Appendix V

SPECIFICATION OF THE EQUIPMENT FOR STRONG MOTION INSTRUMENTS AND AMBIENT VIBRATION SURVEY SYSTEM

Quotation # KMS 90-526
Date: 11/Dec/90

KINEMETRICS SYSTEMS

INVOICE TO:

United Nations
Attn: Dr. Jakim Petrovski

SHIP TO:

Please Advise

Your Request: Verbal

Our Quotation: KMS 90-526

Date: 11/Dec/90

Date: 11/Dec/90

Delivery: 120 Days after receipt of purchase order

Ship Via: Air Freight

Ship Terms: FOB Pasadena, CA

Terms: To be negotiated

Quotation Validity: 120 Days

Approved By: MFL

Item	Qty	Part No.	Description	U.S. Dollars Unit Cost	Extension
			OPTION A		
01.0	50	100200	Model. SMA-1 Analog Film Recording Strong Motion Accelerograph, Full-scale range: +/- 1g	$ 4,235.00	$ 211,750.00
01.1	100	880004	Film, 70 mm x 50 foot roll	80.00	8,000.00
01.2	25	100268	Film Magazine and case	70.00	1,750.00
01.3	200	700049	Desiccant	4.00	800.00
01.4	1		SMA Scanview DeskTop Digitization Software Package (Includes VOL. 1, 2, 3)	2,500.00	2,500.00

KINEMETRICS | SYSTEMS

Item	Qty	Part No	Description	U.S. Dollars Unit Cost	Extension
01.3	1		LOT - Compaq DeskPro and Scanner, including the following: - 1 Mbyte RAM - 1.2 Mbyte floppy disk drive - 100 Mbyte hard disk drive - VGA color monitor - 80287 Coprocessor - DOS 3.3 - Microsoft mouse - HP Lazerjet II with cable and toner, includes 2 Mbyte extension memory -HP Scanjet Plus, includes interface kit for scanner - PrintaPlot Program	20,260.00	20,260.00
			Subtotal Option A		$ 245,060.00
			5% Quantity Discount		-12,253.00
			Total FOB Pasadena, CA		$ 232,807.00
			Inland cartage and documentation		195.00
			Air Freight to Manila		2,950.00
			Insurance		1,400.00
			Total CIF Manila (Option A)		$ 237,342.00
			OPTION B		
02.0	50	107200	Model: SSA-1 Solid State Accelerograph, 2g, .5 Mbyte CMOS RAM (Includes one set of SSA-1 Support Software)	6,900.00	345,000.00
02.1	200	700049	Desiccant	4.00	800.00

Item	Qty	Part No.	Description	U.S. Dollars Unit Cost	Extension
02.2	1	107392-01	Cable, SSA-1 to PC Serial Interface, 25 feet	175.00	175.00
02.3	1		Portable PC, Epson Equity LT 286e with 1 Mbyte RAM, one 3.5" floppy disk drive, EGA backlit screen, cigarette lighter adapter, carrying case, removable 20 Mbyte hard disk	6,020.00	6,020.00
02.4	1		LOT - SWS-1 Hardware, including:	10,655.00	10,655.00
			Compaq DeskPro 286-12 with: - 40 Mbyte hard disk - 640 Kbyte RAM - 1 Serial Port - 1 Parallel Port - 80287 Coprocessor - VGA Monitor and adapter - DOT Matrix Printer (Epson) with cable - HP Pen Plotter with cable - DOS 3.3		
02.5	1		SWS-1 Software including (Object Code only), including: Time Series Editor Strong Motion Data Analysis Software, including: - Format Conversion Program (VOLIDS) - Data Plotting Software (V1PLOT, V2PLOT, V3PLOT) - Instrument correction and integration (Vol 2) - Response Spectra Calculation (Vol 3)	1,800.00	1,800.00
			Subtotal Option D		$ 364,450.00
			5% Quantity Discount		-18,223.00
			Total FOB Manila		$ 346,227.00

KINEMETRICS SYSTEMS

Item	Qty	Part No.	Description	U.S. Dollars Unit Cost	Extension
			Inland cartage & documentation		210.00
			Air Freight to Manila		3,395.00
			Insurance		2,080.00
			Total CIF Manila (Option B)		$ 351,908.00
			OPTION C		
03.0	50	108000	Model SSA-2 Solid State Accelerograph, 1g, 256Kbyte CMOS RAM. Includes one copy of SSA-2 Support Software	4,620.00	231,000.00
03.1	200	700049	Desiccant	4.00	800.00
03.2	1	107392-01	Cable, SSA-2 to PC Serial Interface, 25 feet	175.00	175.00
03.3	1		Portable PC: Epson Equity LT 286e with 1 Mbyte RAM, one 3.5" floppy disk drive, ECA backlit screen, cigarette lighter adapter, carrying case, removable 20 Mbyte hard disk	6,020.00	6,020.00
03.04	1		LOT - SWS-1 Hardware, including:	10,655.00	10,655.00
			Compaq DeskPro 286-12 with: - 40 Mbyte hard disk - 640 Kbyte RAM - 1 Serial Port - 1 Parallel Port - 80287 Coprocessor - VGA Monitor and adapter - EGT Matrix Printer (Epson) with panic - HP Pen Plotter with cable - DOS 3.3		

Item	Qty	Part No.	Description	U.S. Dollars Unit Cost	Extension
3.5	1		SWS-1 Software, including (Object Code only), including: Time Series Editor Strong Motion Data Analysis Software, including: - Format Conversion Program (VOLIDS) - Data Plotting Software (V1PLOT, V2PLOT, V3PLOT) Instrument Correction and Integration (Vol 3) - Response Spectra Calculation (Vol 3)	1,800.00	1,800.00
			Subtotal Option C		$ 250,450.00
			5% Quantity Discount		-12,523.00
			Total FOB Pasadena (Option C)		$ 237,927.00
			Inland cartage & documentation		160.00
			Air Freight to Manila		2,225.00
			Insurance		1,430.00
			Total CIF Manila (Option C)		$ 241,742.00

Quotation # KMS 90-527
Date. 11/Dec/90

KINEMETRICS SYSTEMS

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Terms: To be negotiated

Quotation Validity: 120 Days

Approved By: MFL

Item	Qty	Part No	Description	U.S. Dollars Unit Cost	Extension
			Vibration Survey System, consisting of:		
01.00	6	100625	Model: WR-1 Wideband Ranger Seismometer	$ 2,900.00	$ 17,400.00
01.01	1	107425	Model; SSR-1 Solid State Recorder, three channel, 1Mbyte CMOS RAM, standard filters (includes one copy of SSR-1 Support Software)	11,940.00	11,940.00
01.02	1	107563-03	Additional 3 Mbytes of expansion memory (Installed in Item 01.0)	4,960.00	4,960.00
01.03	1	107570	Additional 3 channel front end with standard filters (Installed in Item 01.01)	2,060.00	2,060.00
01.04	2	100630	Cable, three WR-1's to SSR-1, with connectors, 25 feet	430.00	860.00
01.04.1		840107	Additional cable per foot	7.05	As Required

Item	Qty	Part No.	Description	U.S. Dollars Unit Cost	Extension
01.05	1		Portable PC: Epson Equity LT 286e with 1 Mbyte RAM, one 3.5" floppy disk drive, EGA backlit screen, cigarette lighter adapter, carrying case, 20 Mbyte removable hard disk	6,020.00	6,020.00
01.06	1	301420	Time Series Editor Software with CNVSSR DAT file converter and TSEDIT (Object Code only)	600.00	600.00
01.07	1	301470	Vibration Survey Software (FFT, QFFT)	600.00	600.00
01.08	1	107392-01	Cable, SSR-1 to PC Serial Interface, 25 feet	175.00	175.00
01.09	1	107611	Cable, SSR-1 to PC Parallel Interface, 10 feet	175.00	175.00
			Total FOB Pasadena, CA		$ 44,810.00 (Plus additional cable)
			Inland cartage and documentation		85.00
			Air Freight to Manila		1,030.00
			Insurance		275.00
			Total CIF Manila		$ 46,200.00 plus additional cable

Analog Photo Film
Strong Motion Accelerograph
Export
List 1-1

KINEMETRICS SYSTEMS

del	Part Number	Description	Price
SMA-1	100200	Strong Motion Accelerograph, 1g	4,235.00
		SMA-1 with 1/4g, 1/2g or 2g option	5,290.00
		OPTIONS	
	100700	Horizontal Trigger, replacing vertical, add	115.00
	100338	Horizontal Trigger, supplementing vertical, add	715.00
	100335	Dummy Trigger, subtract	(320.00)
TCG-1A	103320-01	Time Code Generator (standard accuracy)	850.00
TCG-1B	103320-02	Time Code Generator (high accuracy)	1,235.00
	100370-04	WWVB Receiver, mounted in accelerograph	775.00
A60-FS	790011	Antenna for WWVB Receiver	360.00
	100370-05	DCF-77 Receiver, mounted in accelerograph	950.00
A-LFS	790029	Antenna for DCF-77 Receiver	320.00
) -PCB-252-O	103135	Omega Receiver Option, includes antenna, 50 ft. coax and pre-amp	2,100.00
	103160	External battery and charger, necessary for Omega option	520.00
		Additional coaxial cable, 50 ft.	90.00
		SPARES	
	100268	Film Magazine and Case	70.00
	700084	Charger, battery (110/220Vac)	32.00
	100240	Drive Motor, 8 rpm (12Vac)	115.00
	100105	Vertical Starter, 10 seconds (Specify setpoint and to be used in SMA-1)	605.00
	100375	Vertical Starter, 60 seconds (Specify setpoint and to be used in SMA-1)	610.00
	800029	Diode, Zener, 13.5 V, 1%	8.00
	100130	Amplifier Board, for vertical starter	70.00
	100140	Switch Board, 10 seconds, for vertical starter	100.00
	100175	Switch Board, 60 seconds, for vertical starter	110.00
		Spare Vertical Trigger Relays:	
	840321	K1 Relay, needle, 1 form A, 5V	20.00
	840001	K2 or K3 Relay, reed, 2 form A, 12V	35.00

Analog Photo Film
Strong Motion Accelerograph
Export
List 1-2

KINEMETRICS SYSTEMS

Model	Part Number	Description	Price
		Spare Timing and Motor Drive Components:	
	100287	Motor Drive Board	120.00
	100350	Time Mark Generator	155.00
	100385	Time Pulse Board	80.00
	100295	Turn On Relay Board	90.00
	100150	Accelerometer - 1g	415.00
	100150	Accelerometer - 1/4g or 1/2g	505.00
	100235	Take-Up Drive	70.00
	100244	Take-Up Spring Drive Belt	7.00
		ACCESSORIES	
		SMA-1 Service Manual	60.00
	100390-04	WWVB Receiver Retrofit Kit	995.00
	100390-05	DCF-77 Receiver Retrofit Kit	1,170.00
	103145	Omega Receiver Retrofit Kit, includes Omega Receiver, antenna, 50 ft. coax and pre-amp	2,015.00
		Organizer II handheld terminal for OM-PCB-252-0, with RS-232C interface	700.00
	500035	Solar Cell for SMA-1	455.00
	840174	Cable, SMA-1 to SMA-1, per foot (Belden 8404 or equal)	1.70
C	100750	Field Calibrator	800.00
DC-1	790012	Time Display Controller for TCG-1	1,385.00
[illegible]-2	790013	Time Display Controller for TCG-1, with reference, TCG-1B	5,610.00
	100203	Installation and Hardware Kit	28.00
	100208	Anchor Driver	70.00
		Tilt Table, P/N F100200	2,120.00
		SUPPLIES	
	880004	Film, 70 mm x 50 foot roll	80.00
	700049	Desiccant	4.00
	103416	Battery Set, rechargeable, 6V (2 of JC-628, replaces JC-626-1)	80.00

Prices are FOB Factory Pasadena California
Effective April 1, 1990 Printed in the U.S.A.
Subject to change without notice

Solid State Accelerographs
Export
List 4-1

KINEMETRICS SYSTEMS

Model	Part Number	Description	Price
SA-1	107200	Solid State Accelerograph, 2g, .5 Mbyte CMOS RAM	6,900.00
		SSA-1 with 1g, 1/2g, 1/4g full-scale optional sensors	6,900.00
		SSA-1 without FBA deck, for use with FBA-23 (includes option P/N 107315)	6,160.00
		SOFTWARE	
	301506	SSA-1 Support Software (with Source Code) includes: QuickLook, SSA-1 maintenance, and ASCII file converter. This software is supplied with each order of SSA-1.	No Charge
		Crosstalk XVI Communications Program	240.00
		Turbo Pascal Compiler, to modify and edit SSA-1 Support Software	120.00
		OPTIONS	
	107350-01	Data Storage Module, 1 MByte (implement 3 MByte)	660.00
	107305	Additional 3 Pole Filter Board	460.00
	107310	Provision for Fourth Channel FBA-11 Input	185.00
	107315	Provision for External FBA-23	185.00
TCG-1A	107215-01	Time Code Generator (standard accuracy)	850.00
TCG-1B	107215-02	Time Code Generator (high accuacy)	1,235.00
	107392-01	Cable, SSA-1 to PC RS-232C interface	175.00
60-P3	790011	Antenna for WWVB Receiver	360.00
60-5	107220-05	DCF-77 Receiver, mounted in accelerograph	950.00
A-LFS	790029	Antenna for DCF-77 Receiver, with 50 ft. coax	320.00
M-PCB-251	107335	Omega Receiver Option, includes antenna, 50 ft. coax and PA-12 pre-amp	2,100.00
		Additional coaxial cable, 50 ft.	90.00
		SPARES	
	107300	Analog to Digital Converter Board	1,110.00
	107325	I/O Processor Board	790.00
	107340-01	Data RAM Controller Board	630.00

Solid State Accelerographs
Export
List 4-2

KINEMETRICS SYSTEMS

odel	Part Number	Description	Price
	107350-01	Data Storage Module, 1 MByte	1,640.00
	107350-02	Data Storage Module, .5 MByte	980.00
	107290-01	Power Supply and Sequencer Board	470.00
	107240	FBA Accelerometers and Deck Plate (specify full-scale range: 1/4g, 1/2g, 1g, or 2g)	2,980.00
	700181	Charger, battery (110/220 Vac)	50.00
		ACCESSORIES	
		Portable PC: Epson Equity LT with 640KB RAM, two 3.5" 720KB floppy disk drives, backlit screen, cigarette lighter adapter and carrying case.	3,270.00
		(For additional computer hardware, see price list 21)	
	107400	Extended Interconnect System, consists of:	800.00
		• Interface Box	
		• mating connectors, Box to Box	
		• interconnect cable, SSA-1 to Box	
		Cable, Box to Box, bulk, per foot	1.80
	107375	Extender Board Assembly for SSA-1	100.00
	107395	External Mounting Kit, including 3 hold down clamps, bolts, concrete anchors and sealing plug for internal hole	90.00
	700170	Internal Anchor Kit, including bolt, thread seals, washer and concrete anchor	5.00
		XCELITE P4 7/16" Nut Driver for installation	10.00
[illegible]	[illegible]	Time Display Controller for [illegible]	[illegible]
TDC-2	790013	Time Display Controller for TCG-1, with reference, TCG-1B	5,610.00
		Cable:	
	500305-02	Cable, SSA-1 to SSA-1, 3 ft.	155.00
	[illegible]	Cable, SSA-1 to Modem [illegible] interface, [illegible]	[illegible]
	107392-01	Cable, SSA-1 to PC RS-232C interface, 25 ft.	175.00
	107316	Cable, FBA-23 to SSA-1, with connectors, 10 ft.	250.00
	840356	Additional cable, per foot	2.65
	[illegible]	Cable, FBA-11 to SSA-1, with connectors, 10 ft.	[illegible]
	700277	Additional cable, per foot	4.00

Prices are FOB Factory, Pasadena, California.
Effective April 1, 1990. Printed in the U.S.A.
Subject to change without notice

Solid State Accelerographs
Export
List 4.3

odel	Part Number	Description	Price
		SUPPLIES	
	103413	Battery Set, rechargeable, 12V (2 of LCR12V6.5P)	115.00
	[illegible]	[illegible]	[illegible]
	840326	Clock Back-up Battery, Lithium (1 of BR2325-1 HE)	5.00
	700049	Desiccant	4.00
SSA 2	108000	Solid State Accelerograph, with Internal Triaxial Accelerometers, 256KB CMOS RAM (Specify full scale sensitivity: 2g, 1g, or 1/2g)	4,600.00
		SSA-2 without internal accelerometers	3,600.00
		OPTIONS	
	107240	FBA accelerometers, replaces standard accelerometers, add	480.00
	108040	Additional 256KB CMOS RAM	475.00
	108080	Provision for External FBA-23	265.00
T G-1A	108090-01	Time Code Generator (standard accuracy)	850.00
TCG-1B	108090-02	Time Code Generator (high accuracy)	1,235.00
C' 1-PCB-252-0	108085	Omega Receiver Option, includes antenna, 50 ft. coax and PA-12 pre-amp	2,100.00
		ACCESSORIES	
		Portable PC: Epson Equity LT with 640KByte RAM, two 3.5" 720KB floppy disk drives, backlit screen, cigarette lighter adapter and carrying case	3,270.00
TDC-1	790012	Time Display Controller for TCG-1	1,385.00
T C-2	790013	Time Display Controller for TCG-1, with reference, TCG-1B	5,610.00
		SUPPLIES	
	840301	Battery, rechargeable, 12V (LCR12V6.5P)	60.00
	840358	Clock/Memory Back up battery, Lithium (2 required of T-06141), each	20.00
	700049	Desiccant	4.00

Solid State Accelerographs
Export
List 4-3

odel	Part Number	Description	Price
		SUPPLIES	
	[illegible]	Battery, rechargeable, 12V (LCR12V6.5P)	115.00
	840358	Memory Back-up Battery, Lithium (1 of T06141)	20.00
	840326	Clock Back-up Battery, Lithium (1 of BR2325-1 HE)	5.00
	700049	Desiccant	4.00
SSA-2	108000	Solid State Accelerograph, with Internal Triaxial Accelerometers, 256KB CMOS RAM	4,620.00
		(Specify full scale sensitivity: 2g, 1g, or 1/2g)	
		SSA-2 without internal accelerometers	3,600.00
		OPTIONS	
	107240	FBA accelerometers, replace standard accelerometers, add	480.00
	108040	Additional 256KB CMOS RAM	475.00
	108080	Provision for External FBA-23	265.00
CG-1A	108090-01	Time Code Generator (standard accuracy)	850.00
TCG-1B	108090-02	Time Code Generator (high accuracy)	1,235.00
OM-PCB-252-0	108085	Omega Receiver Option, includes antenna, 50 ft. coax and PA-12 pre-amp	2,100.00
		ACCESSORIES	
		Portable PC: Epson Equity LT with 640KByte RAM, two 3.5" 720KB floppy disk drives, backlit screen, cassette tape adapter and carrying case	3,270.00
TDC-1	790012	Time Display Controller for TCG-1	1,385.00
DC-2	790013	Time Display Controller for TCG-1, with reference, TCG-1B	5,610.00
		SUPPLIES	
	840301	Battery, rechargeable, 12V (LCR12V6.5P)	60.00
	840358	Clock/Memory Back-up battery, Lithium	20.00
		(2 required of T-06141), each	
	700049	Desiccant	4.00

United Nations Centre for Human Settlements (HABITAT)

Expert Mission to Assist in Reconstruction and Development After the Philippines Earthquake of 16 July 1990

PHI/90/FO1

Attachment

PROJECT FORMULATION FRAMEWORK

DRAFT FOR DISCUSSION ONLY

GOVERNMENT OF THE REPUBLIC OF THE PHILIPPINES

UNITED NATIONS DEVELOPMENT PROGRAMME

PROJECT FORMULATION FRAMEWORK

COUNTRY:	Republic of the Philippines
DATE:	December 1990
PROJECT NO.:	PHI/90/xxx
PROPOSED TITLE:	Integration of disaster mitigation strategies into the reconstruction and development process in the Philippines.

ESTIMATED DURATION: Thirty months

TENTATIVE UNDP + COST SHARING CONTRIBUTION: US$ 2,392,000 (full project)
US$ 698,000 (preparatory phase)

ESTIMATED COUNTERPART COSTS:

SOURCE OF FUNDS: IPF SPR

Brief Description: The project is designed to: 1) provide immediate technical assistance to the post-earthquake reconstruction and rehabilitation phase, and assist with the coordination of the mobilization and channeling of international contributions and assistance from other sources to the long-term rehabilitation programme in the earthquake region; and, 2) enhance the Government's long term disaster mitigation programme.

A. Development problem(s) intended to be addressed by proposed project

1. At sectorial or subsectorial level (the "macro" level):

Macro	Cause	Evidence
Significant slow down in the growth of the national economy.	The Luzon Earthquake.	Performance of economy in the months following the disaster.

The earthquake that struck central Luzon, the main island of the Philippine archipelago, on 16 July severed road and telecommunications links, made rubble of homes, commercial establishments, factories and agricultural installations. In one resort city about half of the hotel rooms were lost. Fortunately the capital city, Manila, although badly shaken, suffered only comparatively light damage. None-the-less, the impact of the earthquake on the nations economy and social development is far from negligible.

According to the Asian Development Bank (ADB), more than 2000 people died in the disaster (the second highest death toll this century from an earthquake), and more than 3,500 were injured. In terms of property losses, over 15 billion pesos (US $ 555.5 million) of private and public property were damaged or destroyed. As a result over 148,000 people were left homeless.

The destruction caused by the earthquake will have serious repercussions on the lives and economic activities of not only the people directly affected but of Filipinos in general. The widespread problem of broken road links, for instance, has not only choked the flow of goods and supplies for farmers and manufacturers, but it has meant who people that barely noticed the seismic event are feeling their standard of living decline in its aftermath. In fact, the Government reports in its "Reconstruction and Development Program" that the earthquake will have the following macroeconomic implications:

a) Output

> As a result of the earthquake, substantial losses are expected in the outputs of regions I, II, III and CAR [regions comprising central Luzon] which together account for 15 percent of the country's domestic output. These regions are major producers of the country's supply of essential foodstuffs, accounting for about 31.6 percent of the total value added in agriculture. The CAR accounted for over 47 percent of the country's total metallic mineral production in 1988. Moreover, La Union and Benguet [provinces] are major tourist destinations.

The implication of the earthquake on national development will be significant (particularly since they will be added to other factors contributing negatively to economic growth, namely the Middle East crisis and other natural disasters such as the typhoon that devastated the central Visayas islands three months later). The economy is expected to slow down reducing the growth of the GDP in 1990 by an estimated 1.2 - 1.3 percentage points from the pre-earthquake forecast of 4.3 percent. Correspondingly, GNP growth will slow down by an estimated 1.2 - 1.6 percentage points from the original forecast of 4.8 percent. Although this already takes into account the impact on the economy of the hostilities in the Middle East, it does not take into account the Visayas typhoon.

b) Balance of Payments

The surplus in the country's balance of payments (BOP) after rescheduling and new money is also expected to decline by US $ 73 million in 1990 from the pre-earthquake estimate of US $ 418 million due to the earthquake alone. The effects of the earthquake will be felt largely by the export and tourism sectors. Export receipts will likely contract following a reduction in the export volumes as a result of the disruption in production activities at the Baguio Export Processing Zone (BEPZ), Philex Mining and Benguet Mining, as well as of damages to the fishponds in Regions I, II, III, and to the tobacco plantations in Abras and La Union. On the other hand, tourist receipts are expected to decline due to lower tourist arrivals in some areas in the north which have been heavily damaged by the earthquake, particularly Baguio which is a favourite tourist destination.

c) Prices and Employment

With the tightening of the food supply as a result of bottlenecks in the distribution from farm to market, the price of food in Metro Manila went up from 16.5 percent in July from 13.5 percent in June. Although the situation was not replicated in other areas and food supply has already eased up from the July situation, the average consumer price index for 1990 will nonetheless increase from the original estimate of 11.7 percent to 13.4 - 14.0 percent.

Meanwhile, estimates of job losses directly attributable to the earthquake for the affected regions are as follows: CAR 8,556, Region I 11,345, Region II 10,500 for a total of 41,845. Although there are no official reports yet available on the number of job losses in view of the earthquake in Region III or the country as a whole, given the declines in production estimated during the year, the national unemployment rate could increase from the original estimate of 10.0

percent to at least 10.6 percent or by an additional 152,000 unemployed.

d) Impact on major economic and social sectors

i) Agriculture. The overall economic losses caused by the earthquake far exceeded the physical losses due to direct damage. While physical losses reflected only the current losses (i.e. cost of production and existing cost of stock in fishponds), overall economic losses include, among others: (a) foregone income from existing crops affected by the earthquake; (b) effects of disruption in distribution flows of agricultural output and inputs due to damages to infrastructure and the consequent transport problems; and, (c) losses from displaced labour. Moreover, the disruption in the flow of goods and services to the affected region is currently causing a shortage of agricultural inputs. Since a substantial 40 percent of the country's rice growing area, and 52 percent of the vegetable growing area are located in the earthquake affected region, access to the region is essential to avert food shortages. The required inputs are fertilizers, seeds and pesticides.

ii) Industry, Trade and Tourism. The greatest impact in terms of foregone revenues and opportunities is on the Tourism subsector. The losses in this subsector have been projected at a minimum of 1.5 billion pesos. The mining industry is also projected to have lost about 1.2 billion pesos from reduced production of gold, copper and silver. In manufacturing the gross value added is expected to be severely affected since the stricken regions contribute about 11 percent to the country's manufacturing output. Foregone revenues in manufacturing are expected to be around 250 million pesos by year end.

iii) Health Sector. The damages inflicted on health services facilities constitute a serious burden to the government not only in terms of rehabilitation and reconstruction costs but also in meeting the service demand of the population. The replacement cost, estimated at 30 million pesos, will compound the bleak financial situation of the sector.

iv) Housing. The loss of over 25,000 housing units will strain the already troubled low income housing sector. Not only will these units have to be built, but there will be no units released by the tenants when they move to the new housing.

iv) Education. The damage suffered by educational facilities, whether partial or total, will worsen the backlog of adequate classrooms in the country. Educational standards will drop partly due to the dislocation of earthquake affected families, partly to some students being forced to leave school to engage in

livelihood endevours to assist their families, partly due to overcrowding in existing schools.

In summary, a disaster of this magnitude has significant effects throughout the country although the immediate physical damage was limited to central Luzon island. It follows that reconstruction and rehabilitation efforts, if properly carried out, can not only minimize the negative impact of the earthquake, but can indeed revitalize the affected region and in turn the nation.

2. At level subject to solution by the proposed project itself (the "micro" level):

Micro	Cause	Evidence
Damages to physical infrastructure which supports economic and social activities.	The Luzon Earthquake	Destruction of transportation networks, industrial and agricultural installations, and social infrastructure.

The effects on the Philippine economy described above are directly attributable to the physical damages caused by the seismic events of 16 July in Luzon island. A summary of these damages follows.

a) Population. Based on the report of the National Disaster Coordinating Council, the casualties of the disaster amount to 1,283 dead and 2,786 injured. A total of 227,918 families consisting of 1,255,248 persons were directly affected.

b) Housing and urban areas. A total of 25,207 houses were destroyed with an additional 77,249 housing units suffering damage, for a total of 102,456 units affected. Streets suffered damage due to cracks, subsidence and landslides throughout the affected area.

c) Infrastructure. Reports submitted by various agencies place the total cost of damage to public infrastructure and facilities at 16.5 billion pesos, with roads, bridges and water distribution networks sustaining the greatest damage.

Some of the major arterial roads and bridges that were damaged are the San Jose - Sta. Fe section of the Maharlika Highway in Nueva Ecija, the Carmen Bridge in Pangasinan Province, the Baguio-Bontoc Road and the three access roads to Baguio City.

Damages to the national and communal irrigation systems amount to 343 million pesos. These include 81 communal irrigation systems, 11 river irrigation systems, one provincial irrigation office building and several structures associated with the Balog-Balog Multi-purpose project and the Upper Pampanga River Integrated Irrigation System.

Losses to other vital infrastructure include damages to the Binga and Ambuklao Hydroelectric plants, the La Trinidad substation, the Pantabangan hydroelectric plant in Nueva Ecija, and about 217.6 kilometers of distribution lines.

d) Industry, Trade and Tourism. The damages brought about by the earthquake to this sector amounted to about 3.17 billion pesos. The mining industry suffered major losses due to the closure of roads. The bulk of the damage to industry was sustained at the Baguio City Export Processing Zone. The damage here included the loss of two factory buildings as well as breaks in the water and electric networks and access roads. Total floor space lost was 20,000 square meters, affecting 9 companies.

The affected region recorded a total of 1,535 damaged trading establishments, which include 918 commercial establishments, 20 public markets (comprising 592 stalls) and 14 banks. The total cost of the damages is placed at 1.8 billion pesos. Dagupan City suffered the heaviest damage in the trade subsector, due to sinking of a major portion of the Central Business District.

The tourism subsector was badly hit by serious damages to resorts and hotels as well as to old churches. On the whole the tourism subsector sustained a minimum of 572.2 million pesos in damages.

e) Environment. The degradation of the environment in the mountain areas was aggravated by the tremor and consequent land and rock slides. The numerous landslides have also affected low-laying areas as mudflows have moved downstream.

The forestry sector was affected as approximately 800 hectares of newly established plantations were washed away due to landslides while 1.13 million seedlings were covered by mudflows. Around 750 hectares of natural forest and old plantations were also damaged. The total cost of replacement is estimated at 21.4 million pesos.

The affected physical environment, cities, towns, villages, transport and other networks, will have to be rehabilitated in order that the economic and social systems can return to "normalcy". In fact, the massive investments that have to made in the affected area can and should be strategically placed so as to revitalize the economy of the region and the country.

B. Concerned parties/target beneficiaries

1. Who has identified the development problem and how has it come to the attention of UNDP?

The development problem has been identified by the National Economic and Development Authority (NEDA) in their "Reconstruction and Development Program". In this programme, the Government has quantified both the direct and the indirect losses due to the earthquake. It also sets out a clear programme of reconstruction and rehabilitation of the physical damage as a precondition to regaining the development momentum lost to the disaster.

The World Bank as well as the ADB have collaborated with the Government in preparing the reconstruction plan and have already made loans available for the reconstruction.

An advisory mission from UNCHS (Habitat), which visited the Philippines from 21 November to 22 December 1990 has brought this development problem to the attention of UNDP. The report of this mission endorses the analysis made by Government and the proposed strategy for rehabilitation.

2. What particular group or groups are intended to benefit from the solution of the development problem identified above at item A.2 (i.e.,the target beneficiaries)? If appropriate indicate the breakdown of the group(s) by gender.

1.- Target beneficiaries

The target beneficiaries of the project are the population living in the areas devastated by the 16 July earthquake. In particular the lower income groups who have been affected from the loss of work and other income earning opportunities as a consequence of the disaster. The country as a whole will benefit from the improved economic situation once the impediments created by the earthquake are corrected.

C. Pre-project and end of project status

1. The present or pre-project situation:

Wholesale and widespread damage, or destruction, has not occurred in the earthquake affected areas, however, this is not to say that damage is inconsequential. As has been elaborated above, the economic and social impact of the event is significant. Nevertheless damage is generally confined to localized pockets, except in the case of the highland area of Benguet and Nueva Vizcaya where damage is fairly extensive. The type of damage varies according to different topographical and geological conditions, as well as varying shock intensities experienced as follows:

Highland areas of Benguet and Nueva Vizcaya.

- Major landslide damage, notably less severe on forested slopes, and consequent blocking and destruction of transportation networks cutting access to numberless communities.
- Private dwelling and public building damage and loss.
- Damage to water and irrigation systems.
- Destruction of agricultural and forested areas.

Baguio City and Environs.

- Damage and destruction of tourist facilities.
- Major losses of higher educational facilities.
- Limited loss of housing units and disruption of streets within the city due to landslides.
- Some damage to water supply and drainage systems.

Coastal Regions of La Union and Pangasinan Province.

- Damage and minor destruction of road payment.
- Loss of some bridges and damage to others.
- Damage and destruction of schools.
- Damage to other public buildings.
- Limited damage to water systems.
- Damage to fish farm ponds (major economic activity).

Dagupan City and Environs.

- Major ground settlement over large areas of the Central Business District with consequent destruction and/or damage of commercial establishments.
- Damage and localized destruction of main streets within the city.
- One collapsed bridge and others damaged.
- Damage to Provincial Hospital causing temporary relocation.
- Major damage to schools.
- Damage and destruction of water system.

The area affected by the earthquake will require major investments in order to rehabilitate the transportation network, replace the lost housing, schools, hospitals and other public buildings. Economic activities such as tourism, fish farms, agriculture and mining will all require some assistance in re-establishing themselves. The Government of the Philippines has undertaken an emergency rehabilitation programme as follows:

- Building temporary housing units.
- Rehabilitation of roads.
- Environmental sanitation programme in evacuation areas.
- Normalization of basic services such as power, telecommunications and water.
- Relocation of affected families and provision of livelihood.
- Demolition and clearing of debris.
- Restoration of the normal flow of trade and commerce.

Having completed the emergency phase the Government is now

moving into the reconstruction and rehabilitation phase, which it hopes to complete within a two year period.

2. The situation expected at the end of the proposed project: **(It will be useful here to think in terms of the systems or capacity which should be in place in order to provide on a sustained basis the desired outputs or services.)**

By the end of the project it is hoped that not only "normalcy" has been returned to the social and economic life of the affected area, but that the post-earthquake investments in reconstruction and rehabilitation have made a notable improvement in the economic performance of the region. This is to say that the region will be better off than if no disaster had struck.

It is also intended that the project will provide guidelines for mitigating the effects of natural disasters which can then be applied throughout the country.

D. Special considerations

1. Identify those special considerations (i.e., the integration of women in development, the environment, collaboration with NGO's/grass-roots organizations, TCDC, collaboration with the private sector, pre-investment and/or investment potential, etc.) which may be relevant to the proposed project and describe how they influence either the content (i.e., target beneficiaries, immediate objectives, outputs and activities) or form of the project (i.e., method of execution, using TCDC, NGO's, private organizations, etc.).

Low Income Households. Restoring the economy of the affected area is a prerequisite for effective and innovative strategies to assist low income households in securing shelter which has been lost or damaged by the earthquake.

Private Sector. The project is intended to support the development and strengthening of small scale industry. Focus of attention will be on low income households and the manner in which they can regain their productive capacity.

Environment. One of the major impacts of the earthquake was to the natural environment. Soil instabilities caused loss of ground cover over extensive areas of central Luzon island. Improved land use and more careful assessment of development should lower the exposure of slopes to this type of degradation.

2. Identify any negative impact which the project may have on the environment or on any particular groups, etc.

The project is expected to minimize the impact of human activity on the environment as a way to lower risk to human settlements when the next earthquake strikes the region.

E. Other donors, programmes active in the same subsector

Identify and describe the linkage of the proposed project, if any, to the activities and programmes of other sources of external assistance in the same sub-sector.

1.- The World Bank

2.- Asian Development Bank.

3.- Bilateral donors.

F. Development objective and its relation to the country programme

This project responds to the emergency situation caused by a major natural disaster. As such it does not fit into a prescribed section of national development plans or the UNDP country programme. However, it does fit within the stated goals and objectives of the "Reconstruction and Development Program" adopted by the Government following the 16 July disaster. The goals and objectives as stated in the aforementioned programme are:

> "The main goal is not only to **restore normalcy** in the damaged areas but also to **minimize the effects of similar and other calamities** that may occur in the future. Its components are to:
>
> a) normalize and accelerate economic recovery including the creation of an attractive investment climate;
>
> b) provide adequate livelihood and employment opportunities especially for the displaced workers;
>
> c) ensure the continuous flow of goods and services especially during relief operations when calamity strikes;
>
> d) strengthen institutional infrastructures, arrangements and mechanisms for disaster preparedness/-responsiveness and rise public awareness on natural disasters and disaster mitigation/reduction;
>
> e) reduce the susceptibility of infrastructure to damages due to natural disasters; and
>
> f) prevent further degradation of the environment and rehabilitate damaged ecosystems."

G. Major elements

Following are the objectives, outputs and activities for a full scale undertaking to incorporate risk reduction concepts into the urban and regional planning and development process. These set of objectives will be aimed at the affected area, but the findings will have application throughout the country.

[**NOTE:** In order to expedite commencement of this project outputs 1.1, 1.2 and 2.1 could be initiated under a preparatory phase, which would also include preparation of the main phase project document. These outputs are essential to the process and should be carried out as soon as possible to support on-going reconstruction activities.]

Immediate objective 1

1. Planning in support of investments for rehabilitation and recovery of the earthquake affected areas.

Output 1.1

1.1 Emergency Interim Building Code for the cities of Baguio and Dagupan.

Activities	General inputs
1.1.1 Review and analysis of earthquake damage effects and structural behaviour of representative structural types of buildings, with consideration of specific site conditions (soil amplification and instabilities).	(International) Subcontract with internationally recognized institute in the field of earthquake engineering & engineering seismology, and with participation of two national consultants and relevant national institutions. Work of national consultants will be at the selected institute. Tech. inputs to include: 2W/M-Earthquake Eng./specialist repair and strengthening builds. 2W/M-Earthquake Eng./specialist in soil and foundation dynamics. (National) 1W/M-Structural eng. 1W/M-Geotechnical eng. Travel to selected int. institute. Approximate Costs: USD 74,000
1.1.2 Preliminary review of existing design codes and regulations for seismic design of buildings.	
1.1.3 Development of repair and strengthening techniques and preparation of guidelines for their implementation.	
1.1.4 Preparation of interim building code and regulation ordinances.	

testing technique.]

Output 1.3

1.3 Regional analysis to determine on-going economic and demographic development patterns and vulnerability of the system to failures in the component networks.

Activities	General inputs
1.3.1 Review of available data on economic and demographic trends, establishment of computer based information management system for planning and risk mitigation.	Consultants (Inter.) 3W/M-Regional Economic Development. 2W/M-Development Infrastructure 2W/M-Agricultural Development Econ. Consultants (National) 4W/M Regional planner. 3W/M-Infrastructure Engineering Econ. 4W/M-Statistical/ Information 6W/M-Computer applications. Approximate Costs: USD 173,000
1.3.2 Analysis of available economic and demographic data.	
1.3.3 Identification of trends, patterns and regional linkages.	
1.3.4 Identification of systems failure (nodal collapses) and their impact on the region.	

Output 1.4

1.4 Review and modification of urban development (strategic) plans for Dagupan and Baguio on the basis of their vulnerability in case of disasters and opportunities for development.

Activities	General inputs
1.4.1 Review of linkage between urban area and hinterland.	(International) 2W/M-Regional Economic Development 4W/M-Urban Management Consultant 2W/M-Urban Engineer 2W/M-Building Engineer (National) 6W/M-Urban Planner 6W/M-Urban Systems Engineer 6W/M-Structural Engineer Approximate Costs: USD 178.000
1.4.2 Review of building stock, land use, economic development and demographic trends; public utility demands, projections, and economic structure of urban area.	
1.4.3 Review options for building stock management and infrastructure development in the context of disaster mitigation.	

Output 1.6

1.5 Strategic coordination of regional programmes for reconstruction and development.

a. Prioritisation of government-proposed projects for phase 3
b. Identification of new areas of critical investment

Activities	General inputs
1.5.1 Analysis of inter-regional linkages to determine development needs and complementarities.	(International) 2W/M-Regional Economic Development 2W/M-Infrastructure Economist 2W/M-Urban Management (National) 4W/M-Project Coordination and Management 4W/M-Information systems specialist Approximate Costs: USD 122.000
1.5.2 Analysis of inter-regional dependencies.	
1.5.3 Clustering of investment projects that work together to enhance overall system effectiveness.	

Immediate objective 2

2. Strategic planning for the mitigation of natural disasters, multi-hazard approach (earthquakes, typhoon, flooding and land instabilities).

Output 2.1

2.1 Hazard, Vulnerability and Risk Assessment.

Activities	General inputs
2.1.1 Evaluation of earthquake, tsunami, typhoon and flood hazard of northern Luzon (area affected by the 16 July earthquake), including spatial and frequency distribution of future activity. Macro-scale mapping of areas with high earthquake amplification potential, tsunami, liquefaction potential, flooding, landslide and rockfall capability.	(International) Hazard Analysis: 1W/M-Earthquake 1W/M-Tsunami 1W/m-Flood 1W/M-Soil dynamics and land instabilities 1W/M-Typhoons Vulnerability Analysis per groups of elements at risk: 1W/M Buildings
2.1.2 Development of data base on natural disasters and elaboration of zoning Transportation maps of major hazards implementing probabilistic approach where possible (for CAR, Regions I, II, III).	1W/M 1W/M Lifelines 1W/M Communication 1W/M Economics, exposed to each of considered

Output 1.2

1.2 Hazard identification: Strong motion seismic instrumentation of the affected region and key urban centres for hazard mapping and planning.

Activities	General inputs
1.2.1 Preliminary analysis of seismic hazard of the region and level of earthquake ground motions during the Luzon Earthquake of 16 July 1990.	(International) 1W/M-Seismic Hazard Analysis 1W/M-Earthquake Eng. specialist in strong motion data analysis and dynamic response of soils and buildings for development of data base and mapping of recorded data, assist in installation of instruments and measurements of full scale dynamic characteristics of buildings. (National) 1W/M-Specialist seismic hazard identification and mapping. 1W/M-Specialist strong motion data base and field measurements. Approximate Costs: USD 44,000 Cost of equipment described below: USD 288,000.
1.2.2 Planning of strong motion instrument network for the affected region and key centers.	
1.2.3 Procurement of strong motion instruments, preparation of sites and urgent installation of instruments to record new shocks.	
1.2.4 Development of database from records obtained from the instrumented sites. Mapping of recorded ground motions and full-scale ambient vibration test of selected representative buildings in the earthquake affected region.	

(EQUIPMENT: Fifty strong motion instruments model SSA-2, 18 for BLIST area, 10 Baguio City, 2 La Trinidad, 2 Itogon, 2 Sablan, and 2 Tuba (one strong motion instrument of the bed rock and one on representative soil conditions); 14 for Dagupan City and surrounding municipalities; 15 for most affected cities and towns in regions II and III and along the Digdig Fault; 3 Metro Manila.

Supply of required spare parts, hardware and software for data collection and analysis as well as vibration survey system for field measurements of dynamic characteristics of the selected sites for instrumentation, and full scale ambient vibration test for determination of dynamic characteristics of the selected buildings.

GOVERNMENT CONTRIBUTION (PHIVOLCS, Manila): Preparation of sites for installation of strong motion instruments in appropriate low rise buildings, installation and calibration of the instruments with continuous maintenance.

Measurement of microtremors at the sites of the installed instruments and dynamic characteristics of the representative 40 to 60 buildings implementing ambient vibrations full-scale

2.1.3 Synthesis of the data on earthquake and other hazard damaged buildings, structures, transportation and communication networks, lifelines, etc. and establishment of data base of empirical vulnerability - hazard relations (vulnerability functions) for each of the elements at risk and related hazard. Consideration of regional hazard effects for the last 50 years in the Philippine Archipelago.

2.1.4 Development of analytical vulnerability functions based on extrapolation of the data available from the South Pacific region and other regions in the world for equivalent hazard levels.

2.1.5 Analysis of damage potential of the expected levels of hazards for each of the elements at risk, identification of primary effects and correlation of hazards for the considered area and specific subregions.

2.1.6 Risk analysis (loss assessment) of the existing elements at risk for the selected major hazards (earthquake, tsunamis, typhoons, floods, landslides, rockfall, liquefaction), mapping and presentation of the effects on vital elements at risk (public buildings, schools, hospitals, transportation and communication networks and lifelines), separately per hazard per element at risk and cumulative for all elements at risk per hazard and total of all hazards, for appropriate return periods and criteria.

2.1.7 Identification of critical issues of the considered area and subregions with emphasis on urgent measures and activities for disaster preparedness and long term mitigation of the expected levels of risk in correlation with the economic capacity of the country.

hazards.
Analysis of damage potential, risk analysis and identification of critical issues and measures per groups of elements at risk:
1W/M Buildings
1W/M Transportation
1W/M Lifelines
1W/M Communication
1W/M Economics, exposed to each of considered hazards and cumulatively in expected probabilities
(National)
5W/M Hazard
5W/M Vulnerability
5W/M Risk Analysis
Approximate Costs: USD 285,000

[ORGANIZATION OF TEAM WORK. It is foreseen that the team work will be assured at the same time within the activity 2.1.1. and 2.1.2. (Hazard team), 2.1.3. and 2.1.4. (Vulnerability Analysis team), and 2.1.5., 2.1.6. and 2.1.7. (Risk Analysis and Integration team).
GOVERNMENT CONTRIBUTION: To make available 10 junior Ms.C. or Ph.D. specialists in five major hazards and five principle categories of elements at risk for **on-the-job training** within the

project performance and assistance to UNCHS teams and national consultants.]

Output 2.2

2.2 Planning Issues: Identification of locational and procedural methods of reducing risk: Development of planning strategies and guidelines.

Activities	General inputs
2.2.1 Review of planning institutions, process and implementation mechanisms. 2.2.2 Identification of risks to which the planning units may be subject. 2.2.3 Development of overall risk reduction strategies. 2.2.4 Development of planning guidelines to assist planners in identifying appropriate development options to reduce risk.	(International) 8W/M-Urban Planner, Specialist Risk Reduction. 6W/M-Architect/ Planner, Specialist Vulnerability Reduction. (National) 16W/M-Architect/ Planner 8W/M-Computer Programmer (Equipment) Two computers Approximate Costs: USD 320,000

Output 2.3

2.3 Housing and small building improvement: Assessment of construction technologies and practice in non-engineered building production to identify potential for improvement (reduction of vulnerability).

Activities	General inputs
2.3.1 Review construction technologies, location practices and characteristic housing vulnerability. 2.3.2 Analysis of construction cost, material availability and building skills. Housing use and occupancy. 2.3.3 Assessment of information and training needs of small contractors and other builders. 2.3.4 Preparation of information and training materials for builders of non-engineered buildings.	(International) 2W/M Specialist vulnerability and risk analysis of non-engineered dwellings 2W/M Architect, specialist construction of dwellings and training (National) 2W/M Specialist vulnerability and risk analysis of non-engineered dwellings 2W/M Architect,

specialist construction of dwellings and training
Approximate Costs; USD 76,000

Output 2.4

2.4 Engineering strengthening: Building and engineered structures, transportation networks, lifelines.

Activities	General inputs
2.4.1 Synthesis of earthquake damage characteristics on representative types of residential and public buildings, schools and hospitals; engineered structures (bridges, elevated water tanks, dams, etc.), highways, roads and railways; lifelines (water, sewage, and electricity), and communication facilities.	(International) Synthesis of earthquake damage: 1W/M Building and Engineering structures 1W/M Transportation systems 1W/M Lifelines Structural Response analysis and manuals 2W/M Earthquake Eng. Buildings 2W/M Civil Eng. Structures Quality of Construction 2W/M Structural Eng. Dynamic Characteristics by full scale ambient vibration test of 5 high rise buildings, 5 bridges, 5 elevated water tanks,5 schools, and 5 hospitals (use equip. from 1.2) 3W/M Earthquake eng. (National) 3W/M Structural Eng. to assist in team activities. Approximate Cost: USD 162,000
2.4.2 Analysis of structural response of the selected representative types of buildings and structures to the estimated levels and time histories of earthquake ground motions of the 16 of July earthquake and evaluation of structural behaviour.	
2.4.3 Evaluation of quality of construction, organization of quality and construction control and preparation of proposals for improvement.	
2.4.4 Preparation of guidelines and manuals for planning, design and maintenance of transportation networks to minimize future losses.	
2.4.5 Determination of dynamic characteristics by full scale ambient vibration test and strong motion instrumentation of selected buildings and structures of vital importance.	

[It is foreseen that team work will be assured within activities 2.4.1, 2.4.2, 2.4.3 and 2.4.4.
GOVERNMENT CONTRIBUTION: DPWH and PHIVOLCS will participate actively in the performance of field ambient vibration test, selection of appropriate buildings and structures, non-disturb performance of test, collection of the designs, quality of the materials, soil conditions of the sites and provide appropriate computer facilities for analysis.]

Output 2.5

2.5 Legal and implementation framework for mitigation of future natural disasters.

Activities	General inputs
2.5.1 Review of the existing building and development control framework, responsibilities and authority of various legal entities involved.	(International) 2W/M Planning legislation and development controls 2W/M Building Regulations (National)
2.5.2 Identification of weaknesses, overlaps, conflicting authorities and gaps.	4W/M Legal expert 4W/M Expert in Local Government Authority and Administration.
2.5.3 Prepare recommendations for the improvement of control mechanisms for building quality and urban development.	Approximate Costs: USD 92.000

Immediate objective 3

3. Integration of disaster mitigation strategies into the reconstruction and development process.

Output 3.1

3.1 Integration of risk reduction concepts into the regional development planning and management process.

Activities	General inputs
3.1.1 Pilot application of risk reduction concepts in the revision of a regional plan. Transportation networks and other regional infrastructure, settlement location, dams, etc.	(International) 2W/M-Regional Economic Development 2W/M-Urban Management 4W/M-Training specialist Consultant
3.1.2 Preparation of guidelines for the reduction of risk at the regional scale.	2W/M-Risk Reduction 2W/M-Vulnerability Reduct. (National) 6W/M-Regional Planner
3.1.3 Dissemination of concepts through seminars and publication of manuals.	6W/M-Urban Systems Engineer Approximate Costs: USD 228,000

Output 3.2

3.2 Integration of risk mitigation concepts into the urban development planning and management process.

Activities	General inputs
3.2.1 Pilot application of risk reduction concepts in the revision of Master Plans for Baguio and Dagupan. 3.2.2 Preparation of guidelines for the reduction of risk in urban areas. 3.2.3 Dissemination of concepts through seminars and publication of manuals.	(International) 3W/M-Urban Planner, Specialist Risk Reduction 1W/M-Urban Management 3W/M-Architect/Planner, Vulnerability Reduction 3W/M-Training specialist Consultant 1W/M-Urban Engineer 1W/M-Building Engineer (National) 6W/M-Regional Planner 6W/M-Urban Systems Engineer Approximate Costs: USD 228,000

H. Project strategy

1. Who are the people and/or institutions who would benefit in the first instance from the proposed outputs, activities, and activities of the project (i.e., the direct recipients)?

2. The target beneficiaries and the direct recipients of the project are not likely to be the same. Describe how the benefit proposed to be delivered to the direct recipients will lead to the benefit intended for the target beneficiaries (i.e., the project strategy).

3. Describe the implementation arrangements proposed for the project.

4. Identify any alternative project strategies and/or implementation arrangements which have been considered, and why they have been rejected in favour of the one(s) chosen.

I. Host country commitment

1. Describe the indications which show that the Government or other host country institution concerned will provide the counterpart support necessary for the project's successful operation and to sustain its results. Depending on the nature of the project, this may include such matters as the provision of full-time professional and lower-level project staff, premises, office and other types of equipment including vehicles, consumable supplies, etc.

2. Describe any legal arrangements necessary to assure that staff trained by the project will remain in their posts for a fixed period after their training.

J. Risks

List below all those significant risks which could seriously delay or prevent the achievement by the project of its outputs and objectives.

Description of risk	Estimated likelihood (i.e., high, medium, low.)

1. Factors which may at the outset cause major delays or prevent achievement of the project's outputs and objectives.

2. Factors which could over time cause major delays or prevent achievement of the project's outputs and objectives.

K. Inputs

1. Skeleton budget: Provide a summary estimate of total costs by major budget category.

TOTAL PROJECT

	National inputs	**External Inputs** (in US Dollars)
Personnel	_____	1,908,000
Sub-contracts	_____	74,000
Training	_____	50,000
Equipment	_____	310,000
Miscellaneous	_____	50,000
TOTAL	_____	2,392,000

PREPARATORY ASSISTANCE
(Outputs 1.1, 1.2 and 2.1 only)

	National inputs	**External Inputs** (in US Dollars)
Personnel	_____	329,000
Sub-contracts	_____	74,000
Equipment	_____	290,000
Miscellaneous	_____	5,000
TOTAL	_____	698,000

2. Comment on any proposed inputs which may raise policy issues on which headquarters guidance is sought (e.g., high equipment component, payment of local and recurrent costs, incentive payments).

Person(s) primarily responsible for this formulation framework:

Ignacio Armillas
Team Leader - PHI/90/F01

Expert Mission to Assist in Recovery and Redevelopment After the Philippines Earthquake of 16 July 1990