5,287	4,758	0.3
2	(Red)	9,678	80,636	90,314	1,346,771	1,346,771	673,386	673,386	606,047	40.2
3	Ma	4,780	11,227	16,007	238,698	238,698	119,349	119,349	107,414	7.1
4	Ca	1,760	8,276	10,036	149,658	149,658	74,829	74,829	67,346	4.5
5	Thach Han	190	520	710	10,588	10,588	5,294	5,294	4,765	0.3
6	Huong	1,010	920	1,930	28,780	28,780	14,390	14,390	12,951	0.9
7	Thu Bon	1,185	3,431	4,616	68,834	68,834	34,417	34,417	30,975	2.1
8	Tra Khuc	375	65	440	6,561	6,561	3,281	3,281	2,952	0.2
9	Kone	935	689	1,624	24,217	24,217	12,109	12,109	10,898	0.7
10	Ba	836	702	1,538	22,935	22,935	11,468	11,468	10,321	0.7
11	Sesan	0	362	362	5,398	5,398	2,699	2,699	2,429	0.2
12	Srepok	0	1,838	1,838	27,408	27,408	13,704	13,704	12,334	0.8
13	(Dong Nai)	6,586	26,992	33,578	500,718	500,718	250,359	250,359	225,323	15.0
14	(Cuu Long)	392,201	119,558	511,759	7,631,401	7,631,401	3,815,701	3,815,701	3,434,130	227.9
1~14	Total	419,536	255,925	675,461	10,072,540	10,072,540	5,036,270	5,036,270	4,532,643	300.8

IV Increment of Net Output of Aquaculture (2001- 2020)

100% SCF= 0.9

	River Basin	Coastal Shrimp	Inland Fish	Total Aquaculture	Gross Output	Water Concerned	Prod. cost 50%	Net Output	Economic net output	Equiv-alent
		(ha)	(ha)	(ha)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 VND)	(10^6 US$)
1	Bang Giang	0	247	247	3,683	3,683	1,842	1,842	1,657	0.1
2	(Red)	6,422	49,660	56,082	836,300	836,300	418,150	418,150	376,335	25.0
3	Ma	728	3,134	3,862	57,591	57,591	28,796	28,796	25,916	1.7
4	Ca	667	4,266	4,933	73,561	73,561	36,781	36,781	33,102	2.2
5	Thach Han	102	278	380	5,667	5,667	2,834	2,834	2,550	0.2
6	Huong	3,504	2,773	6,277	93,603	93,603	46,802	46,802	42,121	2.8
7	Thu Bon	71	212	283	4,220	4,220	2,110	2,110	1,899	0.1
8	Tra Khuc	79	8	87	1,297	1,297	649	649	584	0.0
9	Kone	119	88	207	3,087	3,087	1,544	1,544	1,389	0.1
10	Ba	645	112	757	11,288	11,288	5,644	5,644	5,080	0.3
11	Sesan	0	47	47	701	701	351	351	315	0.0
12	Srepok	0	248	248	3,698	3,698	1,849	1,849	1,664	0.1
13	(Dong Nai)	1,982	6,541	8,523	127,096	127,096	63,548	63,548	57,193	3.8
14	(Cuu Long)	285,322	146,421	431,743	6,438,195	6,438,195	3,219,098	3,219,098	2,897,188	192.3
1~14	Total	299,641	214,035	513,676	7,659,987	7,659,987	3,829,994	3,829,994	3,446,994	228.8

Ref.
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Table 1.9.2.11.B Future Water Demand for Aquaculture, 2020
Table 1.9.2.10 Present Water Demand for Aquaculture, 2001
Gross Outout at constant price of 1994

Table I.11 Economic Benefits of the Projects (1/2)

Benefits	Economic benefit (US$ million)		Remarks
Bang Giang & Ky Cung Rivers			
1. Flood control (in 2020)	2.2		
2. Agriculture (in 2020)	56.5		
1) Crop	45.9		
2) Livestock	10.5		
3) Aquaculture	0.1		
3. Hydropower	2.0	39.4	GWh/year
4. Water supply (in 2020)	2.0	16.5	million m^3/year
Total of (1.- 4.)	62.7		
Ma River			
1. Flood control (in 2020)	0.0		
2. Agriculture (in 2020)	93.4		
1) Crop	70.9		
2) Livestock	20.8		
3) Aquaculture	1.7		
3. Hydropower	23.3	465.0	GWh/year
4. Water supply (in 2020)	11.0	92.0	million m^3/year
Total of (1.- 4.)	127.7		
Ca River			
1. Flood control (in 2020)	-		
2. Agriculture (in 2020)	97.2		
1) Crop	84.3		
2) Livestock	10.7		
3) Aquaculture	2.2		
3. Hydropower	49.8	996.0	GWh/year
4. Water supply (in 2020)	7.9	66.4	million m^3/year
Total of (1.- 4.)	154.9		
Thach Han River			
1. Flood control (in 2020)	5.9		
2. Agriculture (in 2020)	23.7		
1) Crop	6.0		
2) Livestock	17.5		
3) Aquaculture	0.2		
3. Hydropower	14.6	292.0	GWh/year
4. Water supply (in 2020)	1.2	10.0	million m^3/year
Total of (1.- 4.)	45.4		
Huong River			
1. Flood control (in 2020)	39.0		
2. Agriculture (in 2020)	20.7		
1) Crop	14.4		
2) Livestock	3.5		
3) Aquaculture	2.8		
3. Hydropower	7.5	150.6	GWh/year
4. Water supply (in 2020)	5.2	43.6	million m^3/year
Total of (1.- 4.)	72.5		
Vu Gia-Thu Bon Rivers			
1. Flood control (in 2020)	4.7		
2. Agriculture (in 2020)	33.0		
1) Crop	29.5		
2) Livestock	3.4		
3) Aquaculture	0.1		
3. Hydropower	69.5	1,390.3	GWh/year
4. Water supply (in 2020)	30.8	257.5	million m^3/year
Total of (1.- 4.)	138.0		

Table I.11 Economic Benefits of the Projects (2/2)

Benefits	Economic benefit (US$ million)	Remarks	
Tra Khuc River			
1. Flood control (in 2020)	20.6		
2. Agriculture (in 2020)	31.0		
1) Crop	26.4		
2) Livestock	4.6		
3) Aquaculture	-		
3. Hydropower	3.2	63.5	GWh/year
4. Water supply (in 2020)	2.1	17.7	million m^3/year
Total of (1.- 4.)	56.9		
Kone River			
1. Flood control (in 2020)	22.1		
2. Agriculture (in 2020)	38.6		
1) Crop	33.5		
2) Livestock	5.0		
3) Aquaculture	0.1		
3. Hydropower	1.9	38.3	GWh/year
4. Water supply (in 2020)	4.0	33.9	million m^3/year
Total of (1.- 4.)	66.7		
Ba River			
1. Flood control (in 2020)	1.0		
2. Agriculture (in 2020)	122.2		
1) Crop	113.9		
2) Livestock	8.0		
3) Aquaculture	0.3		
3. Hydropower	52.2	1,044.0	GWh/year
4. Water supply (in 2020)	5.2	43.2	million m^3/year
Total of (1.- 4.)	180.5		
Se San River			
1. Flood control (in 2020)	0.2		
2. Agriculture (in 2020)	32.2		
1) Crop	25.9		
2) Livestock	6.3		
3) Aquaculture	-		
3. Hydropower	17.3	346.0	GWh/year
4. Water supply (in 2020)	1.9	16.1	million m^3/year
Total of (1.- 4.)	51.6		
Srepok River			
1. Flood control (in 2020)	0.0		
2. Agriculture (in 2020)	67.4		
1) Crop	58.5		
2) Livestock	8.8		
3) Aquaculture	0.1		
3. Hydropower	51.3	1,025.0	GWh/year
4. Water supply (in 2020)	7.9	66.0	million m^3/year
Total of (1.- 4.)	126.6		

Table I.12 Financial and Economic Project Cost (1/5)

Cost Item	Project Cost (VND million)		Euivalent US$ million	
	Financial cost	Economic cost	Financial cost	Economic cost
Bang Giang & Ky Cung Rivers				
1. Construction cost	2,814,444	2,533,000	186.78	168.10
2. Resettlement cost	474,426	426,983	31.49	28.34
3. Engineering service and administration costs	239,908	215,917	15.92	14.33
4. Physical contingency	608,124	547,312	40.36	36.32
Total of (1.- 4.)	4,136,902	3,723,212	274.55	247.09
Ma River				
1. Construction cost	8,733,788	7,860,409	579.62	521.66
2. Resettlement cost	197,456	177,710	13.10	11.79
3. Engineering service and administration costs	744,483	670,035	49.41	44.47
4. Physical contingency	1,667,446	1,500,701	110.66	99.60
Total of (1.- 4.)	11,343,173	10,208,855	752.79	677.52
Ca River				
1. Construction cost	10,091,281	9,082,153	669.72	602.74
2. Resettlement cost	284,656	256,190	18.89	17.00
3. Engineering service and administration costs	860,198	774,178	57.09	51.38
4. Physical contingency	1,936,356	1,742,720	128.51	115.66
Total of (1.- 4.)	13,172,491	11,855,241	874.21	786.78
Thach Han River				
1. Construction cost	2,687,338	2,418,604	178.35	160.51
2. Resettlement cost	853,967	768,570	56.67	51.01
3. Engineering service and administration costs	229,073	206,166	15.20	13.68
4. Physical contingency	649,760	584,784	43.12	38.81
Total of (1.- 4.)	4,420,138	3,978,124	293.34	264.01
Huong River				
1. Construction cost	3,023,956	2,721,561	200.69	180.62
2. Resettlement cost	202,243	182,019	13.42	12.08
3. Engineering service and administration costs	246,149	221,534	16.34	14.70
4. Physical contingency	347,235	312,512	23.04	20.74
Total of (1.- 4.)	3,819,583	3,437,626	253.49	228.14
Vu Gia-Thu Bon Rivers				
1. Construction cost	11,696,920	10,527,228	776.28	698.65
2. Resettlement cost	761,454	685,308	50.53	45.48
3. Engineering service and administration costs	997,066	897,359	66.17	59.55
4. Physical contingency	2,318,816	2,086,934	153.89	138.50
Total of (1.- 4.)	15,774,256	14,196,829	1,046.87	942.18
Tra Khuc River				
1. Construction cost	1,626,132	1,463,519	107.92	97.13
2. Resettlement cost	237,213	213,492	15.74	14.17
3. Engineering service and administration costs	138,614	124,753	9.20	8.28
4. Physical contingency	345,004	310,504	22.90	20.61
Total of (1.- 4.)	2,346,963	2,112,268	155.76	140.19
Kone River				
1. Construction cost	3,006,863	2,706,177	199.55	179.60
2. Resettlement cost	69,503	62,553	4.61	4.15
3. Engineering service and administration costs	256,310	230,679	17.01	15.31
4. Physical contingency	574,330	516,897	38.12	34.30
Total of (1.- 4.)	3,907,006	3,516,306	259.29	233.36

Table I.12 Financial and Economic Project Cost (2/5)

Cost Item	Project Cost (VND million)		Euivalent US$ million	
	Financial cost	Economic cost	Financial cost	Economic cost
Ba River				
1. Construction cost	8,355,610	7,520,049	554.53	499.07
2. Resettlement cost	175,300	157,770	11.63	10.47
3. Engineering service and administration costs	712,247	641,022	47.27	42.54
4. Physical contingency	1,592,900	1,433,610	105.71	95.14
Total of (1.- 4.)	10,836,057	9,752,451	719.14	647.22
Se San River				
b Construction cost	4,101,438	3,691,294	272.20	244.98
2. Resettlement cost	59,303	53,373	3.94	3.54
3. Engineering service and administration costs	349,614	314,653	23.20	20.88
4. Physical contingency	777,282	699,554	51.58	46.43
Total of (1.- 4.)	5,287,637	4,758,874	350.92	315.83
Srepok River				
1. Construction cost	6,963,242	6,266,918	462.12	415.91
2. Resettlement cost	282,283	254,055	18.73	16.86
3. Engineering service and administration costs	593,559	534,203	39.39	35.45
4. Physical contingency	1,350,933	1,215,840	89.66	80.69
Total of (1.- 4.)	9,190,017	8,271,016	609.90	548.91

Note: 1. Price level: as of December 2001, US$1.00 = VND15,068, JPY100 = VND12,212
2. Resettlement cost has been estimated by the study team by applying the same unit resettlement cost as Ta Trach Reservoir Project in the Huong River Basin.
3. Both financial and economic costs do not include neither price escalation nor value added tax.
4. Economic cost has been estimated from the financial cost by applying SCF (0.9).

Table I.12 Financial and Economic Project Cost (3/5)

Cost Item		Financial Cost	
Bang Giang & Ky Cung Rivers			
1.	Construction cost	2,814,444	
2.	Resettlement cost		
3.	Engineering service and administration costs	239,908	
4.	Physical contingency	526,365	17.233279%
	Total of (1.- 4.)	3,580,717	
	Equivalent Million US$	237.64	
Red & Thai Binh Rivers			
1.	Construction cost	47,630,172	
2.	Resettlement cost		
3.	Engineering service and administration costs	4,060,078	
4.	Physical contingency	8,907,933	17.2%
	Total of (1.- 4.)	60,598,183	
	Equivalent Million US$	4,021.65	
Ma River			
1.	Construction cost	8,733,788	
2.	Resettlement cost		
3.	Engineering service and administration costs	744,483	
4.	Physical contingency	1,633,418	17.2%
	Total of (1.- 4.)	11,111,689	
	Equivalent Million US$	737.44	
Ca River			
1.	Construction cost	10,411,726	
2.	Resettlement cost		
3.	Engineering service and administration costs	887,514	
4.	Physical contingency	1,947,231	17.2%
	Total of (1.- 4.)	13,246,471	
	Equivalent Million US$	879.11	
Thach Han River			
1.	Construction cost	2,701,377	
2.	Resettlement cost		
3.	Engineering service and administration costs	230,270	
4.	Physical contingency	505,219	17.2%
	Total of (1.- 4.)	3,436,866	
	Equivalent Million US$	228.09	
Huong River			
1.	Construction cost	2,850,456	
2.	Resettlement cost		
3.	Engineering service and administration costs	243,798	
4.	Physical contingency	531,612	17.2%
	Total of (1.- 4.)	3,625,866	
	Equivalent Million US$	240.63	

Table I.12 Financial and Economic Project Cost (4/5)

Cost Item		Financial Cost	
Vu Gia-Thu Bon Rivers			
1.	Construction cost	9,141,628	
2.	Resettlement cost		
3.	Engineering service and administration costs	779,248	
4.	Physical contingency	1,709,694	17.2%
	Total of (1.- 4.)	11,630,570	
	Equivalent Million US$	771.87	
Tra Khuc River			
1.	Construction cost	1,626,132	
2.	Resettlement cost		
3.	Engineering service and administration costs	138,614	
4.	Physical contingency	304,124	17.2%
	Total of (1.- 4.)	2,068,870	
	Equivalent Million US$	137.30	
Kone River			
1.	Construction cost	2,460,004	
2.	Resettlement cost		
3.	Engineering service and administration costs	209,695	
4.	Physical contingency	460,077	17.2%
	Total of (1.- 4.)	3,129,776	
	Equivalent Million US$	207.71	
Ba River			
1.	Construction cost	9,812,264	
2.	Resettlement cost		
3.	Engineering service and administration costs	836,414	
4.	Physical contingency	1,835,118	17.2%
	Total of (1.- 4.)	12,483,796	
	Equivalent Million US$	828.50	
Dong Nai River			
1.	Construction cost	34,164,870	
2.	Resettlement cost		
3.	Engineering service and administration costs	2,912,273	
4.	Physical contingency	6,389,613	17.2%
	Total of (1.- 4.)	43,466,756	
	Equivalent Million US$	2,884.71	
Se San River			
1.	Construction cost	3,891,809	
2.	Resettlement cost		
3.	Engineering service and administration costs	331,745	
4.	Physical contingency	727,857	17.2%
	Total of (1.- 4.)	4,951,411	
	Equivalent Million US$	328.60	

Table I.12 Financial and Economic Project Cost (5/5)

	Cost Item	Financial Cost	
Srepok River			
1.	Construction cost	7,358,077	
2.	Resettlement cost		
3.	Engineering service and administration costs	627,215	
4.	Physical contingency	1,376,129	17.2%
	Total of (1.- 4.)	9,361,421	
	Equivalent Million US$	621.28	
Cuu Long River Delta			
1.	Construction cost	36,411,191	
2.	Resettlement cost		
3.	Engineering service and administration costs	3,103,753	
4.	Physical contingency	6,809,727	17.2%
	Total of (1.- 4.)	46,324,671	
	Equivalent Million US$	3,074.37	

Note: 1. Price level: as of December 2001, US$1.00 = VND15,068, JPY100 = VND12,212
2. Resettlement cost has been estimated by the study team on preliminary basis.
3. Both financial and economic costs do not include neither price escalation nor value added tax.
4. Economic cost has been estimated from the financial cost by applying SCF (0.9).

Table I.13 Annual Economic Project Cost (1/2)

Cost Item	Economic Project Cost (US$ million)	Year																		
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bang Giang & Ky Cung Rivers																				
1. Construction cost	168.10	-	-	-	-	8.40	18.49	18.49	18.49	18.49	18.49	18.49	18.49	6.05	6.05	6.05	6.05	5.04	0.50	0.53
2. Resettlement cost	28.34	-	-	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	14.33	-	-	0.86	1.43	1.43	1.43	1.43	1.43	1.15	0.72	0.72	0.72	0.43	0.43	0.43	0.43	0.43	0.43	0.43
4. Physical contingency	36.32	0.29	0.29	0.44	0.44	1.45	2.91	2.91	2.91	2.91	3.63	3.63	3.63	1.82	1.82	1.82	1.82	1.82	0.91	0.87
Total of (1.- 4.)	247.09	0.29	0.29	4.45	5.02	14.43	25.98	25.98	25.98	25.70	25.99	25.99	22.84	8.30	8.30	8.30	8.30	7.29	1.84	1.83
Ma River																				
1. Construction cost	521.66	-	-	-	-	26.08	57.38	57.38	57.38	57.38	57.38	57.38	57.38	18.78	18.78	18.78	18.78	15.65	1.56	1.59
2. Resettlement cost	11.79	-	-	1.68	1.68	1.68	1.68	1.68	1.68	1.68	-	-	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	44.47	-	-	2.67	4.45	4.45	4.45	4.45	4.45	3.56	2.22	2.22	2.22	1.33	1.33	1.33	1.33	1.33	1.33	1.35
4. Physical contingency	99.60	0.80	0.80	1.20	1.20	3.98	7.97	7.97	7.97	7.97	9.96	9.96	9.96	4.98	4.98	4.98	4.98	4.98	2.49	2.47
Total of (1.- 4.)	677.52	0.80	0.80	5.55	7.33	36.19	71.48	71.48	71.48	70.59	69.56	69.56	69.56	25.09	25.09	25.09	25.09	21.96	5.38	5.41
Ca River																				
1. Construction cost	602.74	-	-	-	-	30.14	66.30	66.30	66.30	66.30	66.30	66.30	66.30	21.70	21.70	21.70	21.70	18.08	1.81	1.81
2. Resettlement cost	17.00	-	-	2.12	2.13	2.13	2.13	2.13	2.13	2.13	2.13	-	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	51.38	-	-	3.08	5.14	5.14	5.14	5.14	5.14	4.11	2.57	2.57	2.57	1.54	1.54	1.54	1.54	1.54	1.54	1.54
4. Physical contingency	115.66	0.93	0.93	1.39	1.39	4.63	9.25	9.25	9.25	9.25	11.57	11.57	11.57	5.78	5.78	5.78	5.78	5.78	2.89	2.89
Total of (1.- 4.)	786.78	0.93	0.93	6.59	8.66	42.04	82.82	82.82	82.82	81.79	82.57	80.44	80.44	29.02	29.02	29.02	29.02	25.40	6.24	6.24
Thach Han River																				
1. Construction cost	160.51	-	-	-	-	8.03	17.66	17.66	17.66	17.66	17.66	17.66	17.66	5.78	5.78	5.78	5.78	4.82	0.48	0.44
2. Resettlement cost	51.01	-	-	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	-	-	-	-	-	-	-
3. Engineering service and administration costs	13.68	-	-	0.82	1.37	1.37	1.37	1.37	1.37	1.09	0.68	0.68	0.68	0.41	0.41	0.41	0.41	0.41	0.41	0.42
4. Physical contingency	38.81	0.31	0.31	0.47	0.47	1.55	3.10	3.10	3.10	3.10	3.88	3.88	3.88	1.94	1.94	1.94	1.94	1.94	0.97	0.99
Total of (1.- 4.)	264.01	0.31	0.31	6.39	6.94	16.05	27.23	27.23	27.23	26.95	27.32	27.32	27.32	8.13	8.13	8.13	8.13	7.17	1.86	1.85
Huong River																				
1. Construction cost	180.62	-	-	-	-	5.86	17.17	20.00	15.34	14.22	18.25	20.68	20.29	9.29	12.95	10.45	9.16	6.24	0.36	0.36
2. Resettlement cost	12.08	2.42	2.42	2.42	2.43	-	-	-	0.60	0.60	0.60	0.59	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	14.70	-	-	0.80	1.35	1.35	1.35	1.35	1.29	0.91	1.12	1.12	0.91	0.68	0.68	0.67	0.72	0.27	0.06	0.06
4. Physical contingency	20.74	0.24	0.24	0.33	0.38	0.72	1.85	2.14	1.72	1.57	1.99	2.23	2.09	1.00	1.37	1.12	0.98	0.66	0.04	0.06
Total of (1.- 4.)	228.14	2.66	2.66	3.55	4.16	7.93	20.37	23.49	18.95	17.30	21.96	24.62	23.29	10.97	15.00	12.24	10.86	7.17	0.46	0.48
Vu Gia-Thu Bon Rivers																				
1. Construction cost	698.65	-	-	-	-	34.93	76.85	76.85	76.85	76.85	76.85	76.85	76.85	25.15	25.15	25.15	25.15	20.96	2.10	2.11
2. Resettlement cost	45.48	-	-	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	59.55	-	-	3.57	5.96	5.96	5.96	5.96	5.96	4.76	2.98	2.98	2.98	1.79	1.79	1.79	1.79	1.79	1.79	1.74
4. Physical contingency	138.50	1.11	1.11	1.66	1.66	5.54	11.08	11.08	11.08	11.08	13.85	13.85	13.85	6.93	6.93	6.93	6.93	6.93	3.46	3.44
Total of (1.- 4.)	942.18	1.11	1.11	10.28	12.67	51.48	98.94	98.94	98.94	97.74	98.73	98.73	93.68	33.87	33.87	33.87	33.87	29.68	7.35	7.29
Tra Khuc River																				
1. Construction cost	97.13	-	-	-	-	4.86	10.68	10.68	10.68	10.68	10.68	10.68	10.68	3.50	3.50	3.50	3.50	2.91	0.29	0.31
2. Resettlement cost	14.17	-	-	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	-	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	8.28	-	-	0.50	0.83	0.83	0.83	0.83	0.83	0.66	0.41	0.41	0.41	0.25	0.25	0.25	0.25	0.25	0.25	0.24
4. Physical contingency	20.61	0.16	0.16	0.25	0.25	0.82	1.65	1.65	1.65	1.65	2.06	2.06	2.06	1.03	1.03	1.03	1.03	1.03	0.52	0.52
Total of (1.- 4.)	140.19	0.16	0.16	2.52	2.85	8.28	14.93	14.93	14.93	14.76	14.92	13.15	13.15	4.78	4.78	4.78	4.78	4.19	1.06	1.07

Table I.13 Annual Economic Project Cost (2/2)

Cost Item	Economic Project Cost (US$ million)	Year																		
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Kone River																				
1. Construction cost	179.60	-	-	-	-	8.98	19.76	19.76	19.76	19.76	19.76	19.76	19.76	6.47	6.47	6.47	6.47	5.39	0.54	0.49
2. Resettlement cost	4.15	-	-	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	15.31	-	-	0.92	1.53	1.53	1.53	1.53	1.53	1.22	0.77	0.77	0.77	0.46	0.46	0.46	0.46	0.46	0.46	0.45
4. Physical contingency	34.30	0.27	0.27	0.41	0.41	1.37	2.74	2.74	2.74	2.74	3.43	3.43	3.43	1.72	1.72	1.72	1.72	1.72	0.86	0.86
Total of (1.- 4.)	233.36	0.27	0.27	1.79	2.40	12.34	24.49	24.49	24.49	24.18	24.42	24.42	23.96	8.65	8.65	8.65	8.65	7.57	1.86	1.80
Ba River																				
1. Construction cost	499.07	-	-	-	-	24.95	54.90	54.90	54.90	54.90	54.90	54.90	54.90	17.97	17.97	17.97	17.97	14.97	1.50	1.47
2. Resettlement cost	10.47	-	-	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	42.54	-	-	2.55	4.25	4.25	4.25	4.25	4.25	3.40	2.13	2.13	2.13	1.28	1.28	1.28	1.28	1.28	1.28	1.27
4. Physical contingency	95.14	0.76	0.76	1.14	1.14	3.81	7.61	7.61	7.61	7.61	9.51	9.51	9.51	4.76	4.76	4.76	4.76	4.76	2.38	2.38
Total of (1.- 4.)	647.22	0.76	0.76	4.85	6.55	34.17	67.92	67.92	67.92	67.07	67.70	67.70	66.54	24.01	24.01	24.01	24.01	21.01	5.16	5.12
Se San River																				
1. Construction cost	244.98	-	-	-	-	12.25	26.95	26.95	26.95	26.95	26.95	26.95	26.95	8.82	8.82	8.82	8.82	7.35	0.73	0.72
2. Resettlement cost	3.54	-	-	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	20.88	-	-	1.25	2.09	2.09	2.09	2.09	2.09	1.67	1.04	1.04	1.04	0.63	0.63	0.63	0.63	0.63	0.63	0.61
4. Physical contingency	46.43	0.37	0.37	0.56	0.56	1.86	3.71	3.71	3.71	3.71	4.64	4.64	4.64	2.32	2.32	2.32	2.32	2.32	1.16	1.19
Total of (1.- 4.)	315.83	0.37	0.37	2.20	3.04	16.59	33.14	33.14	33.14	32.72	33.02	33.02	32.63	11.77	11.77	11.77	11.77	10.30	2.52	2.52
Srepok River																				
1. Construction cost	415.91	-	-	-	-	20.80	45.75	45.75	45.75	45.75	45.75	45.75	45.75	14.97	14.97	14.97	14.97	12.48	1.25	1.25
2. Resettlement cost	16.86	-	-	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	-	-	-	-	-	-	-	-
3. Engineering service and administration costs	35.45	-	-	2.13	3.55	3.55	3.55	3.55	3.55	2.84	1.77	1.77	1.77	1.06	1.06	1.06	1.06	1.06	1.06	1.06
4. Physical contingency	80.69	0.65	0.65	0.97	0.97	3.23	6.46	6.46	6.46	6.46	8.07	8.07	8.07	4.03	4.03	4.03	4.03	4.03	2.02	2.00
Total of (1.- 4.)	548.91	0.65	0.65	4.97	6.39	29.45	57.63	57.63	57.63	56.92	57.46	57.46	55.59	20.06	20.06	20.06	20.06	17.57	4.33	4.31

Note: 1. Price level: as of December 2001, US$1.00 = VND15,068, JPY100 = VND12,212

2. Resettlement cost has been estimated by the study team by applying the same unit resettlement cost as Ta Trach Reservoir Project in the Huong River Basin.

Table I.14 Cost-Benefit Analysis (1/11)
(Bang Giang &Ky Cung River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
							Investment					O/M			Replace-ment	Total Cost	
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.29	0.29	-	-	-	-	0.29	-0.29
2	2003	-	-	-	-	-	-	-	-	0.29	0.29	-	-	-	-	0.29	-0.29
3	2004	-	-	-	-	-	-	3.15	0.86	0.44	4.45	-	-	-	-	4.45	-4.45
4	2005	-	-	-	-	-	-	3.15	1.43	0.44	5.02	-	-	-	-	5.02	-5.02
5	2006	-	-	-	-	-	8.40	3.15	1.43	1.45	14.43	-	-	-	-	14.43	-14.43
6	2007	-	-	-	-	-	18.49	3.15	1.43	2.91	25.98	-	-	-	-	25.98	-25.98
7	2008	-	-	-	-	-	18.49	3.15	1.43	2.91	25.98	-	-	-	-	25.98	-25.98
8	2009	-	-	-	-	-	18.49	3.15	1.43	2.91	25.98	-	-	-	-	25.98	-25.98
9	2010	-	-	-	-	-	18.49	3.15	1.15	2.91	25.70	-	-	-	-	25.70	-25.70
10	2011	-	-	-	-	-	18.49	3.15	0.72	3.63	25.99	-	-	-	-	25.99	-25.99
11	2012	-	-	-	-	-	18.49	3.14	0.72	3.63	25.98	-	-	-	-	25.98	-25.98
12	2013	1.01	6.89	1.00	0.54	9.44	18.49	-	0.72	3.63	22.84	0.25	0.05	0.27	-	23.41	-13.97
13	2014	2.05	13.77	2.00	1.10	18.92	6.05	-	0.43	1.82	8.30	0.50	0.09	0.55	-	9.44	9.48
14	2015	2.07	29.84	2.00	1.26	35.16	6.05	-	0.43	1.82	8.30	0.50	0.20	0.63	-	9.63	25.54
15	2016	2.09	34.43	2.00	1.38	39.90	6.05	-	0.43	1.82	8.30	0.50	0.23	0.69	-	9.72	30.18
16	2017	2.13	39.02	2.00	1.52	44.67	6.05	-	0.43	1.82	8.30	0.50	0.26	0.76	-	9.82	34.85
17	2018	2.16	43.61	2.00	1.66	49.42	5.04	-	0.43	1.82	7.29	0.50	0.29	0.83	-	8.91	40.52
18	2019	2.18	45.90	2.00	1.82	51.90	0.50	-	0.43	0.91	1.84	0.50	0.30	0.91	-	3.55	48.35
19	2020	2.20	45.90	2.00	2.00	52.10	0.53	-	0.43	0.87	1.83	0.50	0.30	1.00	-	3.63	48.47
20	2021	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
21	2022	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
22	2023	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
23	2024	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
24	2025	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
25	2026	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
26	2027	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
27	2028	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
28	2029	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
29	2030	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
30	2031	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
31	2032	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
32	2033	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
33	2034	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
34	2035	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
35	2036	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
36	2037	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
37	2038	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	14.30	16.10	36.00
38	2039	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	14.30	16.10	36.00
39	2040	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
40	2041	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
41	2042	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
42	2043	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
43	2044	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	8.30	10.10	42.00
44	2045	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	8.30	10.10	42.00
45	2046	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
46	2047	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
47	2048	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
48	2049	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
49	2050	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
50	2051	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
51	2052	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
52	2053	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
53	2054	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
54	2055	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
55	2056	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
56	2057	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
57	2058	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
58	2059	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
59	2060	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
60	2061	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
61	2062	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
62	2063	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30
63	2064	2.20	45.90	2.00	2.00	52.10	-	-	-	-	-	0.50	0.30	1.00	-	1.80	50.30

EIRR= 12.5%
B/C = 1.05 (at discount rate: 12%)
NPV= 5.1 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (2/11)
(Ma River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Investment					O/M			Replace-ment	Total Cost	
							Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.80	0.80	-	-	-	-	0.80	-0.80
2	2003	-	-	-	-	-	-	-	-	0.80	0.80	-	-	-	-	0.80	-0.80
3	2004	-	-	-	-	-	-	1.68	2.67	1.20	5.55	-	-	-	-	5.55	-5.55
4	2005	-	-	-	-	-	-	1.68	4.45	1.20	7.33	-	-	-	-	7.33	-7.33
5	2006	-	-	-	-	-	26.08	1.68	4.45	3.98	36.19	-	-	-	-	36.19	-36.19
6	2007	-	-	-	-	-	57.38	1.68	4.45	7.97	71.48	-	-	-	-	71.48	-71.48
7	2008	-	-	-	-	-	57.38	1.68	4.45	7.97	71.48	-	-	-	-	71.48	-71.48
8	2009	-	-	-	-	-	57.38	1.68	4.45	7.97	71.48	-	-	-	-	71.48	-71.48
9	2010	-	-	-	-	-	57.38	1.71	3.56	7.97	70.62	-	-	-	-	70.62	-70.62
10	2011	-	-	-	-	-	57.38	-	2.22	9.96	69.56	-	-	-	-	69.56	-69.56
11	2012	-	-	-	-	-	57.38	-	2.22	9.96	69.56	-	-	-	-	69.56	-69.56
12	2013	-	10.64	11.65	2.97	25.26	57.38	-	2.22	9.96	69.56	0.85	0.12	1.46	-	71.99	-46.73
13	2014	-	21.27	23.30	6.05	50.62	18.78	-	1.33	4.98	25.09	1.70	0.24	2.97	-	30.00	20.62
14	2015	-	46.09	23.30	6.93	76.32	18.78	-	1.33	4.98	25.09	1.70	0.52	3.40	-	30.71	45.60
15	2016	-	53.18	23.30	7.59	84.07	18.78	-	1.33	4.98	25.09	1.70	0.60	3.73	-	31.12	52.95
16	2017	-	60.27	23.30	8.36	91.93	18.78	-	1.33	4.98	25.09	1.70	0.68	4.10	-	31.57	60.35
17	2018	-	67.36	23.30	9.13	99.79	15.65	-	1.33	4.98	21.96	1.70	0.76	4.48	-	28.90	70.88
18	2019	-	70.90	23.30	10.01	104.21	1.56	-	1.33	2.49	5.38	1.70	0.80	4.91	-	12.79	91.42
19	2020	-	70.90	23.30	11.00	105.20	1.59	-	1.35	2.47	5.41	1.70	0.80	5.40	-	13.31	91.89
20	2021	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
21	2022	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
22	2023	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
23	2024	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
24	2025	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
25	2026	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
26	2027	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
27	2028	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
28	2029	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
29	2030	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
30	2031	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
31	2032	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
32	2033	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
33	2034	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
34	2035	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
35	2036	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
36	2037	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
37	2038	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	30.20	38.10	67.10
38	2039	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	30.20	38.10	67.10
39	2040	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	30.20	38.10	67.10
40	2041	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
41	2042	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
42	2043	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
43	2044	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	25.35	33.25	71.95
44	2045	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	25.35	33.25	71.95
45	2046	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
46	2047	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
47	2048	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
48	2049	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
49	2050	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
50	2051	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
51	2052	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
52	2053	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
53	2054	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
54	2055	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
55	2056	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
56	2057	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
57	2058	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
58	2059	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
59	2060	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
60	2061	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
61	2062	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
62	2063	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30
63	2064	-	70.90	23.30	11.00	105.20	-	-	-	-	-	1.70	0.80	5.40	-	7.90	97.30

EIRR= 10.1%
B/C = 0.81 (at discount rate: 12%)
NPV= -49.4 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (3/11)
(Ca River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Investment					O/M			Replace-ment	Total Cost	
							Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.93	0.93	-	-	-	-	0.93	-0.93
2	2003	-	-	-	-	-	-	-	-	0.93	0.93	-	-	-	-	0.93	-0.93
3	2004	-	-	-	-	-	-	2.12	3.08	1.39	6.59	-	-	-	-	6.59	-6.59
4	2005	-	-	-	-	-	-	2.12	5.14	1.39	8.65	-	-	-	-	8.65	-8.65
5	2006	-	-	-	-	-	30.14	2.12	5.14	4.63	42.03	-	-	-	-	42.03	-42.03
6	2007	-	-	-	-	-	66.30	2.13	5.14	9.25	82.82	-	-	-	-	82.82	-82.82
7	2008	-	-	-	-	-	66.30	2.13	5.14	9.25	82.82	-	-	-	-	82.82	-82.82
8	2009	-	-	-	-	-	66.30	2.13	5.14	9.25	82.82	-	-	-	-	82.82	-82.82
9	2010	-	-	-	-	-	66.30	2.13	4.11	9.25	81.79	-	-	-	-	81.79	-81.79
10	2011	-	-	-	-	-	66.30	2.12	2.57	11.57	82.56	-	-	-	-	82.56	-82.56
11	2012	-	-	-	-	-	66.30	-	2.57	11.57	80.44	-	-	-	-	80.44	-80.44
12	2013	-	12.65	24.90	2.13	39.68	66.30	-	2.57	11.57	80.44	1.10	0.14	1.05	-	82.73	-43.05
13	2014	-	25.29	49.80	4.35	79.44	21.70	-	1.54	5.78	29.02	2.20	0.27	2.15	-	33.64	45.80
14	2015	-	54.80	49.80	4.98	109.57	21.70	-	1.54	5.78	29.02	2.20	0.59	2.46	-	34.26	75.31
15	2016	-	63.23	49.80	5.45	118.48	21.70	-	1.54	5.78	29.02	2.20	0.68	2.69	-	34.59	83.89
16	2017	-	71.66	49.80	6.00	127.46	21.70	-	1.54	5.78	29.02	2.20	0.77	2.96	-	34.95	92.51
17	2018	-	80.09	49.80	6.56	136.44	18.08	-	1.54	5.78	25.40	2.20	0.86	3.24	-	31.69	104.75
18	2019	-	84.30	49.80	7.19	141.29	1.81	-	1.54	2.89	6.24	2.20	0.90	3.55	-	12.89	128.40
19	2020	-	84.30	49.80	7.90	142.00	1.81	-	1.54	2.89	6.24	2.20	0.90	3.90	-	13.24	128.76
20	2021	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
21	2022	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
22	2023	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
23	2024	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
24	2025	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
25	2026	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
26	2027	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
27	2028	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
28	2029	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
29	2030	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
30	2031	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
31	2032	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
32	2033	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
33	2034	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
34	2035	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
35	2036	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
36	2037	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
37	2038	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	58.90	65.90	76.10
38	2039	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	58.90	65.90	76.10
39	2040	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	1.30	8.30	133.70
40	2041	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
41	2042	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
42	2043	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
43	2044	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	25.10	32.10	109.90
44	2045	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	25.10	32.10	109.90
45	2046	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
46	2047	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
47	2048	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
48	2049	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
49	2050	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
50	2051	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
51	2052	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
52	2053	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
53	2054	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
54	2055	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
55	2056	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
56	2057	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
57	2058	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
58	2059	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
59	2060	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
60	2061	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
61	2062	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
62	2063	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00
63	2064	-	84.30	49.80	7.90	142.00	-	-	-	-	-	2.20	0.90	3.90	-	7.00	135.00

EIRR= 11.7%
B/C = 0.97 (at discount rate: 12%)
NPV= -7.8 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (4/11)
(Thach Han River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Investment					O/M			Replace-ment	Total Cost	
							Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.31	0.31	-	-	-	-	0.31	-0.31
2	2003	-	-	-	-	-	-	-	-	0.31	0.31	-	-	-	-	0.31	-0.31
3	2004	-	-	-	-	-	-	5.10	0.82	0.47	6.39	-	-	-	-	6.39	-6.39
4	2005	-	-	-	-	-	-	5.10	1.37	0.47	6.94	-	-	-	-	6.94	-6.94
5	2006	-	-	-	-	-	8.03	5.10	1.37	1.55	16.05	-	-	-	-	16.05	-16.05
6	2007	-	-	-	-	-	17.66	5.10	1.37	3.10	27.23	-	-	-	-	27.23	-27.23
7	2008	-	-	-	-	-	17.66	5.10	1.37	3.10	27.23	-	-	-	-	27.23	-27.23
8	2009	-	-	-	-	-	17.66	5.10	1.37	3.10	27.23	-	-	-	-	27.23	-27.23
9	2010	-	-	-	-	-	17.66	5.10	1.09	3.10	26.95	-	-	-	-	26.95	-26.95
10	2011	-	-	-	-	-	17.66	5.10	0.68	3.88	27.32	-	-	-	-	27.32	-27.32
11	2012	-	-	-	-	-	17.66	5.10	0.68	3.88	27.32	-	-	-	-	27.32	-27.32
12	2013	2.71	0.90	7.30	0.32	11.24	17.66	5.10	0.68	3.88	27.32	0.45	0.02	0.16	-	27.95	-16.71
13	2014	5.49	1.80	14.60	0.66	22.55	5.78	-	0.41	1.94	8.13	0.90	0.03	0.33	-	9.39	13.16
14	2015	5.55	3.90	14.60	0.76	24.80	5.78	-	0.41	1.94	8.13	0.90	0.07	0.38	-	9.47	15.33
15	2016	5.61	4.50	14.60	0.83	25.53	5.78	-	0.41	1.94	8.13	0.90	0.08	0.41	-	9.52	16.01
16	2017	5.72	5.10	14.60	0.91	26.34	5.78	-	0.41	1.94	8.13	0.90	0.09	0.46	-	9.57	16.76
17	2018	5.78	5.70	14.60	1.00	27.08	4.82	-	0.41	1.94	7.17	0.90	0.10	0.50	-	8.66	18.42
18	2019	5.84	6.00	14.60	1.09	27.53	0.48	-	0.41	0.97	1.86	0.90	0.10	0.55	-	3.41	24.13
19	2020	5.90	6.00	14.60	1.20	27.70	0.44	-	0.42	0.99	1.85	0.90	0.10	0.60	-	3.45	24.25
20	2021	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
21	2022	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
22	2023	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
23	2024	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
24	2025	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
25	2026	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
26	2027	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
27	2028	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
28	2029	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
29	2030	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
30	2031	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
31	2032	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
32	2033	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
33	2034	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
34	2035	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
35	2036	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
36	2037	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
37	2038	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	23.40	25.00	2.70
38	2039	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	23.40	25.00	2.70
39	2040	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
40	2041	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
41	2042	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
42	2043	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
43	2044	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	5.30	6.90	20.80
44	2045	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
45	2046	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
46	2047	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
47	2048	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
48	2049	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
49	2050	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
50	2051	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
51	2052	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
52	2053	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
53	2054	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
54	2055	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
55	2056	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
56	2057	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
57	2058	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
58	2059	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
59	2060	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
60	2061	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
61	2062	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
62	2063	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10
63	2064	5.90	6.00	14.60	1.20	27.70	-	-	-	-	-	0.90	0.10	0.60	-	1.60	26.10

EIRR= 7.6%
B/C = 0.59 (at discount rate: 12%)
NPV= -41.5 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (5/11)
(Huong River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Investment					O/M			Replace-ment	Total Cost	
							Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	2.42	-	0.24	2.66	-	-	-	-	2.66	-2.66
2	2003	-	-	-	-	-	-	2.42	-	0.24	2.66	-	-	-	-	2.66	-2.66
3	2004	-	-	-	-	-	-	2.42	0.80	0.33	3.55	-	-	-	-	3.55	-3.55
4	2005	-	-	-	-	-	-	2.43	1.35	0.38	4.16	-	-	-	-	4.16	-4.16
5	2006	-	-	-	-	-	5.86	-	1.35	0.72	7.93	-	-	-	-	7.93	-7.93
6	2007	-	-	-	-	-	17.17	-	1.35	1.85	20.37	-	-	-	-	20.37	-20.37
7	2008	-	-	-	-	-	20.00	-	1.35	2.14	23.49	-	-	-	-	23.49	-23.49
8	2009	-	-	-	-	-	15.34	0.60	1.29	1.72	18.95	-	-	-	-	18.95	-18.95
9	2010	-	-	-	-	-	14.22	0.60	0.91	1.57	17.30	-	-	-	-	17.30	-17.30
10	2011	-	-	-	-	-	18.25	0.60	1.12	1.99	21.96	-	-	-	-	21.96	-21.96
11	2012	-	-	-	-	-	20.68	0.59	1.12	2.23	24.62	-	-	-	-	24.62	-24.62
12	2013	16.69	2.16	1.75	1.40	22.01	20.29	-	0.91	2.09	23.29	0.24	0.02	0.06	-	23.61	-1.60
13	2014	33.77	4.33	3.50	2.86	44.46	9.29	-	0.68	1.00	10.97	0.47	0.03	0.11	-	11.58	32.88
14	2015	34.17	9.38	3.50	3.28	50.33	12.95	-	0.68	1.37	15.00	0.47	0.07	0.35	-	15.89	34.44
15	2016	34.58	10.82	3.50	3.59	52.49	10.45	-	0.67	1.12	12.24	0.47	0.15	0.59	-	13.45	39.04
16	2017	34.99	12.26	3.50	3.95	54.70	9.16	-	0.72	0.98	10.86	0.47	0.17	0.83	-	12.33	42.37
17	2018	36.76	13.71	5.28	4.32	60.07	6.24	-	0.27	0.66	7.17	0.56	0.22	1.07	-	9.02	51.05
18	2019	38.55	14.43	7.05	4.73	64.76	0.36	-	0.06	0.04	0.46	0.64	0.22	1.31	-	2.63	62.13
19	2020	39.00	14.43	7.05	5.20	65.68	0.36	-	0.06	0.07	0.49	0.64	0.22	1.55	-	2.90	62.78
20	2021	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
21	2022	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
22	2023	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
23	2024	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
24	2025	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
25	2026	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
26	2027	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
27	2028	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
28	2029	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
29	2030	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
30	2031	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
31	2032	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
32	2033	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
33	2034	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
34	2035	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
35	2036	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
36	2037	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
37	2038	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	11.65	14.06	51.62
38	2039	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	11.65	14.06	51.62
39	2040	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	16.41	18.82	46.86
40	2041	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	16.42	18.83	46.85
41	2042	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	7.38	9.79	55.89
42	2043	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	12.69	15.10	50.58
43	2044	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	5.31	7.72	57.96
44	2045	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
45	2046	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
46	2047	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
47	2048	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
48	2049	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
49	2050	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
50	2051	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
51	2052	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
52	2053	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
53	2054	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
54	2055	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
55	2056	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
56	2057	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
57	2058	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
58	2059	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
59	2060	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
60	2061	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
61	2062	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
62	2063	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27
63	2064	39.00	14.43	7.05	5.20	65.68	-	-	-	-	-	0.64	0.22	1.55	-	2.41	63.27

EIRR= 16.5%
B/C = 1.56 (at discount rate: 12%)
NPV= 47.7 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (6/11)
(Vu Gia-Thu Bon River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
							Investment					O/M			Replace-ment	Total Cost	
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	1.11	1.11	-	-	-	-	1.11	-1.11
2	2003	-	-	-	-	-	-	-	-	1.11	1.11	-	-	-	-	1.11	-1.11
3	2004	-	-	-	-	-	-	5.05	3.57	1.66	10.28	-	-	-	-	10.28	-10.28
4	2005	-	-	-	-	-	-	5.05	5.96	1.66	12.67	-	-	-	-	12.67	-12.67
5	2006	-	-	-	-	-	34.93	5.05	5.96	5.54	51.48	-	-	-	-	51.48	-51.48
6	2007	-	-	-	-	-	76.85	5.05	5.96	11.08	98.94	-	-	-	-	98.94	-98.94
7	2008	-	-	-	-	-	76.85	5.05	5.96	11.08	98.94	-	-	-	-	98.94	-98.94
8	2009	-	-	-	-	-	76.85	5.05	5.96	11.08	98.94	-	-	-	-	98.94	-98.94
9	2010	-	-	-	-	-	76.85	5.06	4.76	11.08	97.75	-	-	-	-	97.75	-97.75
10	2011	-	-	-	-	-	76.85	5.06	2.98	13.85	98.74	-	-	-	-	98.74	-98.74
11	2012	-	-	-	-	-	76.85	5.06	2.98	13.85	98.74	-	-	-	-	98.74	-98.74
12	2013	2.16	4.43	34.75	8.32	49.65	76.85	-	2.98	13.85	93.68	1.00	0.06	4.05	-	98.79	-49.14
13	2014	4.37	8.85	69.50	16.94	99.66	25.15	-	1.79	6.93	33.87	2.00	0.12	8.25	-	44.24	55.42
14	2015	4.42	19.18	69.50	19.40	112.50	25.15	-	1.79	6.93	33.87	2.00	0.26	9.45	-	45.58	66.92
15	2016	4.47	22.13	69.50	21.25	117.34	25.15	-	1.79	6.93	33.87	2.00	0.30	10.35	-	46.52	70.82
16	2017	4.56	25.08	69.50	23.41	122.54	25.15	-	1.79	6.93	33.87	2.00	0.34	11.40	-	47.61	74.93
17	2018	4.61	28.03	69.50	25.56	127.70	20.96	-	1.79	6.93	29.68	2.00	0.38	12.45	-	44.51	83.19
18	2019	4.65	29.50	69.50	28.03	131.68	2.10	-	1.79	3.46	7.35	2.00	0.40	13.65	-	23.40	108.28
19	2020	4.70	29.50	69.50	30.80	134.50	2.11	-	1.74	3.44	7.29	2.00	0.40	15.00	-	24.69	109.81
20	2021	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
21	2022	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
22	2023	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
23	2024	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
24	2025	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
25	2026	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
26	2027	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
27	2028	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
28	2029	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
29	2030	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
30	2031	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
31	2032	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
32	2033	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
33	2034	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
34	2035	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
35	2036	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
36	2037	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
37	2038	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	46.25	63.65	70.85
38	2039	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	46.25	63.65	70.85
39	2040	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	11.90	29.30	105.20
40	2041	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
41	2042	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
42	2043	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
43	2044	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	35.75	53.15	81.35
44	2045	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	35.75	53.15	81.35
45	2046	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
46	2047	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
47	2048	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
48	2049	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
49	2050	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
50	2051	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
51	2052	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
52	2053	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
53	2054	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
54	2055	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
55	2056	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
56	2057	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
57	2058	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
58	2059	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
59	2060	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
60	2061	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
61	2062	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
62	2063	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10
63	2064	4.70	29.50	69.50	30.80	134.50	-	-	-	-	-	2.00	0.40	15.00	-	17.40	117.10

EIRR= 9.4%
B/C = 0.76 (at discount rate: 12%)
NPV= -88.3 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (7/11)
(Tra Khuc River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Investment					O/M			Replace-ment	Total Cost	
							Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.16	0.16	-	-	-	-	0.16	-0.16
2	2003	-	-	-	-	-	-	-	-	0.16	0.16	-	-	-	-	0.16	-0.16
3	2004	-	-	-	-	-	-	1.77	0.50	0.25	2.52	-	-	-	-	2.52	-2.52
4	2005	-	-	-	-	-	-	1.77	0.83	0.25	2.85	-	-	-	-	2.85	-2.85
5	2006	-	-	-	-	-	4.86	1.77	0.83	0.82	8.28	-	-	-	-	8.28	-8.28
6	2007	-	-	-	-	-	10.68	1.77	0.83	1.65	14.93	-	-	-	-	14.93	-14.93
7	2008	-	-	-	-	-	10.68	1.77	0.83	1.65	14.93	-	-	-	-	14.93	-14.93
8	2009	-	-	-	-	-	10.68	1.77	0.83	1.65	14.93	-	-	-	-	14.93	-14.93
9	2010	-	-	-	-	-	10.68	1.77	0.66	1.65	14.76	-	-	-	-	14.76	-14.76
10	2011	-	-	-	-	-	10.68	1.78	0.41	2.06	14.93	-	-	-	-	14.93	-14.93
11	2012	-	-	-	-	-	10.68	-	0.41	2.06	13.15	-	-	-	-	13.15	-13.15
12	2013	9.48	6.96	1.60	0.57	18.60	10.68	-	0.41	2.06	13.15	0.10	0.03	0.27	-	13.55	5.05
13	2014	19.16	13.92	3.20	1.16	37.43	3.50	-	0.25	1.03	4.78	0.20	0.06	0.55	-	5.59	31.84
14	2015	19.36	30.16	3.20	1.32	54.05	3.50	-	0.25	1.03	4.78	0.20	0.13	0.63	-	5.74	48.31
15	2016	19.57	34.80	3.20	1.45	59.02	3.50	-	0.25	1.03	4.78	0.20	0.15	0.69	-	5.82	53.20
16	2017	19.98	39.44	3.20	1.60	64.22	3.50	-	0.25	1.03	4.78	0.20	0.17	0.76	-	5.91	58.31
17	2018	20.19	44.08	3.20	1.74	69.21	2.91	-	0.25	1.03	4.19	0.20	0.19	0.83	-	5.41	63.80
18	2019	20.39	46.40	3.20	1.91	71.91	0.29	-	0.25	0.52	1.06	0.20	0.20	0.91	-	2.37	69.54
19	2020	20.60	46.40	3.20	2.10	72.30	0.31	-	0.24	0.52	1.07	0.20	0.20	1.00	-	2.47	69.83
20	2021	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
21	2022	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
22	2023	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
23	2024	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
24	2025	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
25	2026	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
26	2027	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
27	2028	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
28	2029	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
29	2030	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
30	2031	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
31	2032	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
32	2033	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
33	2034	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
34	2035	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
35	2036	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
36	2037	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
37	2038	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	13.00	14.40	57.90
38	2039	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
39	2040	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
40	2041	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
41	2042	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
42	2043	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
43	2044	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	11.50	12.90	59.40
44	2045	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
45	2046	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
46	2047	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
47	2048	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
48	2049	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
49	2050	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
50	2051	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
51	2052	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
52	2053	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
53	2054	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
54	2055	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
55	2056	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
56	2057	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
57	2058	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
58	2059	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
59	2060	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
60	2061	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
61	2062	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
62	2063	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90
63	2064	20.60	46.40	3.20	2.10	72.30	-	-	-	-	-	0.20	0.20	1.00	-	1.40	70.90

EIRR= 22.4%
B/C = 2.66 (at discount rate: 12%)
NPV= 89.2 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (8/11)
(Kone River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
							Investment					O/M			Replace-ment	Total Cost	
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.27	0.27	-	-	-	-	0.27	-0.27
2	2003	-	-	-	-	-	-	-	-	0.27	0.27	-	-	-	-	0.27	-0.27
3	2004	-	-	-	-	-	-	0.46	0.92	0.41	1.79	-	-	-	-	1.79	-1.79
4	2005	-	-	-	-	-	-	0.46	1.53	0.41	2.40	-	-	-	-	2.40	-2.40
5	2006	-	-	-	-	-	8.98	0.46	1.53	1.37	12.34	-	-	-	-	12.34	-12.34
6	2007	-	-	-	-	-	19.76	0.46	1.53	2.74	24.49	-	-	-	-	24.49	-24.49
7	2008	-	-	-	-	-	19.76	0.46	1.53	2.74	24.49	-	-	-	-	24.49	-24.49
8	2009	-	-	-	-	-	19.76	0.46	1.53	2.74	24.49	-	-	-	-	24.49	-24.49
9	2010	-	-	-	-	-	19.76	0.46	1.22	2.74	24.18	-	-	-	-	24.18	-24.18
10	2011	-	-	-	-	-	19.76	0.46	0.77	3.43	24.42	-	-	-	-	24.42	-24.42
11	2012	-	-	-	-	-	19.76	0.47	0.77	3.43	24.43	-	-	-	-	24.43	-24.43
12	2013	10.17	5.03	0.95	1.08	17.22	19.76	-	0.77	3.43	23.96	0.25	0.05	0.54	-	24.80	-7.57
13	2014	20.55	10.05	1.90	2.20	34.70	6.47	-	0.46	1.72	8.65	0.50	0.09	1.10	-	10.34	24.36
14	2015	20.77	21.78	1.90	2.52	46.97	6.47	-	0.46	1.72	8.65	0.50	0.20	1.26	-	10.61	36.36
15	2016	21.00	25.13	1.90	2.76	50.78	6.47	-	0.46	1.72	8.65	0.50	0.23	1.38	-	10.76	40.03
16	2017	21.44	28.48	1.90	3.04	54.85	6.47	-	0.46	1.72	8.65	0.50	0.26	1.52	-	10.93	43.93
17	2018	21.66	31.83	1.90	3.32	58.70	5.39	-	0.46	1.72	7.57	0.50	0.29	1.66	-	10.02	48.69
18	2019	21.88	33.50	1.90	3.64	60.92	0.54	-	0.46	0.86	1.86	0.50	0.30	1.82	-	4.48	56.44
19	2020	22.10	33.50	1.90	4.00	61.50	0.49	-	0.45	0.86	1.80	0.50	0.30	2.00	-	4.60	56.90
20	2021	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
21	2022	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
22	2023	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
23	2024	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
24	2025	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
25	2026	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
26	2027	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
27	2028	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
28	2029	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
29	2030	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
30	2031	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
31	2032	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
32	2033	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
33	2034	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
34	2035	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
35	2036	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
36	2037	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
37	2038	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	11.80	14.60	46.90
38	2039	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	11.80	14.60	46.90
39	2040	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
40	2041	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
41	2042	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
42	2043	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
43	2044	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	8.75	11.55	49.95
44	2045	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	8.75	11.55	49.95
45	2046	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
46	2047	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
47	2048	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
48	2049	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
49	2050	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
50	2051	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
51	2052	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
52	2053	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
53	2054	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
54	2055	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
55	2056	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
56	2057	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
57	2058	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
58	2059	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
59	2060	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
60	2061	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
61	2062	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
62	2063	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70
63	2064	22.10	33.50	1.90	4.00	61.50	-	-	-	-	-	0.50	0.30	2.00	-	2.80	58.70

EIRR= 15.4%
B/C = 1.40 (at discount rate: 12%)
NPV= 35.3 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (9/11)
(Ba River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Investment					O/M			Replace-ment	Total Cost	
							Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.76	0.76	-	-	-	-	0.76	-0.76
2	2003	-	-	-	-	-	-	-	-	0.76	0.76	-	-	-	-	0.76	-0.76
3	2004	-	-	-	-	-	-	1.16	2.55	1.14	4.85	-	-	-	-	4.85	-4.85
4	2005	-	-	-	-	-	-	1.16	4.25	1.14	6.55	-	-	-	-	6.55	-6.55
5	2006	-	-	-	-	-	24.95	1.16	4.25	3.81	34.17	-	-	-	-	34.17	-34.17
6	2007	-	-	-	-	-	54.90	1.16	4.25	7.61	67.92	-	-	-	-	67.92	-67.92
7	2008	-	-	-	-	-	54.90	1.16	4.25	7.61	67.92	-	-	-	-	67.92	-67.92
8	2009	-	-	-	-	-	54.90	1.16	4.25	7.61	67.92	-	-	-	-	67.92	-67.92
9	2010	-	-	-	-	-	54.90	1.17	3.40	7.61	67.08	-	-	-	-	67.08	-67.08
10	2011	-	-	-	-	-	54.90	1.17	2.13	9.51	67.71	-	-	-	-	67.71	-67.71
11	2012	-	-	-	-	-	54.90	1.17	2.13	9.51	67.71	-	-	-	-	67.71	-67.71
12	2013	0.46	17.09	26.10	1.40	45.05	54.90	-	2.13	9.51	66.54	0.75	0.17	0.68	-	68.13	-23.08
13	2014	0.93	34.17	52.20	2.86	90.16	17.97	-	1.28	4.76	24.01	1.50	0.33	1.38	-	27.22	62.95
14	2015	0.94	74.04	52.20	3.28	130.45	17.97	-	1.28	4.76	24.01	1.50	0.72	1.58	-	27.80	102.65
15	2016	0.95	85.43	52.20	3.59	142.16	17.97	-	1.28	4.76	24.01	1.50	0.83	1.73	-	28.06	114.10
16	2017	0.97	96.82	52.20	3.95	153.94	17.97	-	1.28	4.76	24.01	1.50	0.94	1.90	-	28.35	125.59
17	2018	0.98	108.21	52.20	4.32	165.70	14.97	-	1.28	4.76	21.01	1.50	1.05	2.08	-	25.63	140.07
18	2019	0.99	113.90	52.20	4.73	171.82	1.50	-	1.28	2.38	5.16	1.50	1.10	2.28	-	10.04	161.79
19	2020	1.00	113.90	52.20	5.20	172.30	1.47	-	1.27	2.38	5.12	1.50	1.10	2.50	-	10.22	162.08
20	2021	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
21	2022	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
22	2023	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
23	2024	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
24	2025	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
25	2026	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
26	2027	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
27	2028	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
28	2029	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
29	2030	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
30	2031	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
31	2032	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
32	2033	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
33	2034	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
34	2035	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
35	2036	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
36	2037	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
37	2038	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	40.00	45.10	127.20
38	2039	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	40.00	45.10	127.20
39	2040	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
40	2041	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
41	2042	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
42	2043	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
43	2044	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	25.95	31.05	141.25
44	2045	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	25.95	31.05	141.25
45	2046	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
46	2047	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
47	2048	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
48	2049	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
49	2050	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
50	2051	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
51	2052	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
52	2053	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
53	2054	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
54	2055	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
55	2056	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
56	2057	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
57	2058	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
58	2059	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
59	2060	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
60	2061	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
61	2062	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
62	2063	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20
63	2064	1.00	113.90	52.20	5.20	172.30	-	-	-	-	-	1.50	1.10	2.50	-	5.10	167.20

EIRR= 15.6%
B/C = 1.44 (at discount rate: 12%)
NPV= 103.9 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (10/11)
(Se San River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Investment					O/M			Replace-ment	Total Cost	
							Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.37	0.37	-	-	-	-	0.37	-0.37
2	2003	-	-	-	-	-	-	-	-	0.37	0.37	-	-	-	-	0.37	-0.37
3	2004	-	-	-	-	-	-	0.39	1.25	0.56	2.20	-	-	-	-	2.20	-2.20
4	2005	-	-	-	-	-	-	0.39	2.09	0.56	3.04	-	-	-	-	3.04	-3.04
5	2006	-	-	-	-	-	12.25	0.39	2.09	1.86	16.59	-	-	-	-	16.59	-16.59
6	2007	-	-	-	-	-	26.95	0.39	2.09	3.71	33.14	-	-	-	-	33.14	-33.14
7	2008	-	-	-	-	-	26.95	0.39	2.09	3.71	33.14	-	-	-	-	33.14	-33.14
8	2009	-	-	-	-	-	26.95	0.39	2.09	3.71	33.14	-	-	-	-	33.14	-33.14
9	2010	-	-	-	-	-	26.95	0.40	1.67	3.71	32.73	-	-	-	-	32.73	-32.73
10	2011	-	-	-	-	-	26.95	0.40	1.04	4.64	33.03	-	-	-	-	33.03	-33.03
11	2012	-	-	-	-	-	26.95	0.40	1.04	4.64	33.03	-	-	-	-	33.03	-33.03
12	2013	0.09	3.89	8.65	0.51	13.14	26.95	-	1.04	4.64	32.63	0.60	0.03	0.24	-	33.50	-20.36
13	2014	0.19	7.77	17.30	1.05	26.30	8.82	-	0.63	2.32	11.77	1.20	0.06	0.50	-	13.53	12.78
14	2015	0.19	16.84	17.30	1.20	35.52	8.82	-	0.63	2.32	11.77	1.20	0.13	0.57	-	13.67	21.85
15	2016	0.19	19.43	17.30	1.31	38.23	8.82	-	0.63	2.32	11.77	1.20	0.15	0.62	-	13.74	24.49
16	2017	0.19	22.02	17.30	1.44	40.95	8.82	-	0.63	2.32	11.77	1.20	0.17	0.68	-	13.82	27.13
17	2018	0.20	24.61	17.30	1.58	43.68	7.35	-	0.63	2.32	10.30	1.20	0.19	0.75	-	12.44	31.24
18	2019	0.20	25.90	17.30	1.73	45.13	0.73	-	0.63	1.16	2.52	1.20	0.20	0.82	-	4.74	40.39
19	2020	0.20	25.90	17.30	1.90	45.30	0.72	-	0.61	1.19	2.52	1.20	0.20	0.90	-	4.82	40.48
20	2021	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
21	2022	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
22	2023	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
23	2024	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
24	2025	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
25	2026	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
26	2027	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
27	2028	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
28	2029	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
29	2030	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
30	2031	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
31	2032	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
32	2033	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
33	2034	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
34	2035	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
35	2036	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
36	2037	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
37	2038	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	31.85	34.15	11.15
38	2039	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	31.85	34.15	11.15
39	2040	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
40	2041	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
41	2042	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
42	2043	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
43	2044	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	12.40	14.70	30.60
44	2045	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
45	2046	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
46	2047	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
47	2048	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
48	2049	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
49	2050	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
50	2051	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
51	2052	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
52	2053	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
53	2054	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
54	2055	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
55	2056	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
56	2057	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
57	2058	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
58	2059	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
59	2060	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
60	2061	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
61	2062	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
62	2063	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00
63	2064	0.20	25.90	17.30	1.90	45.30	-	-	-	-	-	1.20	0.20	0.90	-	2.30	43.00

EIRR= 9.9%
B/C = 0.79 (at discount rate: 12%)
NPV= -24.7 (at discount rate: 12%)

Table I.14 Cost-Benefit Analysis (11/11)
(Srepok River Project)

Unit: Million US$

Year in order	Year	Benefit					Cost										Net Cash Flow
							Investment					O/M			Replace-ment	Total Cost	
		Flood control	Irrigation and drainage	Hydro-power	Water supply	Total Benefit	Direct constr.	Resettle-ment	Engring & admin.	Phisical conti.	Sub-total	Dam& power	Irrigation drainage	Water supply			
0	2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	2002	-	-	-	-	-	-	-	-	0.65	0.65	-	-	-	-	0.65	-0.65
2	2003	-	-	-	-	-	-	-	-	0.65	0.65	-	-	-	-	0.65	-0.65
3	2004	-	-	-	-	-	-	1.87	2.13	0.97	4.97	-	-	-	-	4.97	-4.97
4	2005	-	-	-	-	-	-	1.87	3.55	0.97	6.39	-	-	-	-	6.39	-6.39
5	2006	-	-	-	-	-	20.80	1.87	3.55	3.23	29.45	-	-	-	-	29.45	-29.45
6	2007	-	-	-	-	-	45.75	1.87	3.55	6.46	57.63	-	-	-	-	57.63	-57.63
7	2008	-	-	-	-	-	45.75	1.87	3.55	6.46	57.63	-	-	-	-	57.63	-57.63
8	2009	-	-	-	-	-	45.75	1.87	3.55	6.46	57.63	-	-	-	-	57.63	-57.63
9	2010	-	-	-	-	-	45.75	1.88	2.84	6.46	56.93	-	-	-	-	56.93	-56.93
10	2011	-	-	-	-	-	45.75	1.88	1.77	8.07	57.47	-	-	-	-	57.47	-57.47
11	2012	-	-	-	-	-	45.75	1.88	1.77	8.07	57.47	-	-	-	-	57.47	-57.47
12	2013	-	8.78	25.65	2.13	36.56	45.75	-	1.77	8.07	55.59	0.75	0.08	1.03	-	57.44	-20.88
13	2014	-	17.55	51.30	4.35	73.20	14.97	-	1.06	4.03	20.06	1.50	0.15	2.09	-	23.80	49.40
14	2015	-	38.03	51.30	4.98	94.30	14.97	-	1.06	4.03	20.06	1.50	0.33	2.39	-	24.28	70.02
15	2016	-	43.88	51.30	5.45	100.63	14.97	-	1.06	4.03	20.06	1.50	0.38	2.62	-	24.56	76.07
16	2017	-	49.73	51.30	6.00	107.03	14.97	-	1.06	4.03	20.06	1.50	0.43	2.89	-	24.87	82.16
17	2018	-	55.58	51.30	6.56	113.43	12.48	-	1.06	4.03	17.57	1.50	0.48	3.15	-	22.70	90.73
18	2019	-	58.50	51.30	7.19	116.99	1.25	-	1.06	2.02	4.33	1.50	0.50	3.46	-	9.79	107.20
19	2020	-	58.50	51.30	7.90	117.70	1.25	-	1.06	2.00	4.31	1.50	0.50	3.80	-	10.11	107.59
20	2021	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
21	2022	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
22	2023	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
23	2024	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
24	2025	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
25	2026	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
26	2027	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
27	2028	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
28	2029	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
29	2030	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
30	2031	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
31	2032	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
32	2033	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
33	2034	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
34	2035	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
35	2036	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
36	2037	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
37	2038	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	39.50	45.30	72.40
38	2039	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	39.50	45.30	72.40
39	2040	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
40	2041	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
41	2042	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
42	2043	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
43	2044	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	16.95	22.75	94.95
44	2045	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	16.95	22.75	94.95
45	2046	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
46	2047	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
47	2048	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
48	2049	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
49	2050	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
50	2051	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
51	2052	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
52	2053	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
53	2054	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
54	2055	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
55	2056	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
56	2057	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
57	2058	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
58	2059	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
59	2060	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
60	2061	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
61	2062	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
62	2063	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90
63	2064	-	58.50	51.30	7.90	117.70	-	-	-	-	-	1.50	0.50	3.80	-	5.80	111.90

EIRR= 13.5%
B/C = 1.16 (at discount rate: 12%)
NPV= 33.9 (at discount rate: 12%)