

**Chapter**



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# Human Settlements

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## **INTRODUCTION**

Human settlements are man's territorial habitat, the place where he lives, works and seeks recreation, and where he raises his family. The settlements are made up of physical elements, such as shelter and infrastructure, and services which are required by a community, such as education, health and recreation. The quality of life in the settlements is largely determined by the availability of the facilities and services and their accessibility to the population.

In human settlements, there is interdependence between the natural and man-made elements. The natural environment provides the place for human activities which in turn contribute to the changes in the environment by introducing man-made phenomena. Since the environmental impact of human activities is usually concentrated in settlements, those intrusions alter the quality of the natural environment, often resulting in hazardous effects on the well-being of the man. Not all environmental interventions, however, produce negative consequences but the environmental impact in the settlements is a serious problem which should be given utmost importance by the different nations of the world.

The most important and basic man-made elements of settlements are housing, industry, business and commercial centers, social services and recreation. These elements are supplemented by an infrastructure which includes utilities, community facilities, transport and communication networks. The mere existence of man-made elements creates conflicts with components of the natural environment, but the situation becomes worse when intensive economic activities accompany settlement. Only after an industrial plant begins production are the problems of air pollution, congestion and waste disposal created. These problems are aggravated once residential areas are developed near industries. In this case, human activities have not only spoiled the natural environment, but have worsened the quality of other aspects of the settlements.

While the improvement of the quality of life in human settlements has been considered "the first and most important objective of every human settlements policy", the significant interactions between development and environment can no longer be ignored. It is now a necessity for a country to be concerned with accelerating economic growth and looking after the environment at the same time in order to set the conditions for productive and sustainable human settlements.

A wide range of problems affecting the environment of human settlements have been identified, as follows: a) rapid population growth, migration and urbanization, b) inadequate shelter and basic amenities, c) overcrowding and urban decay, d) environmental degradation, especially through waste discharge and other forms of pollution, e) lack of services and related infrastructure in rural and urban settlements, especially water supply and sanitation, f) impairment of the cultural heritage, and

g) health effects and deteriorating living conditions. All these concerns affect the social, economic and environmental aspects of human settlements.

## **1. FRAMEWORK**

### **1.1 Conceptual Framework**

Given the multitude of factors affecting human settlements, the conceptual framework for the development of environment statistics was developed as presented in Table A. Basically, the framework translates general environmental concerns into more operational statistical topics. It highlights the environmental aspects of human settlements without losing track of their relationships with other socio-economic and cultural issues. Still, the focus of the framework is on environmental impacts, and economic, social and demographic activities are considered only to the extent that they produce such impacts. Those factors which do not directly influence but which are related to environmental aspects of human settlements are also part of the framework.

The environmental concerns relating to human settlements are grouped into four information categories, namely a) social and economic activities and natural events, b) environmental impacts of activities and events, c) responses to environmental impacts, and d) stocks, inventories and background conditions. Included under social and economic activities and natural events are activities that may have a direct impact on the environment of human settlements. Human activities consist mostly of the production and consumption of goods and services, but could also include activities in pursuit of non-economic goals. They produce environmental impacts through the direct use or misuse of natural resources or through the generation of waste and emissions in production and consumption processes. These activities include population growth and change, construction of shelter and infrastructure, energy and water utilities, transport, land use in human settlements, emission and waste discharge, hazardous activities at workplace and natural events and man-made disasters. The natural events, such as earthquakes, landslides, hurricanes or floods, are brought about by natural forces and are largely independent from human behavior. However, human activities frequently contribute to natural disasters through activities, such as deforestation or construction of buildings in hazardous areas.

The second information category refers to environmental impacts resulting from the socio-economic and natural events. Environmental impacts which may include the depletion or discovery of natural resources, changes in ambient concentrations of pollutants and deteriorating or improving living conditions in human settlements, can thus be harmful or beneficial. The items included under environmental impact are housing, access to infrastructure and services, pollutants and wastes, exposure and health effects and settlements-related damage and accidents.

**Table A: Conceptual Framework on HUMAN SETTLEMENTS**

<b>Social and economic activities and natural events</b>	<b>Environmental impacts of activities and events</b>	<b>Responses to environmental impacts</b>	<b>Stocks, inventories and background conditions</b>
<ol style="list-style-type: none"> <li>1. Population growth and change</li> <li>2. Construction of shelter and infrastructure</li> <li>3. Energy and water utilities</li> <li>4. Transport</li> <li>5. Land use in human settlements</li> <li>6. Emission and waste discharge</li> <li>7. Hazardous activities at workplace</li> <li>8. Natural events and man-made disasters</li> </ol>	<ol style="list-style-type: none"> <li>1. Housing</li> <li>2. Access to infrastructure and services</li> <li>3. Pollutants and wastes</li> <li>4. Exposure and health effects</li> <li>5. Settlements-related damage and accidents</li> </ol>	<ol style="list-style-type: none"> <li>1. Human settlements policies and programs</li> <li>2. Environmental standards</li> <li>3. Pollution monitoring and control</li> <li>4. Treatment disposal and reuse of discharges</li> <li>5. Disaster management</li> </ol>	<ol style="list-style-type: none"> <li>1. Stocks of shelter and infrastructure               <ul style="list-style-type: none"> <li>- Housing</li> <li>- Non-residential buildings and other physical infrastructures</li> </ul> </li> <li>2. Environmental inventory</li> <li>3. Human settlements vulnerable to natural disasters</li> <li>4. Socio-demographic factors affecting human settlements</li> </ol>

The third information category has been designed to review the responses of individuals, social groups, non-governmental organizations and public authorities to environmental impacts of human activities and natural events upon human settlements. Their responses intend to prevent, control, counter, reverse or avoid negative impacts and to generate, promote or reinforce positive ones. The responses to environmental impacts include human settlements policies and programs, environmental standards, pollution monitoring and control, treatment disposal and reuse of discharges and disaster management.

The fourth information category which refers to stocks, inventories and background conditions is intended to provide “benchmark” data and to illustrate links with other subject areas for possible further statistical analysis of these relationships. The topics include stocks of shelter and infrastructure, environmental inventory, human settlements vulnerable to natural disasters and socio-demographic factors affecting human settlements.

## **1.2 Statistical Framework**

Table B presents the statistical framework which consists of the topic/item, variables and the measurement of each variable for the four information categories.

For social and economic activities and natural events, the variables under population growth and change include average rate of change in population size and net migration rate which are both in percent. Under construction of shelter and infrastructure, the variables are housing units/residential buildings, institutional buildings, and non-residential buildings which have been constructed/restored. For energy and water utilities, the variables are energy supply and consumption which is in thousand barrels of oil equivalent, electricity supply and consumption in gigawatthours and water supply and consumption in cu. m. For transport, the variables are number of registered motor vehicles, vessel arrivals and departures and flights. Also included are passenger transport, volume of traffic and freight transport. The other variables are settlement land area, air pollution emissions and solid waste collected, occurrence of hazardous activities and occurrence of natural events and disasters.

For environmental impacts of activities and events, the variables under housing are household/institutional population and homeless persons/families. The variables identified for access to infrastructure and services include households with access to safe drinking water, households with access to satisfactory garbage disposal, households supplied with electricity, average distance from home to nearest public transportation system, average time spent travelling from home to workplace and households with access to sanitation system. The other variables include ambient concentration of pollutants and wastes, number of persons affected with diseases associated with housing and working conditions. Under settlements-related damage and accidents, the variables

**Table B: Statistical Framework on HUMAN SETTLEMENTS**

**INFORMATION CATEGORY: Social and Economic Activities and Natural Events**

TOPIC/ITEM	VARIABLE	MEASUREMENT
Population growth and change	Average rate of change in population size	Percent
	Net migration rate	Percent
Construction of shelter and infrastructure	Housing units/residential buildings constructed/restored	Number
	Institutional buildings constructed/restored	Number
	Non-residential buildings constructed/restored	Number
Energy and water utilities	Energy supply and consumption	Thousand barrels of fuel oil equivalent
	Electricity supply and consumption	Gigawatthours
	Water supply and consumption	cu. m
Transport	Registered motor vehicles	Number
	Vessel arrivals and departures	Number, tonnage
	Air traffic	Number of flights
	Passenger transport	Number of passengers, passenger kilometers
	Volume of traffic	Average daily traffic count

**Table B: Statistical Framework on HUMAN SETTLEMENTS**

**INFORMATION CATEGORY: Social and Economic Activities and Natural Events**

<b>TOPIC/ITEM</b>	<b>VARIABLE</b>	<b>MEASUREMENT</b>
	Freight transport	Tons of freight, ton kilometers
Land use in human settlements	Settlement land area	Sq. km
Emission and waste discharge	Air pollution emissions	tons
	Solid waste collected	Cu. m or tons
Hazardous activities at workplace	Occurrence of hazardous activities	Number
Natural events and man-made disasters	Occurrence of natural events and disasters	Frequency, magnitude

**Table B: Statistical Framework on HUMAN SETTLEMENTS**

**INFORMATION CATEGORY: Environmental Impacts of Activities and Events**

TOPIC/ITEM	VARIABLES	MEASUREMENT
Housing	Household/institutional population	Number
	Homeless persons/families	Number
Access to infrastructure and services	Households with access to safe drinking water	Number
	Households with access to satisfactory garbage disposal	Number
	Households supplied with electricity	Number
	Average distance from home to nearest public transportation system	Meter
	Average time spent travelling from home to work place	Minutes
	Households with access to sanitation system	Number
Pollutants and wastes	Ambient concentration of pollutants and wastes	Micrograms per cubic meter
Exposure and health effects	Diseases associated with housing conditions	Number of affected persons
	Diseases associated with working conditions	Number of affected persons

**Table B: Statistical Framework on HUMAN SETTLEMENTS**

**INFORMATION CATEGORY: Environmental Impacts of Activities and Events**

<b>TOPIC/ITEM</b>	<b>VARIABLES</b>	<b>MEASUREMENT</b>
Settlements-related damage and accidents	Loss of lives and injuries from natural disasters	Number of dead, injured and missing persons
	Affected families from natural disasters	Number
	Value of damage of natural disasters to property	Peso
	Road traffic accidents	Number
	Industrial accidents	Number

**Table B: Statistical Framework on HUMAN SETTLEMENTS (continued)...**

**INFORMATION CATEGORY: Responses to Environmental Impacts**

TOPIC/ITEM	VARIABLES	MEASUREMENT
Human settlements policies and programs	Expenditures for human settlements development	Peso
	Community development programs	Number
	Violations of building codes and regulations prosecuted	Number
	Settlements area under land use regulations	Square kilometers
	Historic sites preserved	Number
	Resettlement areas for displaced families/communities	Number
Environmental standards	Air pollution emission standards	Number of parts per measured unit
	Air pollution concentration standards	Microgrammes per cubic meter
	Water pollution standards	
	Solid waste treatment and removal standards	
Pollution monitoring and control	Monitoring stations	Number
	Violations prosecuted and regulatory actions	Number
	Expenditures for pollution control	Peso

**Table B: Statistical Framework on HUMAN SETTLEMENTS (continued)...**

**INFORMATION CATEGORY: Responses to Environmental Impacts**

TOPIC/ITEM	VARIABLES	MEASUREMENT
Treatment disposal and reuse of discharges	Waste water treatment	
	Reuse and recycling of solid waste	Tons
	Treatment and disposal of solid waste	Tons
Disaster management	Disaster preparedness and mitigation programs	Number and type of programs
	Expenditures on management of natural disasters	Peso
	Investments for mitigating natural disasters	Peso

**Table B: Statistical Framework on HUMAN SETTLEMENTS (continued)...**

**INFORMATION CATEGORY: Stocks, Inventories and Background Conditions**

TOPIC/ITEM	VARIABLES	MEASUREMENT
Stocks of shelter and infrastructure		
- Housing	Residential buildings	Number
	Housing units with toilet	Number
	Housing units with water supply system	Number
- Non-residential buildings and other physical infrastructures	Non-residential buildings	Number
	Civil engineering structures	Number
Environmental inventory	Air pollutants	
	Solid wastes	
Human settlements vulnerable to natural disasters	Areas prone to disasters	Number
Socio-demographic factors affecting human settlements	Population	Number
	Population density	Number per sq. km.
	Fertility rate	Percent
	Infant mortality rate	Percent
	Unemployment rate	Percent

are loss of lives and injuries from natural disasters, number of affected families from natural disasters, value of damage to property, and number of road traffic and industrial accidents.

For responses to environmental impacts, several variables have been identified. Under human settlements policies and programs, the variables include expenditures for human settlements development, community development programs, violations of building codes and regulations prosecuted, settlements area under land use regulations, historic sites preserved and resettlement areas for displaced families/communities. Under environmental standards, the variables are air pollution emission and concentration standards, water pollution standards, and solid waste treatment and removal standards. For the topic pollution monitoring and control, the variables are number of monitoring stations, number of violations prosecuted and regulatory actions and expenditures for pollution control. Under treatment disposal and reuse of discharges, the variables are waste water treatment, reuse and recycling of solid waste and treatment and disposal of solid waste. Under disaster management, the variables include disaster preparedness and mitigation programs, expenditures on management of natural disasters, and investments for mitigating natural disasters

For stocks, inventories and background conditions, the variables under stocks of shelter and infrastructure are residential buildings, housing units with toilet and housing units with water supply system, non-residential buildings and civil engineering structures. Under environmental inventory, the variables are air pollutants and solid wastes. The other variables include areas prone to disasters and socio-economic variables, such as population, population density, fertility rate, infant mortality rate and unemployment rate.

## **1.3 Data Assessment**

### **1.3.1 Social and Economic Activities and Natural Events**

For the data on population and housing, the source is the National Statistics Office. While the data on energy are generated by the Department of Energy, the Metropolitan Waterworks and Sewerage System and the Local Water Utilities Administration provide the data on water supply and consumption. For the transport data, the sources are the Land Transportation Office, Philippine Ports Authority, Maritime Industry Authority, Air Transportation Office, Philippine National Railways, Light Rail Transit Authority and Department of Public Works and Highways. For solid waste data, the source is the Department of Environment and Natural Resources while for hazardous activities, the source is the Department of Labor and Employment. For natural events and man-made disasters, the data sources are the Office of Civil Defense and the Philippine Institute of Volcanology.

Most of the data in this information category are based on administrative records.

### **1.3.2 Environmental Impacts of Activities and Events**

The sources of data for this information category include the Department of Social Welfare Development for the homeless persons/families, loss of lives and injuries and affected families from natural disasters and value of damage to property. For the data on access to infrastructure and services, the sources include the Department of Health, Local Government Units, Metropolitan Waterworks and Sewerage System, Local Water Utilities Administration, National Electrification Administration, National Statistics Office, and the Department of Transportation and Communications. Other sources of data include the Department of Labor and Employment, Office of Civil Defense, Philippine National Red Cross and Bureau of Working Conditions.

Those data which are not available include number of households with access to satisfactory garbage disposal and sanitation system and number of road traffic accidents. Some of the data are based on special studies, such as the average distance from home to nearest public transportation system and average time spent travelling from home to workplace.

### **1.3.3 Responses to Environmental Impacts**

Majority of the variables in this information category pertain to policies and programs which entail budgetary outlay. The sources for the required data include the Department of Budget and Management, Local Government Units, Housing Urban Development and Coordinating Council, Housing and Land Use Regulatory Board, Environmental Management Bureau, Department of Environment and Natural Resources, Office of Civil Defense, Department of Social Welfare and Development, National Housing Authority and Department of Tourism.

### **1.3.4 Stocks, Inventories and Background Conditions**

Majority of the data in this information category are available from the National Statistics Office. Other sources of data are the Department of Public Works and Highways, Environmental Management Bureau, Department of Environment and Natural Resources and Office of Civil Defense.

**Table C: Data Assessment for the HUMAN SETTLEMENTS component**

**INFORMATION CATEGORY: Social and Economic Activities and Natural Events**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
Population growth and change	Average rate of change in population size	Percent	National, by region by province and major city	Every five years	Census	NSO
	Net migration rate	Percent	By region		Derived statistics	NSO
Construction of shelter and infrastructure	Housing units/ residential buildings constructed/ restored	Number	By type of building, by region	Annual	Administrative records	NSO
	Institutional buildings constructed/ restored	Number	By type of building, by region	Annual	Administrative records	NSO
	Non-residential buildings constructed/ restored	Number	By region	Annual	Administrative records	
Energy and water utilities	Energy supply and consumption	Thousand barrels of fuel oil equivalent	By type of energy by type of user	Monthly	Administrative records	DOE

**Table C: Data Assessment for the HUMAN SETTLEMENTS component**

**INFORMATION CATEGORY: Social and Economic Activities and Natural Events**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
Transport	Electricity supply and consumption	Gigawatthours	By type of user	Monthly	Administrative records	DOE
	Water supply and consumption	cu. m	By source, by type of user	Monthly	Administrative records	MWSS, LWUA
	Registered motor vehicles	Number	By type of vehicle, by region	Monthly	Administrative records	LTO
	Vessel arrivals and departures	Number, tonnage	By major port/city	Monthly	Administrative records	PPA, MARINA, NSO
	Air traffic	Number of flights	By major city	Monthly	Administrative records	ATO
	Passenger transport	Number of passengers, passenger kilometers	By mode of transport, by major city	Monthly	Administrative records	PNR, LRTA, MARINA, ATO, PPA
	Volume of traffic	Average daily traffic count	By type of vehicle, by region	Annual	Survey	DPWH
	Freight transport	Tons of freight, ton kilometers	By mode of transport	Monthly	Administrative records	PNR, PPA, MARINA

**Table C: Data Assessment for the HUMAN SETTLEMENTS component**

**INFORMATION CATEGORY: Social and Economic Activities and Natural Events**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
Land use in human settlements	Settlement land area	Sq. km	By type of land use - residential - industrial - commercial - transportation - recreational - marginal settlements		Administrative records	DENR
Emission and waste discharge	Air pollution emissions	tons	By type of pollutant, by type of activity	Annual		EMB
	Solid waste collected	Cu. m or tons	By area, by type of solid waste - household - commercial/ industrial			MMDA
Hazardous activities at workplace	Industries with hazardous working conditions	Number	By type of industry, by region		Special study	DOLE
Natural events and man-made disasters	Occurrence of natural events and disasters	Frequency, magnitude	By type, by region	Annual	Administrative records	OCD, PHIVOLCS

**Table C: Data Assessment for the HUMAN SETTLEMENTS component (continued)...**

**INFORMATION CATEGORY: Environmental Impacts of Activities and Events**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
Housing	Household/institutional population	Number	By region		Census	NSO
	Homeless persons/families	Number	National, by region			DSWD
Access to infrastructure and services	Households with access to safe drinking water	Number	By region and province, urban and rural		Survey	DOH, LGUs MWSS, LWUA
	Households with access to satisfactory garbage disposal	Number				
	Households supplied with electricity	Number	National, by region and province	Annual	Administrative records/Census	NEA, NSO
	Average distance from home to nearest tation system	Meter	By area	One-shot	Special study	DOTC
	Average time spent travelling from home to work place	Minutes	By area	One-shot	Special study	DOTC

**Table C: Data Assessment for the HUMAN SETTLEMENTS component (continued)...**

**INFORMATION CATEGORY: Environmental Impacts of Activities and Events**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
Pollutants and wastes	Households with access to sanitation system	Number	By type			
	Ambient concentration of pollutants and wastes	Micrograms per cubic meter	By type of pollutant			EMB
Exposure and health effects	Diseases associated with housing conditions	Number of affected persons	By region, by type of disease			DOH
	Diseases associated with working conditions	Number of affected persons	By region			DOLE
Settlements- related damage and accidents	Loss of lives and injuries from natural disasters	Number of dead, injured and missing persons	By region and province, by type of disaster	Annual	Administrative records	OCD, LGUs PNRC, DSWD
	Affected families from natural disasters	Number	National, by type of disaster	Annual	Administrative records	OCD, LGUs PNRC, DSWD
	Value of damage of natural disasters to property	Peso	National, by region and province, by type	Annual	Administrative records	OCD, LGUs PNRC, DSWD

Table C: Data Assessment for the HUMAN SETTLEMENTS component (*continued*)...

INFORMATION CATEGORY: Environmental Impacts of Activities and Events

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
	Road traffic accidents	Number	By type of accident, by region	Annual		BWC
	Industrial accidents	Number	By type of accident, by type of industry, by region	Annual		

**Table C: Data Assessment for the HUMAN SETTLEMENTS component (continued)...**

**INFORMATION CATEGORY: Responses to Environmental Impacts**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
Human settlements policies and programs	Expenditures for human settlements development	Peso	National	Annual	Administrative records	DBM
	Community development programs	Number	By area	Annual	Administrative records	LGUs, HUDCC
	Violations of building codes and regulations prosecuted	Number	By area	Annual	Administrative records	HLURB
	Settlements area under land use regulations	Number	National		Administrative records	NHA, LGUs
	Historic sites preserved	Number	By area		Administrative records	DOT
	Resettlement areas for displaced families/ communities	Number			Administrative records	NHA, LGUs
Environmental standards	Air pollution emission standards	Number of parts per measured unit				EMB
	Air pollution concentration standards	Microgrammes per cubic meter				EMB

**Table C: Data Assessment for the HUMAN SETTLEMENTS component (continued)...**

**INFORMATION CATEGORY: Responses to Environmental Impacts**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
Pollution monitoring and control	Monitoring stations	Number				EMB
	Violations prosecuted and regulatory actions	Number				
	Expenditures for pollution control	Peso		Annual	Administrative records	DENR
Treatment disposal and reuse of discharges	Waste water treatment					
	Reuse and recycling of solid waste	Tons				
	Treatment and dipsosal of solid waste					
Disaster management	Disaster preparedness and mitigation programs	Number and type of programs	National, by region		Administrative records	OCD
	Expenditures on management of natural disasters	Peso	By area	Annual	Administrative records	OCD, DSWD
	Investments for mitigating natural disasters	Peso	By area	Annual	Administrative records	OCD, DSWD

**Table C: Data Assessment for the HUMAN SETTLEMENTS component (continued)...**

**INFORMATION CATEGORY: Stocks, Inventories and Background Conditions**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT					
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source	
Stocks of shelter and infrastructure	- Housing	Residential buildings	Number	National, by region	Every ten years	Census	NSO
		Housing units with toilet	Number	National, by region	Every ten years	Census	NSO
		Housing units with water supply system	Number	National, by region, by type of water supply system	Every ten years	Census	NSO
	- Non-residential buildings and other physical infrastructures	Non-residential buildings	Number	National, by region	Every ten years	Census	NSO
		Civil engineering structures	Number	National, by region, by type of physical infrastructure	Annual	Administrative records	DPWH
Environmental inventory	Air pollutants						EMB
	Solid wastes						EMB

**Table C: Data Assessment for the HUMAN SETTLEMENTS component (continued)...**

**INFORMATION CATEGORY: Stocks, Inventories and Background Conditions**

TOPIC/ITEM	VARIABLE Per Statistical Framework	ASSESSMENT				
		Actual Variable Measurement	Disaggregation	Periodicity	Manner of Collection	Source
Human settlements vulnerable to natural disasters	Areas prone to disasters				Administrative records	OCD
Socio-demographic factors affecting human settlements	Population	Number	National, by region, by age group	Every five years	Census	NSO
	Population density	Number per sq. km.	National, by region	Every five years	Census	NSO
	Fertility rate	Percent	National	Annual	Survey	NSO
	Infant mortality rate	Percent	National, by region	Annual	Derived statistics	NSO
	Unemployment rate	Percent	National, by region	Annual	Survey	NSO

## 2. SITUATIONAL ANALYSIS

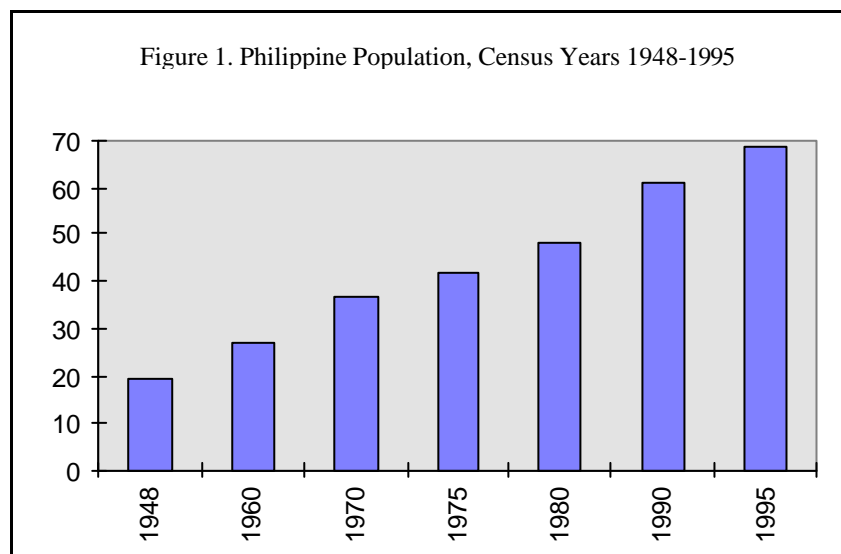
### 2.1 Highlights of Results

The Philippines is in a situation of rapidly increasing population which poses serious constraints on the environment as well as the capability of the government to provide basic services. The pattern of human settlements in the country has been characterized by growing urbanization. The continuous influx of migrants into premier cities and urban centers results in overcrowding and increased demand for housing, infrastructure and services. Consequently, greater environmental problems, such as pollution, poor sanitation, inadequate garbage collection and disposal, inadequate sewerage system, traffic congestion, and proliferation of slum and squatter settlements, become very evident. Metro Manila, for instance, has to face all the environmental challenges it is confronted with at present.

Being prone to natural disasters, the Philippines is continuously stricken by major calamities, such as typhoons, earthquakes and volcanic eruptions. The occurrences of these disasters bring about severe destruction of the environment as well as damage to life and property.

#### Population

Population change is determined by the processes of fertility, mortality and migration. Figure 1 shows the population levels for census years 1948 to 1995. In 1948, the Philippines had a population of 19.2 million which almost doubled after 12 years at 36.6 million. The population continued to grow rapidly, reaching 60.7 million in 1990 and 68.6 million in 1995.



Overall, the annual average growth rates of the population for the periods 1980-1990 and 1990-1995 were 2.35 percent and 2.32 percent, respectively. Among the regions, Southern Tagalog (Region 4) and Metro Manila (NCR) registered the highest population growth rates at 3.05 percent and 2.98 percent, respectively for 1980-1990 and 3.53 percent and 3.30 percent, respectively for 1990-1995. In terms of population density, Metro Manila is the most densely populated region at 12,480 persons per square kilometer in 1990 and 14,865 persons per square kilometer in 1995. Next to Metro Manila is Central Luzon (Region 3) with a population density of 340 per square kilometer in 1990 and 380 per square kilometer in 1995. Metro Manila, having the smallest land area, is heavily crowded compared to the rest of the regions in the country. The details by region are provided in Table 1.

Table 1. Land Area, Population Density and Growth Rate by Region

Region	Land Area (sq. km)	Population Density (persons per sq. km)		Annual Average Growth Rate	
		1990	1995	1980- 1990	1990- 1995
Philippines	3,000,000.0	202.3	228.7	2.35	2.32
Metro Manila	636.0	12,479.5	14,864.8	2.98	3.30
CAR	18,293.7	62.7	68.6	2.28	1.71
Region 1	12,840.2	276.5	296.2	0.92	1.30
Region 2	26,837.6	87.2	94.5	1.31	1.51
Region 3	18,230.8	340.0	380.3	2.58	2.12
Region 4	46,924.4	176.1	211.9	3.05	3.53
Region 5	17,632.5	221.7	245.3	1.18	1.91
Region 6	20,223.2	266.7	285.7	1.77	1.30
Region 7	14,951.5	307.3	335.4	1.95	1.65
Region 8	21,431.7	142.5	157.1	0.88	1.84
Region 9	15,997.0	153.8	174.7	2.28	2.42
Region 10	14,033.0	156.6	177.0	2.28	2.32
Region 11	27,140.7	147.6	169.6	2.28	2.72
Region 12	14,571.3	139.5	161.9	2.28	2.66
ARMM	11,409.7	161.0	177.1	2.28	1.80
Caraga	18,847.0	93.6	103.1	2.28	1.82

Source: National Statistics Office

Based on the 1990 and 1995 population figures, the ten most populous cities in the country, ranked from highest to lowest, are Quezon, Manila, Caloocan, Davao, Cebu, Zamboanga, Makati, Pasig, Cagayan de Oro and Pasay. As to the density, the ten most densely populated urban centers are Manila, Pasay, Mandaue, Caloocan, Quezon, Cavite, Iloilo, Angeles, Baguio and Dagupan.

The problem on the country's growing population may be manifested in terms of incidence of poor families. In 1991 and 1995, high poverty incidences of 39.9 percent and 35.5 percent, respectively were recorded. Among the regions, Central Mindanao (Region 12) had the highest poverty incidence at 57.0 percent in 1991 while ARMM had the highest poverty incidence at 60.0 percent in 1995. Metro Manila had the lowest poverty rates at 13.2 percent and 8.0 percent in 1991 and 1995, respectively.

A new measure called the human development index indicates how well a country has performed, not only in terms of real income growth but also in terms of social indicators of people's ability to lead a long and healthy life, to acquire knowledge and skills, and to have access to the resources needed to afford a decent standard of living. The composite index ranges from 0 to 1, with 1 as the best. In 1990 and 1994, the indexes were 0.665 and 0.660, respectively.

With population pressures on the economy and the environment as well, strategies of the government include control of population growth and development of human resources. The need for urbanization strategy has also been emphasized.

### Housing and Infrastructure

With the growing population, the provision of housing becomes a major concern of the government. Through its National Shelter Program, households throughout the country were provided assistance concerning their housing needs with a combined value of 104 million pesos for the period 1993 to 1997. Table 2 shows the number of households which were assisted by type of program.

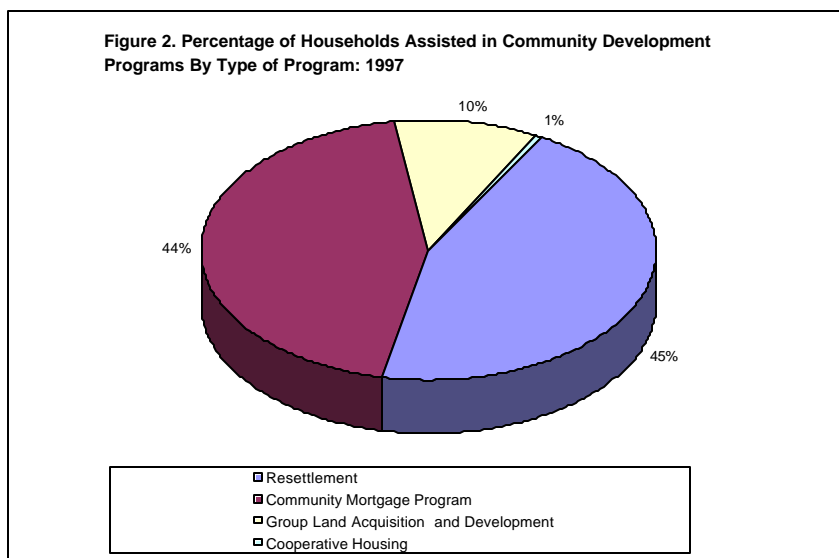


Table 2. Number of Households Assisted in Community Development Programs by Type of Program, 1993 to 1997

Program	1993	1994	1995	1996	1997
Total	17,326	22,424	25,291	24,852	32,981
Resettlement	4,401	7,508	12,369	13,132	14,826
Community Mortgage Program	10,139	11,690	9,290	10,192	14,591
Group Land Acquisition and Development	2,428	3,205	3,398	1,266	3,399
Cooperative Housing	358	21	234	262	165

Source: Housing and Land Use Regulatory Board

Despite the efforts, the government has not been able to cope with the housing needs of the populace. For the period 1993 to 1998, there is a backlog of about 3,726,000 housing units in the country. This is broken down as follows: growth - 1,498,000 units, double-up - 444,000 units, relocation - 422,000 units, homeless - 7 units and upgrading need - 1,355,000 units.

The proliferation of slum and squatter settlements continues to be very visible in the country. Under the resettlement program of the government, a total of 52,236 households were relocated for the period 1993 to 1997.

Aside from housing, other thrusts of the government include provision of infrastructures, such as national roads and bridges, schools, and hospitals. In 1997, investments for national roads and bridges amounted to around 20 billion pesos while the allocation for health infrastructure was estimated to be 860 million pesos.

## Services

In 1994, 84.0 percent of the total households in the country had access to safe drinking water while 71.1 percent had access to sanitary toilet. The table below provides the percentage distribution of households with access to safe drinking water and sanitary toilet by region.

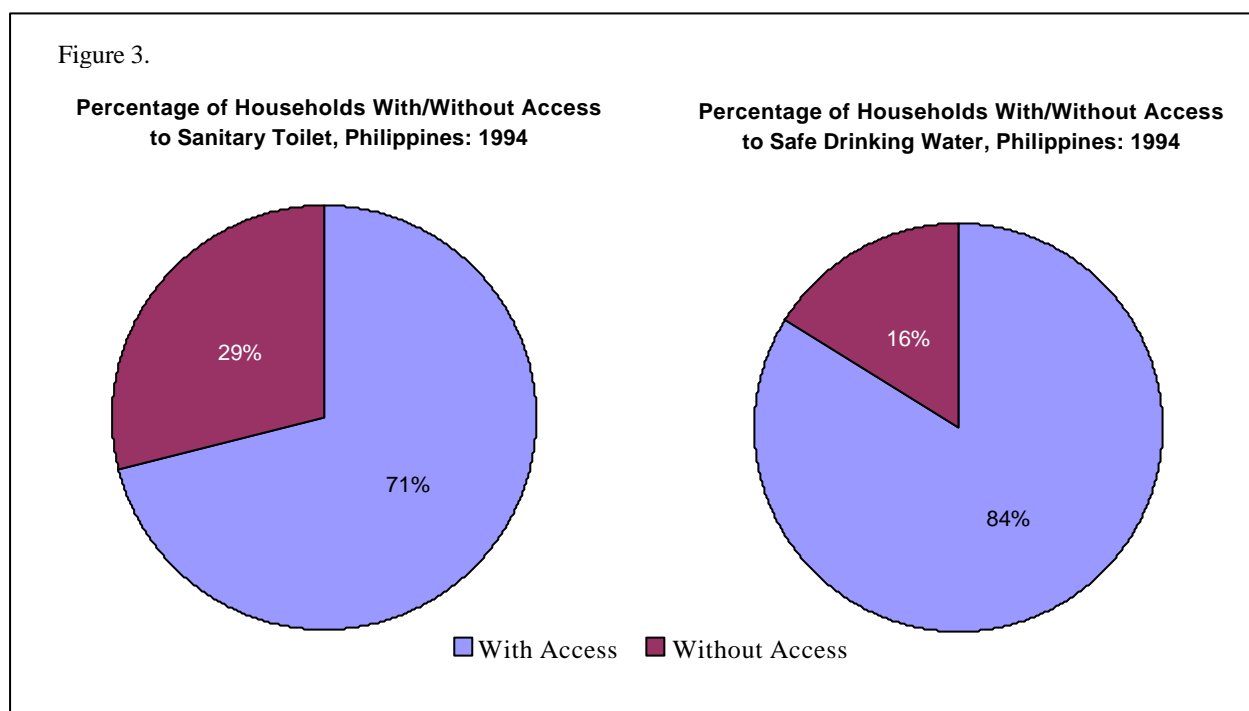
Table 3. Percentage Distribution of Households  
With Access to Services By Region, 1994

Region	With Access to Safe Drinking Water	With Access to Sanitary Toilet
Philippines	84.0	71.1
Metro Manila	94.5	80.9
CAR	85.0	58.2
Region 1	91.7	84.3
Region 2	72.8	62.9
Region 3	96.2	79.2
Region 4	83.3	66.7
Region 5	74.2	58.1
Region 6	83.8	81.9
Region 7	74.3	64.6
Region 8	78.7	68.3
Region 9	76.5	66.1
Region 10	88.0	67.4
Region 11	80.9	63.5
Region 12	73.8	56.7
ARMM	74.0	63.8

Source: Department of Health

Other services availed of by the households include health services in which 2,971,366 households benefitted in 1992. The health services were provided by the government hospitals, rural health units, barangay health stations and private hospitals. It can be said that many of the country's major health problems are traceable to poor sanitation.

Because of the growing population, there is inadequate level of services in the country and lack of access to them in some areas.



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### Disasters

Disasters can be classified as natural and man-made. Table 4 provides the details on the occurrences of disasters in the country.

Two major disasters which hit the country were the earthquake in 1990 and the eruption of Mt. Pinatubo in 1991. The earthquake, the strongest and most devastating that hit Luzon Island, caused thousands of fatalities and injuries and widespread destruction of buildings and physical infrastructures. On the other hand, the Mt. Pinatubo eruption forced a great number of people to abandon their homes and lose their jobs and permanently devastated several thousands of hectares of the country's most productive agricultural lands.

Table 4. Number of Occurrences by Kind of Disaster

Kind of Disaster	1994	1995	1996	1997
<b>Natural Disasters</b>				
Typhoon	13	9	10	6
Floodings	32	34	21	28
Earthquakes	12	35	29	8
Landslides	6	13	12	8
Tornado	7	3	7	12
Red Tide	8	5	5	-
Locust infestation	2	2	-	-
<b>Man-Made Disasters</b>				
Civil disturbances	34	25	11	4
Sea mishap	2	2	5	6
Vehicular accidents	10	11	2	12
Bomb/grenade explosion	-	8	15	8
Air mishap	1	-	-	3
Fire incidents	-	161	81	143
Collapsed bridge/building wall	-	2	6	4

Source: Office of Civil Defense

2.2      **STATISTICAL TABLES**

**TABLE 7.1**  
**POPULATION GROWTH RATE BY REGION AND PROVINCE**  
**Census Years 1980 to 1995**  
(In percent)

Region and Province	Annual Average Growth Rate		Region and Province	Annual Average Growth Rate		Region and Province	Annual Average Growth Rate	
	1980-1990	1990-1995		1980-1990	1990-1995		1980-1990	1990-1995
<b>NCR</b>	2.98	3.30	<b>Region IV</b>			<b>Region IX</b>		
Manila	(0.18)	0.62	<b>Southern Tagalog</b>	3.05	3.53	<b>Western Mindanao</b>	2.28	2.42
City of Mandaluyong	1.91	2.75	Aurora	2.68	2.55	Basilan	1.70	4.12
Marikina	3.90	2.68	Batangas	2.32	2.20	Zamboanga del Norte	1.42	2.46
Pasig City	4.00	3.22	Cavite	4.10	6.47	Zamboanga del Sur	2.70	2.28
Quezon City	3.66	3.34	Laguna	3.48	3.32			
San Juan	(0.25)	(0.40)	Marinduque	0.66	1.41	<b>Region X</b>		
Kalookan City	5.02	5.64	Occidental Mindoro	2.42	3.50	<b>Northern Mindanao</b>	2.28	2.32
Malabon	3.90	4.13	Oriental Mindoro	2.10	1.91	Bukidnon	2.94	2.05
Navotas	4.04	3.82	Palawan	3.58	3.67	Camiguin	1.18	1.08
Valenzuela	4.82	4.81	Quezon	1.97	2.30	Misamis Occidental	0.94	1.48
Las Pinas	8.08	6.37	Rizal	5.81	5.68	Misamis Oriental	2.29	3.27
City of Makati	1.98	1.25	Romblon	1.65	1.36			
City of Muntinlupa	7.37	7.02				<b>Region XI</b>		
Paranaque	3.98	4.57	<b>Region V</b>			<b>Southern Mindanao</b>	2.28	2.72
Pasay City	2.50	1.96	<b>Bicol</b>	1.18	1.91	Davao	3.83	2.28
Pateros	2.47	1.37	Albay	1.11	2.01	Davao del Sur	2.72	2.58
Tagig	7.11	6.93	Camarines Norte	2.41	2.20	Davao Oriental	1.50	0.87
			Camarines Sur	1.74	1.75	South Cotabato	3.37	4.16
<b>CAR</b>	2.28	1.71	Catanduanes	0.65	1.50			
Abra	1.44	1.11	Masbate	0.25	1.65	<b>Region XII</b>		
Benguet	3.19		Sorsogon	0.44	2.35	<b>Central Mindanao</b>	2.28	2.66
Ifugao	2.83	0.29				Lanao del Norte	2.91	
Kalinga-Apayao	1.36		<b>Region VI</b>			Cotabato	3.07	2.30
Mt.,Province	1.24	2.18	Western Visayas	1.77	1.30	Cotabato City	2.28	2.74
			Aklan	1.60	1.43	Marawi City	2.28	4.19
<b>Region I</b>			Antique	1.65	1.14	Sultan Kudarat	3.68	3.44
<b>Ilocos</b>	0.92	1.30	Capiz	1.73	1.26			
Ilocos Norte	1.68	0.84	Iloilo	1.58	1.22	<b>CARAGA<sup>a/</sup></b>	2.28	1.82
Ilocos Sur	1.60	0.90	Negros Occidental	2.10	1.52	Agusan del Norte	2.45	2.02
La Union	1.95	1.61	Guimaras			Agusan del Sur	4.73	3.85
Pangasinan	2.13	1.42				Surigao del Norte	1.60	0.70
			<b>Region VII</b>			Surigao del Sur	1.82	0.78
<b>Region II</b>			<b>Central Visayas</b>	1.95	1.65			
<b>Cagayan Valley</b>	1.31	1.51	Bohol	1.64	0.89	<b>ARMM<sup>b/</sup></b>	2.28	1.80
Batanes	2.20	(1.08)	Cebu	2.38	1.99	Lanao del Sur	4.01	2.24
Cagayan	1.55	1.43	Negros Oriental	1.22	1.94	Maguindanao	3.51	0.92
Isabela	2.18	1.35	Siquijor	0.50	(0.04)	Sulu	2.68	2.50
Nueva Vizcaya	2.22	2.01				Tawi-Tawi	1.60	1.78
Quirino	3.21	2.63	<b>Region VIII</b>			<b>Philippines</b>	2.35	2.32
			<b>Eastern Visayas</b>	0.88	1.84			
<b>Region III</b>			Eastern Samar	0.27	1.80			
<b>Central Luzon</b>	2.58	2.12	Leyte	1.32	1.89			
Bataan	2.79	2.72	Northern Samar	0.13	3.21			
Bulacan	3.22	3.24	Samar	0.63	1.88			
Nueva Ecija	2.07	2.61	Southern Leyte	0.83	(0.26)			
Pampanga	2.64	1.31						
Tarlac	2.25	1.80						
Zambales	2.40	0.22						

Source: National Statistics Office.  
<sup>a/</sup> Created into a region under RA No. 7901 dated February 23, 1995, taken from Region X and Region XI.  
<sup>b/</sup> Created into a region under RA No. 7864 dated November 26, 1989, taken from Region IX and Region XII.

**TABLE 7.2**  
**NUMBER OF HOUSING UNITS CONSTRUCTED USING HUDCC ACCREDITED TECHNOLOGIES**  
**BY PROJECT AND BY LOCATION**  
**1994 to 1997**

<b>Technology</b>	<b>Project</b>	<b>Location</b>	<b>No. of Units</b>
Light Gauge Steel Section	Camella Attica	Cavite	74
	Macaria Homes	Laguna	48
Austra-Fil Light Gauge Steel Section		San Dionisio, Bacolod City	170
Architectural Pre-cast Concrete	Liwayway Subdivision	Cavite	380
	Crystal Air	Cavite	20
	Aztec Homes	Laguna	310
	Pandaqui Resettlement Project	Pampanga	40
Duraspan-Steel Frame and Metal Cladding	Lexberville Subdivision	Baguio City	200
PBS Pre-Cast Concrete	Legacy Homes	Laguna	900
	CSE Homes	Laguna	122
	Filinvest Pabahay 2000	Cavite	847
	Lexber Homes	Bulacan	343
	Bahay Bayanihan	Bulacan	999
	Belvedere Towne	Cavite	150
	Villa Elisa Subdivision	Cavite	334
Sandwich Panel System			
Cheecolite-Lightweight Concrete	Camella Homes	Cavite	60
	Duplex	Batangas	10
SWS Neopor-Lightweight Concrete	Viva Homes	Cavite	1,184
Zamboard	Cristina Homes	Zamboanga City	25
	Carmen Valley	Zamboanga	200
Modular Housing	Residential Units		5
UBTI Building System	Palao Development Corporation	Bataan	1,400
	Sual, Pangasinan	Pangasinan	700
	Stephanie Homes	Cebu	500
	RR Builders	Laguna	400

Source: Housing and Urban Development Coordinating Council

**TABLE 7.3**  
**VOLUME OF CRUDE OIL IMPORTATIONS BY COUNTRY OF ORIGIN**  
**1990 to 1996**  
(In thousand barrels)

Country	Volume						
	1990	1991	1992	1993	1994	1995	1996
<b>Middle East</b>	65,530	60,382	72,891	71,015	78,865	110,760	119,044
Saudi Arabia	25,659	34,682	43,441	37,641	53,549	80,620	76,797
Kuwait	6,748	--	4,997	11,655	3,765	1,034	--
Iran	5,331	11,408	9,467	7,289	4,904	9,070	16,801
Iraq	3,843	--	--	--	--	--	--
Abu Dhabi	--	--	--	--	--	--	--
Qatar	4,009	4,247	2,568	999	--	--	1,169
Dubai	17,777	10,045	--	--	--	--	--
Oman	1,030	--	--	--	2,240	6,303	12,083
Neutral Zone	--	--	--	--	--	--	--
United Arab Emirates	1,133	--	12,418	13,431	14,407	13,733	12,194
<b>Other Regions</b>	14,568	16,274	16,119	12,690	9,562	8,324	8,974
Indonesia	708	1,432	1,631	2,542	2,742	2,399	1,363
Malaysia	7,474	7,130	9,194	7,138	4,886	2,767	3,476
Brunei	4,491	4,562	4,303	2,251	1,934	759	--
China (PROC)	1,154	2,989	760	759	--	--	3,186
Mexico	--	--	--	--	--	--	--
Australia	430	--	231	--	--	--	--
Pakistan	311	161	--	--	--	--	--
Nigeria	--	--	--	--	--	2,399	948
<b>Total</b>	80,098	76,656	89,010	83,705	88,427	119,084	128,018

Source: Department of Energy.

**TABLE 7.4**  
**ENERGY CONSUMPTION BY SOURCE**  
**1990 to 1995**  
**(In million barrels of fuel-oil equivalent, MMBFOE)**

<b>Energy Source</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>
<b>Indigenous Energy</b>	41.31	40.61	38.01	39.28	42.18	42.12
I. Conventional	25.22	25.07	22.69	25.49	28.15	27.32
Oil	1.53	1.06	0.54	1.19	0.55	0.03
Coal	3.82	5.21	4.99	5.86	6.59	6.07
Hydro	10.45	8.87	7.33	8.67	10.11	10.64
Geothermal	9.42	9.93	9.83	9.77	10.90	10.58
II. Non-Conventional	16.09	15.54	15.32	13.79	14.03	14.80
Bagasse	5.42	6.15	6.08	4.90	5.21	4.05
Agriwaste	10.35	9.03	8.83	8.42	8.28	10.33
Others	0.32	0.36	0.41	0.47	0.55	0.42
<b>Imported Energy</b>	79.27	81.85	91.66	97.54	104.35	117.73
Oil	76.20	78.58	88.97	94.79	102.19	113.98
Coal	3.07	3.28	2.69	2.75	2.16	3.75

Source: Department of Energy.

**TABLE 7.5**  
**EXISTING RURAL WATER SUPPLY (LEVEL 1) FACILITIES BY REGION**  
**1990 to 1997**

<b>Region</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>
NCR	--	298	184	--	--	--	--	--
CAR	1,105	845	625	64	134	123	81	--
Region I	1,070	2,040	129	134	389	402	360	53
Region II	1,495	723	4	3	306	370	41	10
Region III	1,746	1,238	2,188	312	1,679	1,764	108	29
Region IV	5,197	3,026	2,788	904	1,360	1,480	225	71
Region V	3,285	2,654	1,157	1,740	1,419	1,762	280	32
Region VI	2,357	5,759	1,788	1,252	1,029	247	172	--
Region VII	1,430	1,513	852	775	535	209	--	--
Region VIII	1,834	771	435	230	142	227	25	--
Region IX	2,060	1,172	1,685	285	370	135	--	--
Region X	749	609	921	294	252	179	11	10
Region XI	851	1,520	865	403	351	191	--	--
Region XII	988	444	485	180	104	122	--	--
ARMM	1,645	569	608	574	129	76	20	--
<b><i>Philippines</i></b>	<b>25,812</b>	<b>23,181</b>	<b>14,714</b>	<b>7,150</b>	<b>8,199</b>	<b>7,287</b>	<b>1,323</b>	<b>205</b>

Source: Department of Public Works and Highways.

**TABLE 7.6**  
**NUMBER OF MOTOR VEHICLES REGISTERED BY TYPE OF VEHICLE**  
**1990 to 1996**

Type of Vehicle	1990	1991	1992	1993	1994	1995	1996
Private	1,305,142	1,370,084	1,518,767	1,685,080	1,847,771	2,030,705	2,277,102
Cars	419,410	421,976	453,112	498,126	537,446	581,910	641,738
Utility Vehicles	517,679	558,347	624,698	689,406	754,829	837,271	928,159
Buses	3,279	3,399	4,796	3,948	4,155	3,735	4,080
Trucks	116,956	123,291	134,719	151,207	164,804	177,004	203,316
Motorcycles							
Tricycles	232,848	247,328	284,526	322,944	365,679	407,050	472,492
Trailers	14,970	15,743	16,916	19,449	20,858	23,735	27,317
For Hire	246,082	280,254	307,887	386,777	437,797	493,103	564,974
Cars	13,676	16,360	19,484	24,047	26,195	35,977	51,299
Utility Vehicles	71,365	87,285	96,471	119,208	131,939	135,229	144,193
Buses	14,667	16,884	20,493	20,303	23,095	23,983	25,002
Trucks	6,515	7,534	7,484	9,232	10,312	10,832	11,531
Motorcycles/							
Tricycles	138,948	151,091	162,694	212,639	244,873	285,366	331,299
Trailers	911	1,100	1,261	1,348	1,383	1,716	1,650
Government	45,482	44,759	43,363	47,185	48,865	51,160	57,466
Cars	6,052	5,724	4,846	4,843	4,725	4,613	5,473
Utility Vehicles	23,704	22,732	22,064	25,130	25,431	25,428	28,400
Buses	386	402	518	350	345	458	247
Trucks	5,607	4,552	4,210	4,632	4,546	4,878	5,464
Motorcycles/							
Tricycles	9,617	11,144	11,603	12,065	13,713	15,571	17,754
Trailers	116	205	122	165	105	212	128
Diplomatic	5,895	6,205	3,227	3,241	3,309	3,070	3,273
Exempt	17,641	14,064	6,319	2,832	3,727	3,316	1,672
<b>Total Motor Vehicles</b>	<b>1,620,242</b>	<b>1,715,366</b>	<b>1,879,563</b>	<b>2,125,115</b>	<b>2,341,469</b>	<b>2,581,354</b>	<b>2,904,487</b>

Source: Land Transportation Office.

**TABLE 7.7a**  
**ANNUAL AVERAGE DAILY TRAFFIC - NATIONAL CAPITAL REGION**  
**1990 to 1996**

Station Number	Class	KM No.	Road Section	Totals						
				1990	1991	1992	1993	1994	1995	1996
<i>National Capital Region</i>										
1	SEAS	16	Valenzuela - Meycauayan	19,061	19,309	20,271	20,270	20,173	20,771	21,005
6	SEAS	33	Muntinlupa - San Pedro	18,576	19,974	22,085	21,303	21,914	22,826	23,454
42	SEAS	20	Pasig - Cainta	30,847	32,821	34,585	36,956	37,839	40,045	41,760
43	SEAS	16	Las Pinas - Bacoor	21,975	22,407	22,863	22,931	23,277	23,742	23,964
132	CONT	25	Novaliches - San Jose del Monte	7,222	7,537	8,314	8,802	9,247	9,820	10,395
<i>Circumferential Road I</i>										
9911	CONT		Juan Luna - Abad Santos		29,483	29,822	32,268	34,825	37,198	38,849
9912	COV		Abad Santos - Avenida	30,730	31,394	32,243	31,730	31,794	32,319	32,316
9913	COV		Quezon Ave. - P. Casal	No Report	30,680	31,833	32,681	33,056	33,491	34,403
9914	COV		C.M. Recto - Taft Avenue	39,393						
			C.M. Recto - Dagupan		49,431	49,757	53,777	57,753	62,392	64,796
9915	COV		Taft Ave. - Roxas Boulevard		66,733	69,810	72,738	69,942	78,460	81,459
<i>Circumferential Road II</i>										
9921	COV		Juan Luna - Abad Santos Ave.	25,824	26,562	28,036	29,537	30,978	32,173	33,706
9922	COV		Abad Santos - Rizal Ave.	20,998	22,616	23,494	24,486	26,408	27,415	28,647
9923	COV		Rizal Ave. - Dimasalang		21,506	21,932	22,311	22,684	23,062	23,458
9924	COV		Dimasalang - Quezon Ave.		35,921	37,298	36,940	36,438	36,109	36,401
9925	COV		Espana - G. Tuazon	No Report	38,897	35,897	36,015	37,836	41,161	39,901
9927	COV		South Superhighway - Taft Ave.	52,798						
			South Superhighway - Otis		59,830	62,596	65,811	68,918	73,458	76,355
9928	COV		Taft Avenue - A. Mabini	No Report	34,551	40,507	45,984	48,702	54,206	59,041
<i>Circumferential Road III</i>										
9931	COV		Quezon Blvd. - E. Rodriguez		17,111	17,476	17,898	18,189	18,547	18,920
9932	COV		E. Rodriguez - Aurora Blvd.	39,908	47,643	51,266	54,187	60,236	64,812	68,622
9933	COV		South Ave. - South Superhighway	52,539	57,125	56,754	57,592	61,295	62,456	63,600
9934	COV		South Superhighway - Taft Ave.	49,667	54,523	53,204	48,577	49,267	49,030	46,452
9935	COV		Paseo de Roxas - Taft Ave.		57,377	58,483	59,543	60,617	61,663	62,748

TABLE 7.7a (continued)...

Station Number	Class	KM No.	Road Section	Totals						
				1990	1991	1992	1993	1994	1995	1996
<i>Circumferencial Road IV</i>										
9940	COV		Sangandaan - Dagupan		31,562	32,270	32,705	33,120	33,557	34,095
9941	COV		McArthur - North Diversion	68,972	77,018	78,102	79,779	81,795	85,658	86,872
9942	COV		Munoz - Project 7	83,527	41,575	98,771	102,348	111,595	119,136	126,675
9943	COV		Quezon Blvd. - Timog	No Report	65,922	74,047	81,482	85,637	93,238	99,972
9944	COV		Kamias - New York	106,350	117,937	125,174	129,025	137,563	145,364	151,034
9945	COV		Col. B. Serrano - Ortigas		84,208	85,652	87,327	88,941	90,430	92,031
9946	COV		Ortigas - Shaw Blvd.	99,909	97,206	105,622	114,703	120,975	127,045	136,565
9947	COV		Estrella - Buendia	159,806	173,646	179,472	182,104	192,062	194,313	200,498
9948	COV		Pasay Road - South Superhighway		115,693	116,920	118,148	119,382	120,602	902,613
9949	COV		Malibay - Tramo	103,143	114,100	118,648	125,392	132,694	139,985	145,910
9441	COV		EDSA - QMC (North)	No Report	54,917	49,375	54,306	52,419	58,302	56,769
9442	COV		EDSA - Delta (West)	44,296	46,864	42,955	46,502	46,924	46,976	47,314
9443	COV		EDSA - QMC (East)	No Report	48,348	50,885	53,433	54,914	57,421	59,653
9444	COV		EDSA - Delta (Along Timog)	39,316	36,365	39,206	44,290	47,637	48,873	53,656
9445	COV		Amorsolo - Paseo de Roxas		30,144	30,678	31,276	31,883	32,496	33,068
9446	COV		Buendia Ave. - Paseo de Roxas		53,100	53,721	55,288	57,506	58,443	59,953
<i>Circumferencial Road V</i>										
9951	COV		Visayas Ave. - DMMA	13,641	15,823	16,301	16,541	17,398	18,411	18,776
9952	COV		U.P. Highschool - Ateneo	35,451	36,924	39,551	42,956	44,390	47,094	49,822
9953	COV		Industrial - Ortigas	22,363	24,248	26,079	27,877	28,123	30,242	31,471
9954	COV		Ortigas - Julio Vargas	No Report	27,357	26,406	28,021	29,789	31,346	32,007
9955	COV		San Antonio - B.F. Homes	19,730	18,908	20,352	19,164	19,701	19,631	19,789
9956	COV		MIA Rd. - Paranaque Pob.	20,007	22,867	22,509	23,542	24,642	25,704	26,200
9957	COV		Quirino Ave. - Imelda Ave.	24,579	28,084	18,972	16,925	21,336	23,717	20,936

TABLE 7.7.a (continued) ...

Station Number	Class	KM No.	Road Section	Totals						
				1990	1991	1992	1993	1994	1995	1996
<i>Radial Roads</i>										
9801	COV		C. M. Recto - Tayuman		11,841	12,065	12,289	12,511	12,733	12,957
9802	COV		Honorio Lopez - Sangandaan	16,668	18,418	19,736	20,893	22,456	23,850	25,146
9803	COV		Sangandaan - Sanciango	10,519	10,562	11,139	11,617	12,432	12,718	13,390
9804	COV		Juan Luna - Navotas	10,041	10,725	10,247	9,851	11,133	9,993	9,717
9811	COV		C. M. - Forbes		37,595	37,917	39,201	40,535	41,790	42,848
9812	COV		Forbes (Mendoza) - Antipolo	No Report	27,309	28,319	28,984	30,387	31,378	32,417
9813	COV		Aurora - Del Monte	44,557	47,218	49,085	50,171	53,992	55,552	57,676
9814	COV		Del Monte - Edsa	53,810	56,921	56,427	60,043	65,396	66,840	69,495
9815	COV		Quirino Highway	No Report	40,673	48,891	56,060	60,154	68,113	73,816
9816	COV		Mayon - G. Araneta Ave.	19,252	19,619	20,641	21,054	21,956	22,557	23,322
9821	COV		Lerma - Forbes	No Report	76,494	79,419	82,248	84,360	87,211	89,940
9822	COV		Forbes - Blumentritt	77,062	82,208	86,499	89,706	96,540	100,309	104,625
9823	COV		Mayon - Banawe	53,594	49,862	51,239	50,334	49,291	48,462	48,445
9824	COV		Araneta - Roosevelt		79,496	80,265	81,040	81,822	82,318	83,149
9825	COV		EDSA - QMC		37,075	37,436	37,796	38,155	38,513	38,874
9826	COV		QMC - University Ave.	91,166	90,509	77,158	94,849	96,446	94,506	98,855
9827	COV		Frisco - Munoz		28,339	28,437	28,965	29,507	30,013	30,379
9831	COV		Welcome - G. Araneta	45,962	45,173	48,103	48,948	50,838	51,864	53,821
9832	COV		G. Araneta - Gilmore	44,048	42,561	42,938	42,465	42,125	41,645	41,554
9833	COV		New York - Cubao Interchange	No Report	27,983	28,127	28,277	28,479	28,639	28,801
9834	COV		Tomas Morato - EDSA	21,268	20,361	22,315	24,452	26,342	27,217	29,456
9841	COV		C.M. Recto - Nagtahan		29,128	29,386	29,674	29,947	30,221	30,495
9842	COV		Pureza - Old Sta. Mesa		88,345	89,947	91,715	93,483	95,234	96,947
9843	COV		A. Luna - Hollywood	45,063	48,045	52,869	52,549	54,293	57,476	44,930
9844	COV		Gilmore - Arayat	34,300	37,414	38,887	40,080	41,647	43,679	49,904
9845	COV		Anonas - Katipunan	44,412	46,236	47,893	45,613	46,387	51,104	29,904
9846	COV		Katipunan - J.P. Rizal	No Report	34,790	36,606	34,614	32,400	30,496	
9847	COV		J.P. Rizal - Marikina Diversion		37,236	37,599	37,960	93,483	39,584	39,771
9848	COV		Bayanbayanan - Nanka Bridge	9,861	10,400	10,233	9,847	9,612	11,776	12,214
9851	COV		Ramon - Corazon de Jesus	No Report	27,062	26,497	26,006	25,900	25,379	24,980
9852	COV		EDSA - 20th Avenue		26,613	26,872	27,130	27,386	56,577	27,901
9861	COV		Wilson - EDSA	50,967	50,803	51,968	52,413	56,804	56,577	58,634

TABLE 7.7a (continued)...

Station Number	Class	KM No.	Road Section	Totals						
				1990	1991	1992	1993	1994	1995	1996
<i>Radial Roads</i>										
9862	COV		E. Rodriguez - EDSA		25,605	25,853	26,101	26,348	26,414	26,699
9863	COV		MLA East Road - Taytay Diversion		23,334	23,561	23,787	24,013	24,239	24,465
9871	COV		Magsaysay Blvd. - Kalentong		35,235	35,521	35,953	36,392	36,819	37,195
9872	COV		Gonzales - EDSA	39,707	41,397	40,860	41,142	41,653	41,864	41,976
9873	COV		EDSA - Gen. Lim	No Report	40,326	41,885	42,605	44,240	45,839	46,994
9881	COV		Sanggumay - EDSA	No Report	28,101	31,432	34,478	36,089	39,275	41,977
9891	COV		JP Rizal Bet. Estrada (Estrella) - South Av	6,898	8,221	8,686	9,544	10,009	10,886	11,408
9892	COV		Estrada - South Ave. (Soring - Palma)	27,688	32,626	31,829	33,997	35,727	37,613	38,519
9701	COV		Pres. Quirino - Vito Cruz	No Report	87,483	89,654	90,704	93,838	96,502	98,304
9702	COV		Buendia Ave. - EDSA	62,594	52,335	56,638	54,908	52,728	50,693	51,308
9703	COV		Highway Sales - Nichols Edsa		112,173	113,265	114,354	115,441	116,527	117,617
9711	COV		Pedro Gil - Remedios	14,522	14,581	15,175	15,810	16,400	16,801	17,501
9712	COV		Pasadena - Lovilina Sr		19,528	19,898	20,267	20,634	21,000	21,420
9721	COV		Del Pan Bridge - P. Burgos	52,728	60,347	58,820	60,004	60,222	62,819	62,365
9722	COV		Pres. Quirino - P. Burgos		86,802	88,448	90,086	91,715	93,339	94,964
9723	COV		Redemptorist - MIA Rd.	68,112	71,679	79,291	83,552	88,362	93,909	99,446
9724	COV		Paranaque - Sucat - MIA Road		23,725	18,397	22,798	25,595	27,827	28,291
9725	COV		Ilaya - Pulang Lupa	38,144	38,358	41,278	42,971	43,968	45,822	47,762
9726	COV		Earth Subd. - Alvarez Ave. (Mother Earth - Marcos Highway)	35,354	36,122	38,125	40,092	41,524	43,137	45,029

Source: Department of Public Works and Highways

**TABLE 7.7b**  
**ANNUAL AVERAGE DAILY TRAFFIC - CEBU CITY**  
**1990 to 1996**

Station Number	Class	KM No.	Road Section	Totals						
				1990	1991	1992	1993	1994	1995	1996
7370	COV	7	Cebu South	20,651	21,895	24,057	25,921			
7373	COV	4	De La Montana - Subungkadu	11,416	11,752	12,504	13,271			
7324	COV	4	Legaspi - Juan Luna	16,220	17,515	19,087	20,633			
7301	COV	3	Gen. Maxilom - San Jose	31,187	33,720	36,784	39,789			
7383	COV	4	C. Padilla - Tres de Abril	7,843	8,041	8,502	8,981			
7334	COV	2	Ramos - Sicutuna	8,994	9,284	9,763	10,306			
7358	COV	2	Pelaez - Junquera	10,518	10,833	11,521	12,225			
7382	COV	2	L. Kilat - V. Rama Ave.	15,563	15,931	16,315	16,697			
7338	COV	2	C. Reyes - Gen. Maxilom	21,452	26,211	25,660	24,707			
7327	COV	4	Juan Luna Magallanes	33,975	36,750	40,155	43,482			
7342	COV	4	Escarion - Salinas Drive	22,498	24,300	26,488	28,638			
0744	COV	1	Cebu North Road (Fuentes Capital)					33,252	29,726	30,028
0745	COV	5	M.J. Cuenco Ave.					28,483	34,191	35,630
0747	COV	2	Gerardo Ave. (Escario - Salinas)						27,669	25,539
0746	COV	4	San Jose dela Montana - Subangdaku							25,406
0748	COV	3	Gerardo Ave. (G. Reyes - Gen. Maxilom)							40,557

Source: Department of Public Works and Highways.

**TABLE 7.7c**  
**ANNUAL AVERAGE DAILY TRAFFIC - DAVAO CITY**  
**1990 to 1996**

Station Number	Class	KM No.	Road Section	Totals						
				1990	1991	1992	1993	1994	1995	1996
54	CONT	350	Reg'l. Bdry. Quezon City	100	84	71	69			
7518	COV	356	Davao - Cotabato	8,670	8,616	9,464	9,977			
7500	COV	363	Davao - Cotabato	26,747	28,083	30,469	32,505			
7525	COV		Davao Port	19,174	20,320	22,010	23,544			
7555	COV		Airport Road	4,221	4,749	5,255	5,633			
7533	COV		Bonifacio - Davao Port	17,336	19,302	21,259	22,837			
7539	COV		San Pedro - A. Luna	21,719	22,693	23,946	25,618			
7514	COV	349	Davao City Limit - Toril	5,357	5,215	4,675	4,234			
7528	COV		San Roque	34,309	35,469	37,540	39,844			
7549	COV		Jone Monumento - Harvadian School	22,862	23,209	22,772	22,616			
7568	COV	372	Davao - Bukidnon - Calinan	3,718	4,502	4,373	4,455			
7567	COV		Rizal Ave. - San Pedro	28,300	15,268	15,891	16,761			
7524	COV		Carpenter - 4th -5th St.	13,269	13,831	14,859	15,899			
7532	COV		Bonifacio - Davao Port	38,954	41,782	45,134	48,434			
7566	COV		Anda Bolton	19,220	20,598	22,224	23,826			
7526	COV		Gompesaw - Libertad	9,332	9,967	10,793	11,642			
53	SEAS	1621	Reg'l. Boundary Quezon - Davao City					205		279
1132	COV	1513	Davao - Cotabato Road (Matina Section)					22,216		25,748
1133	COV	1509	R - Magsaysay Ave. (Davao Port Road)					16,833		19,133
1134	COV	1501	Davao - Agusan Road (Airport Road)					6,078		7,378
1135	COV	1510	Quezon Blvd. Road (Between Bonifacion - R. Magsaysay Road)							23,926
1136	COV	1510	Quirino Avenue (Between San Pedro - A. Luna)							22,387
1137	COV	1521	Davao - Cotabato (Toril Section)							6,966
1138	COV	1508	Davao - Agusan (Bajada Street)							16,278
1139	COV	1690	Davao - Bukidnon Road (Calinan Section)							1,211

Source: Department of Public Works and Highways.

**TABLE 7.8**  
**LAND USE PLANS APPROVED BY REGION BY PROVINCE**  
**As of September 1997**

Region	Province	Total No. of Municipality/City	With HLURB	Without HLURB
			Approved Plan	Approved Plan
NCR	Aurora	8	3	5
	Occidental Mindoro	11	7	4
	Palawan	24	11	13
	Rizal	14	10	4
	Romblon	17	10	7
	Metro Manila	17	17	--
CAR	Abra	27	6	21
	Benguet	14	7	7
	Ifugao	12	4	8
	Apayao	7	5	2
	Kalinga	8	4	4
	Mt. Province	10	6	4
Region I	Ilocos Norte	23	17	6
	Ilocos Sur	34	22	12
	La Union	20	20	--
	Pangasinan	48	35	13
Region II	Batanes	6	6	--
	Cagayan	29	27	2
	Isabela	37	32	4
	Nueva Viscaya	15	11	4
Region III	Quirino	6	6	--
	Bataan	12	11	1
	Bulacan	24	21	3
	Nueva Ecija	32	27	5
	Pampanga	22	18	4
	Tarlac	18	14	4
Zambales	14	13	1	

TABLE 7.8 (continued) ...

Region	Province	Total No. of Municipality/City	With HLURB	Without HLURB
			Approved Plan	Approved Plan
Region IV	Batangas	34	18	16
	Cavite	23	18	5
	Laguna	30	18	12
	Marinduque	6	5	1
	Or. Mindoro	15	15	--
	Quezon	41	28	13
Region V	Albay	18	14	4
	Camarines Norte	12	8	4
	Camarines Sur	37	25	12
	Catanduanes	11	7	4
	Masbate	21	13	8
	Sorsogon	16	13	3
Region VI	Aklan	17	17	--
	Antique	18	16	2
	Capiz	17	17	--
	Iloilo	44	42	2
	Negros Occidental	32	29	3
	Guimaras	5	2	3
Region VII	Bohol	48	39	9
	Cebu	53	39	14
	Negros Oriental	25	17	8
	Siquijor	6	6	--

**TABLE 7.8 (continued) ...**

Region	Province	Total No. of Municipality/City	With HLURB	Without HLURB
			Approved Plan	Approved Plan
Region VIII	Biliran	8	7	1
	Eastern Samar	23	13	10
	Leyte	43	33	10
	Northern Samar	24	12	12
	Western Samar	26	14	12
	Southern Leyte	19	9	10
Region IX	Basilan	7	4	3
	Zamboanga N.	27	20	7
	Zamboanga S.	44	36	7
Region X	Bukidnon	22	19	3
	Camiguin	5	5	--
	Misamis Oriental	26	24	2
	Misamis Occidental	17	15	2
Region XI	Davao Oriental	11	10	1
	Davao del Norte	22	21	1
	Davao del Sur	16	15	1
	South Cotabato	12	12	--
	Saranggani	7	6	1
CARAGA	Agusan del Norte	12	11	1
	Agusan del Sur	14	14	--
	Surigao del Sur	19	18	1
	Surigao del Norte	28	19	9
Region XII	Lanao del Norte	23	13	10
	North Cotabato	18	12	6
	Sultan Kudarat	12	8	4
ARMM	Sulu	18	7	11
	Tawi-tawi	11		10
	Lanao del Sur	39	14	25
	Maguindanao	19	15	3
<b>Total</b>		1,610	1,182	424

Source: Housing and Land Use Regulatory Board.

\* Cut off data: 1993

**Table 7.9**  
**Disaster Occurrences**  
**1993 to 1997**

Kind of Disaster	Year				
	1993	1994	1995	1996 <sup>a/</sup>	1997
Natural Disasters					
1. Typhoon	13	13	9	10	6
2. Floodings	26	32	34	21	28
3. Earthquakes	17	12	35	29	8
4. Landslides	7	6	13	12	8
5. Tornado	6	7	3	7	12
6. Red Tide	6	8	5	5	b/
7. Locust Infestation	3	2	2	b/	b/
Man Made Disasters					
1. Civil Disturbances	b/	34	25	11	4
2. Sea Mishap	b/	2	2	5	6
3. Vehicular Accidents	b/	10	11	2	12
4. Bomb/Grenade Explosion	b/	b/	8	15	8
5. Air Mishap	b/	1	b/	b/	3
6. Fire Incidents	b/	b/	161	81	143
7. Collapsed Bridge/Building/Wa	b/	b/	2	6	4

Source: Office of Civil Defense - National Disaster Coordinating Council.

<sup>a/</sup> January - November only

<sup>b/</sup> No disaster incident occurred

**TABLE 7.10**  
**TOTAL POPULATION BY AGE GROUP AND REGION**  
**1995**

Region	Age Group								
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44
NCR	1,212,530	988,009	872,438	1,019,997	1,078,267	1,011,341	810,817	678,348	521,026
CAR	168,488	165,881	148,481	141,178	116,170	105,728	88,388	78,866	57,594
Region I	480,878	472,248	458,453	400,678	321,809	296,324	256,920	230,847	186,241
Region II	340,522	335,818	309,502	269,125	215,842	201,582	181,717	164,719	127,938
Region III	902,373	842,711	782,420	750,044	658,335	618,140	514,709	445,143	351,656
Region IV	1,378,737	1,258,566	1,146,746	1,061,235	908,720	853,855	730,687	652,917	512,508
Region V	652,799	625,143	567,625	466,832	339,385	305,376	262,745	235,101	192,533
Region VI	754,283	764,436	714,855	629,778	485,495	429,965	377,816	344,891	284,606
Region VII	676,205	652,005	588,166	535,789	443,234	391,361	338,900	297,280	245,689
Region VIII	503,356	473,691	423,432	344,172	262,281	235,512	205,225	187,006	150,897
Region IX	410,304	396,583	346,531	313,701	247,410	223,382	187,979	168,095	131,427
Region X	357,263	349,231	299,219	272,565	217,264	194,546	170,886	152,953	121,343
Region XI	638,296	636,990	563,115	524,501	428,074	380,861	319,510	285,330	221,915
Region XII	334,285	335,217	295,186	274,097	215,368	195,509	159,542	145,023	110,436
CARAGA	283,654	281,599	248,844	208,679	159,933	144,368	128,528	114,155	90,154
ARMM	267,868	315,058	275,422	252,849	172,772	164,523	126,452	137,221	96,636
<b>Philippines</b>	<b>9,361,841</b>	<b>8,893,186</b>	<b>8,040,435</b>	<b>7,465,220</b>	<b>6,270,359</b>	<b>5,752,373</b>	<b>4,860,821</b>	<b>4,317,895</b>	<b>3,402,599</b>

**TABLE 7.10 (continued) ...**

Region	Age Group								Total
	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80 up	
NCR	398,036	263,980	207,958	152,527	102,632	63,667	37,061	35,406	9,454,040
CAR	46,384	34,633	30,750	25,080	18,704	12,996	8,277	7,240	1,254,838
Region I	165,723	128,833	110,372	87,088	69,335	55,706	38,776	43,659	3,803,890
Region II	100,099	74,312	67,441	51,378	36,654	26,404	16,924	16,058	2,536,035
Region III	294,487	209,081	175,106	133,792	97,680	68,426	44,032	44,435	6,932,570
Region IV	398,305	291,603	238,184	182,447	131,414	88,208	55,358	53,606	9,943,096
Region V	164,697	136,224	113,380	90,042	70,643	46,731	29,288	26,763	4,325,307
Region VI	234,218	191,427	170,140	133,504	97,318	71,551	46,689	45,966	5,776,938
Region VII	197,585	164,809	142,141	114,983	86,988	61,708	40,396	37,349	5,014,588
Region VIII	132,911	115,148	99,070	80,659	62,104	42,993	25,842	22,618	3,366,917
Region IX	101,051	79,977	63,257	48,526	32,960	20,944	11,831	10,701	2,794,659
Region X	91,666	70,704	60,535	47,030	32,332	21,476	13,031	11,228	2,483,272
Region XI	171,597	128,345	102,741	76,621	53,547	34,109	20,852	17,754	4,604,158
Region XII	86,390	62,701	49,432	36,909	24,612	15,587	8,928	10,586	2,359,808
CARAGA	72,582	60,315	50,495	38,405	25,926	16,972	9,852	8,226	1,942,687
ARMM	78,455	51,133	33,942	23,016	13,005	6,962	2,864	2,725	2,020,903
<b>Philippines</b>	<b>2,734,186</b>	<b>2,063,225</b>	<b>1,714,944</b>	<b>1,322,007</b>	<b>955,854</b>	<b>654,440</b>	<b>410,001</b>	<b>394,320</b>	<b>68,613,706</b>

Source: National Statistics Office.

Note: Excludes Filipinos in Embassies, Consulates and Missions Abroad)

TABLE 7.11a  
 NATURAL DISASTER INCIDENTS  
 1995

Disaster	Occurrence	Casualties			Affected		Houses Damaged		POP Served		Assistance (P M)			Cost of Damage (P M)		
		Dead	Injured	Missing	Families	Persons	Totally	Partially	Families	Persons	Relief	Rehab	Donation	Agriculture	Infra	Prvt Prop
1. Mt. Parker	1	34	-	23	12,381	60,853	410	287	9,199	48,237	4.012	#####	5.168	659.500	59.000	-
2. Floodings	34	86	2	9	133,530	736,900	941	1,834	12,845	64,662	5.648	-	-	356.558	229.316	0.338
3. Red Tide	5	-	-	-	11,980	56,237	-	-	-	-	-	-	-	-	-	-
4. Locust Infestation	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Landslide	13	20	5	3	522	2,191	15	-	-	-	-	-	-	-	0.092	-
6. Drought	4	-	-	-	66,665	332,953	-	-	-	-	-	-	-	562.464	-	-
7. Tornado	3	-	-	-	145	734	5	-	-	-	-	-	-	-	0.175	-
8. F& M Disease	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9. Earthquakes	35	-	-	8	67	398	-	-	-	-	-	-	-	-	26.500	-
10. Lahar Flows							Effects are incorporated with typhoons "Karing", "Helming", "Naning" & "Rosing"									
<b>Total</b>	98	140	7	43	225,290	1,190,266	1,371	2,121	22,044	112,899	9.660	#####	5.168	1,578.522	315.083	0.338

Source: Department of National Defense

**TABLE 7.11b**  
**NATURAL DISASTER INCIDENTS**  
**1996**

Disaster	Occurrences	Casualties			Affected		Houses Damaged		Cost of Damage (P M)			Total
		Dead	Injured	Missing	Families	Persons	Totally	Partially	Agriculture	Infrastructure	Private Property	
1. Typhoons	10	124	90	50	260,581	1,255,289	2,690	17,559	1,854.205	962.612	17.378	2,834.195
2. Floodings	31	20	2	6	25,671	147,987	215	1,272	139.242	87.405	26.100	252.747
3. Landslides	12	13	8	20	71	330	49	56	0.200	0.118	0.845	1.163
4. Tornado	7	1	29		66	314	41	29	0.060	0.217	0.605	0.882
5. Earthquakes	29	6			3	15			0.470	0.375		0.845
6. Red Tide	5	6	96									0.000
7. North Easterly Wind Flow	1				402	2,412						0.000
8. Wirlwind	2		7		149	734	17	21	0.091		0.352	0.443
<b>Total</b>	<b>97</b>	<b>170</b>	<b>232</b>	<b>76</b>	<b>286,943</b>	<b>1,407,081</b>	<b>3,012</b>	<b>18,937</b>	<b>1,994.268</b>	<b>1,050.727</b>	<b>45.280</b>	<b>3,090.275</b>

Source: Department of National Defense

**TABLE 7.12a**  
**NATIONAL SHELTER PROGRAM EXPENDITURE BY AGENCY**  
**1993 to 1997**  
**(In million pesos)**

<b>Agency</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997 *</b>
National Housing Authority	805.29	1,091.83	1,062.14	2,002.63	1,213.59
National Home Mortgage Finance Corporation	9,148.60	9,705.22	12,069.82	1,231.04	162.30
Home Insurance and Guaranty Corporation	4,818.19	7,453.71	10,416.46	16,729.52	11,004.85
Home Development Mutual Fund	1,954.44	3,160.02	4,094.27	14,237.27	7,747.11
<b>Total</b>	<b>16,726.52</b>	<b>21,410.78</b>	<b>27,642.69</b>	<b>34,200.46</b>	<b>20,127.85</b>

Source : Housing and Urban Development Coordinating Council.  
\* January to May only

**TABLE 7.12b**  
**NATIONAL SHELTER PROGRAM EXPENDITURE BY MAJOR PROGRAM, 1993 to 1997**  
**1993 to 1997**  
**(In million pesos)**

<b>Major Program</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997 *</b>
Resettlement	154.85	558.27	701.89	1,460.76	806.21
Community Mortgage Program	241.23	283.33	283.01	311.99	162.30
Direct Housing Provisions	10,070.16	11,398.21	14,118.40	13,522.79	7,300.13
Indirect Housing Provision	4,443.01	7,020.93	8,260.49	14,661.05	8,464.83
<b>Total</b>	14,909.25	19,260.74	23,363.79	29,956.59	16,733.47

Source : Housing and Urban Development Coordinating Council.  
 \* January to May only

**TABLE 7.13**  
**NUMBER OF HOUSEHOLDS ASSISTED IN COMMUNITY DEVELOPMENT PROGRAMS BY PROGRAM BY REGION**  
**1993 - 1997**

<b>Programs</b>	<b>NCR</b>	<b>Region I</b>	<b>Region II</b>	<b>Region III</b>	<b>Region IV</b>	<b>Region V</b>	<b>Region VI</b>	<b>Region VII</b>
<b>1993</b>								
Resettlement	2,000	--	--	823	978	600	--	--
Community Mortgage Program	3,847	--	59	2,101	1,278	246	232	537
Group Land Acquisition and Development	2,269	118	--	--	--	--	--	--
Cooperative Housing	32	--	6	--	--	5	--	159
<b>1994</b>								
Resettlement	955	--	--	280	4,365	282	1,055	571
Community Mortgage Program	4,378	88	--	1,787	2,123	--	447	196
Group Land Acquisition and Development	1,560	99	--	613	--	216	180	--
Cooperative Housing	11	--	--	--	--	10	--	--
<b>1995</b>								
Resettlement	4,967	244	--	437	540	1,723	958	3,000
Community Mortgage Program	4,196	--	--	447	1,531	--	819	411
Group Land Acquisition and Development	2,054	204	--	289	--	227	--	19
Cooperative Housing	148	30	--	56	--	--	--	--
<b>1996</b>								
Resettlement	2,743	150	658	2,566	971	971	2,026	483
Community Mortgage Program	4,254	--	424	1,550	766	--	212	1,014
Group Land Acquisition and Development	12	--	--	117	--	272	255	--
Cooperative Housing	173	89	--	--	--	--	--	--
<b>1997</b>								
Resettlement	2,696	30	--	6,737	521	559	599	386
Community Mortgage Program	4,426	258	238	1,339	5,027	457	1,170	181
Group Land Acquisition and Development	412	214	--	625	1,067	85	104	195
Cooperative Housing	6	--	--	--	--	--	--	--

TABLE 7.13 (continued) ...

Programs	Region VIII	Region IX	Region X	Region XI	Region XII	Region XIII	ARMM	Philippines
<b>1993</b>								
Resettlement	--	--	--	--	--	--	--	4,401
Community Mortgage Program	73	578	160	686	342	--	--	8,300
Group Land Acquisition and Development	--	--	--	41	--	--	--	2,387
Cooperative Housing	--	117	39	--	--	--	--	202
<b>1994</b>								
Resettlement	--	--	--	--	--	--	--	7,508
Community Mortgage Program	200	166	666	1,575	64	--	--	9,019
Group Land Acquisition and Development	--	251	--	286	--	--	--	2,668
Cooperative Housing	--	--	--	--	--	--	--	21
<b>1995</b>								
Resettlement	--	500	--	--	--	--	--	11,869
Community Mortgage Program	103	916	344	430	93	--	--	7,404
Group Land Acquisition and Development	27	117	--	461	--	--	--	2,793
Cooperative Housing	--	--	--	--	--	--	--	234
<b>1996</b>								
Resettlement	651	292	227	--	236	1,013	145	10,568
Community Mortgage Program	--	571	865	450	86	--	--	8,220
Group Land Acquisition and Development	--	213	--	397	--	--	--	656
Cooperative Housing	--	--	--	--	--	--	--	262
								0
<b>1997</b>								
Resettlement	228	682	134	1,585	414	233	22	11,528
Community Mortgage Program	--	366	192	917	20	--	--	13,096
Group Land Acquisition and Development	--	--	126	571	--	--	--	2,702
Cooperative Housing	--	--	--	159	--	--	--	6

Source: Housing and Land Use Regulatory Board.

**TABLE 7.14**  
**SUBDIVISIONS/PROJECTS INVESTIGATED FOR VIOLATIONS**  
**1994 - 1997**

<b>Performance Indicators</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>
1. No. of field and non-field investigations conducted	10,564	14,025	14,576	15,848
2. No. of violations found	3,914	6,109	4,864	4,654
3. No. of violations corrected	2,622	2,598	2,469	1,986

Source: Housing and Land Use Regulatory Board.

**TABLE 7.15**  
**HOUSEHOLDS AWARDED RESETTLEMENT AREAS BY REGION**  
**1993 to 1997**

Region	1993	1994	1995	1996	Jan - May 1997
NCR	2,000	955	5,354	2,743	185
CAR					
Region I			244	150	
Region II				658	
Region III	823	280	50	2,566	863
Region IV	978	4,365	540	971	
Region V	600	282	1,723	971	47
Region VI		1,055	958	2,026	339
Region VII		571	3,000	483	236
Region VIII				651	139
Region IX			500	292	132
Region X				227	
Region XI					272
Region XII				381	149
ARMM				1,013	30
<b>Philippines</b>	<b>4,401</b>	<b>7,508</b>	<b>12,369</b>	<b>13,132</b>	<b>2,392</b>

Source: National Housing Authority.

**TABLE 7.16**  
**PERCENTAGE OF HOUSEHOLDS WITH ACCESS TO SANITARY TOILET BY REGION**  
**1986, 1990 and 1994**

<b>Region</b>	<b>1986</b>	<b>1990</b>	<b>1994</b>
NCR		86.93	80.93
CAR		62.61	58.23
Region I	81.00	78.48	84.30
Region II	81.56	78.66	62.92*
Region III	71.44	67.83	79.16
Region IV	80.88	66.32	66.67*
Region V	55.77	60.53	58.12
Region VI	58.67	73.71	81.93
Region VII	80.55	96.20	64.61
Region VIII	61.26	64.76	68.27
Region IX	30.48	52.16	66.09
Region X	57.11	67.71	67.35
Region XI	62.49	68.76	63.53
Region XII	55.27	49.10	56.67
ARMM			63.84
<b>Philippines</b>	66.96	69.51	71.07

Source: Department of Health.  
 \* 1993 Data

**TABLE 7.17**  
**HOUSEHOLDS WITH ACCESS TO HEALTH SERVICES BY TYPE OF SERVICES RECEIVED, URBAN & RURAL**  
**1992**

Health Facility and Area	Total Households that Have used Facility	Treatment When Ill or Injured %	Routine Check-ups %	Laboratory Services %	Immunization %	Family Planning %	Health & Nutrition Education %	Prenatal Delivery and Postnatal %
<b>Urban</b>								
Any Government Hospital	1,582,158	72	57	31	16	9	10	13
Rural Health Unit	1,227,706	61	57	11	35	24	24	17
Barangay Health Station	1,257,947	51	51	67	41	28	28	19
Any Private Hosp/Clinic/Others	2,327,920	73	63	30	11	6	7	8
<b>Rural</b>								
Any Government Hospital	1,389,208	81	55	30	14	8	11	10
Rural Health Unit	1,702,816	71	58	9	33	25	30	20
Barangay Health Station	2,129,161	62	52	36	41	30	34	24
Any Private Hosp/Clinic/Others	1,594,712	82	56	25	6	3	5	5
<b>Philippines</b>								
Any Government Hospital	2,971,366	76	56	31	15	8	10	12
Rural Health Unit	2,930,522	67	57	10	34	25	28	19
Barangay Health Station	3,387,108	58	52	5	41	29	32	22
Any Private Hosp/Clinic/Others	3,922,632	77	60	28	10	5	6	7

Source: The 1992 National Health Survey.

**TABLE 7.18**  
**NATIONAL ROADS BY SURFACE TYPE**  
**1990 to 1996**  
**(In kilometers)**

Surface Type	Year						
	1990	1991	1992	1993	1994	1995	1996
Earth	208.82	225.72	215.90	216.30	214.04	128.50	352.84
Gravel	13,321.18	12,769.70	12,709.21	12,719.22	12,622.70	12,622.85	11,861.85
Asphalt	6,011.16	6,371.21	6,379.42	6,387.64	6,374.69	6,394.72	6,806.03
Concrete	6,730.87	7,055.25	7,249.90	7,270.44	7,447.33	7,574.18	8,348.65
<b>All Types</b>	26,272.03	26,421.88	26,554.43	26,593.60	26,658.76	26,720.25	27,369.37

Source: Department of Public Works and Highways.

**TABLE 7.19**  
**EXISTING BRIDGES BY CLASSIFICATION AND STANDARDS BY REGION, (Along National Roads)**  
**1995**  
(In lineal meters)

Region	Province	Permanent		Temporary		Total
		Concrete	Steel	Bailey	Timber	
NCR	Metro Manila	18,110	420			18,530
CAR	Cordillera	2,590	2,663	2,522	114	7,889
Region I	Ilocos	12,845	7,283	1,057	858	22,043
Region II	Cagayan Valley	8,657	8,548	1,026	844	19,075
Region III	Central Luzon	16,810	2,255	97	44	19,206
Region IV-A	Southern Luzon	11,491	1,924	339	699	14,453
Region IV-B	Southern Luzon (Island	9,758	2,163	2,223	2,099	16,243
Region V	Bicol	10,488	2,326	1,559	886	15,259
Region VI	Western Visayas	15,249	2,957	4,788	1,473	24,467
Region VII	Central Visayas	9,917	2,821	1,493	290	14,521
Region VIII	Eastern Visayas	18,421	3,583	2,289	4,498	28,791
Region IX	Western Mindanao	6,927	984	854	179	8,944
Region X	Northern Mindanao	8,421	825	574	805	10,625
Region XI	Southern Mindanao	9,250	1,274	2,390	452	13,366
Region XII	Central Mindanao	4,592	537	510	242	5,881
Region XIII	CARAGA	8,899	825	711	3,447	13,882
ARMM	Muslim Mindanao	2,263	326	839	165	3,593
<b>Philippines</b>	<b>Total</b>	174,688	41,674	23,271	17,095	256,728

Source: Department of Public Works and Highway.

**TABLE 7.20**  
**LIST OF DISASTER PRONE AREAS BY TYPE OF DISASTER**  
**As of December 1997**

Type of Disaster	Region	Province	Type of Disaster	Region	Province
Drought	2	Cagayan	Earthquake	4	Aurora
		Isabela			Marinduque
		Nueva Vizcaya			Mindoro
	6	Quirino		5	Albay
		Antique		6	Catanduanes
		Capiz		6	Antique
		Guimaras		8	Iloilo
	9	Iloilo		8	Eastern Samar
		Negros Occidental		9	Northern Samar
	10	Zamboanga del Norte		9	Ieyte
		Zamboanga del Sur		9	Zamboanga del Norte
	11	Bukidnon		10	Zamboanga del Sur
Misamis Oriental		10	Bukidnon		
12	Davao del Sur	11	Surigao del Norte		
	Davao Oriental	11	South Cotabato		
Earthquake	12	South Cotabato	11	Surigao del Norte	
		Maguindanao	12	Maguindanao	
	NCR	North Cotabato	12	Sultan Kudarat	
		Benguet	NCR		
	1	Ilocos Norte	10	Agusan del Norte	
		Ilocos Sur	10	Agusan del Sur	
	2	Pangasinan	11	Misamis Oriental	
		Batanes		Davao del Norte	
	3	Cagayan	Davao del Sur		
		Zambales	11	Surigao del Sur	

TABLE 7.20 (continued) ...

Type of Disaster	Region	Province	Type of Disaster	Region	Province
Flood	12	Maguindanao North Cotabato Sultan Kudarat	Typhoon	5	Albay Camarines Norte Camarines Sur Catanduanes Masbate Sorsogon
Landslide Typhoon	CAR	Benguet		6	Aklan Antique Capiz Iloilo Negros Occidental
	CAR	Benguet Mt. Province Kalinga-Apayao			7
	1	Ilocos Norte Ilocos Sur La Union Pangasinan		8	Biliran Eastern Samar Northern Samar Southern Leyte Western Samar
	2	Batanes Cagayan Isabela Nueva Vizcaya Quirino		10	Agusan del Norte Misamis Oriental Surigao del Norte
	3	Bataan Bulacan Nueva Ecija Pampanga Tarlac Zambales			
	4	Batangas Cavite Marinduque Quezon			

Source: Office of the Civil Defense - National Disaster Coordinating Council.

**TABLE 7.21**  
**INFANT MORTALITY RATE BY REGION**  
**1990 to 1995**

Region	1990	1991	1992	1993	1994	1995
NCR	45.81	43.09	40.37	37.66	34.94	32.22
CAR	63.03	61.41	59.79	58.16	56.54	54.92
Region I	55.64	53.65	51.66	49.68	47.69	45.70
Region II	61.65	60.06	58.47	56.88	55.29	53.70
Region III	44.75	43.89	43.02	42.16	41.29	40.43
Region IV	53.19	51.53	49.87	48.21	46.55	44.89
Region V	63.69	62.61	61.53	60.44	59.36	58.28
Region VI	60.84	59.71	58.58	57.45	56.32	55.19
Region VII	55.19	53.62	52.05	50.48	48.91	47.34
Region VIII	76.29	73.90	71.51	69.12	66.73	64.34
Region IX	63.59	62.58	61.57	60.57	59.56	58.55
Region X	57.38	56.64	55.90	55.15	54.41	53.67
Region XI	55.75	54.97	54.18	53.40	52.61	51.83
Region XII	56.50	55.90	55.31	54.71	54.12	53.52
ARMM	74.09	71.96	69.83	67.69	65.56	63.43
<b>Philippines</b>	56.69	55.14	53.59	52.03	50.48	48.93

Source: NSCB Technical Working Group on Maternal and Child Mortality.

**TABLE 7.22**  
**UNEMPLOYMENT RATE BY REGION**  
**1990 to 1996**  
**(In percent)**

Region	1990	1991	1992	1993	1994	1995	1996
NCR	14.1	15.4	15.7	16.1	16.2	15.8	11.6
CAR	3.8	4.5	5.0	5.3	5.2	6.2	6.9
Region I	7.4	7.8	6.9	8.9	6.7	7.7	6.2
Region II	4.7	7.7	5.8	4.0	4.6	2.7	2.9
Region III	9.9	11.8	12.1	12.3	11.3	9.0	8.7
Region IV	8.7	10.4	8.4	8.5	8.9	9.0	7.1
Region V	5.6	5.9	5.6	5.3	4.2	6.6	6.5
Region VI	7.7	7.3	8.0	7.7	7.4	8.9	7.6
Region VII	7.4	7.7	7.9	8.6	8.9	8.9	8.3
Region VIII	5.9	5.8	6.7	5.7	5.9	5.9	7.8
Region IX	5.9	6.1	5.8	6.6	5.7	6.6	4.6
Region X	7.3	7.7	5.9	8.3	7.2	5.5	5.6
Region XI	7.7	8.5	9.5	8.6	7.9	7.2	6.9
Region XII	4.5	6.9	4.7	6.4	4.2	5.3	5.2
CARAGA	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	7.0
ARMM	<i>a</i>	1.8	1.9	3.1	1.7	0.6	2.6
<b>Philippines</b>	8.1	9.0	8.6	8.9	8.4	8.4	7.4

Source : National Statistics Office

*a* The Autonomous Region for Muslim Mindanao (ARMM) was formally recognized as a separate region in 1990. ARMM is composed of the following provinces: Lanao del Sur (excluding Marawi City), Sulu, Tawi-tawi and Maguindanao Provinces (excluding Cotabato City). Generation of data for ARMM started only in 1992.

*b* The CARAGA Administrative Region was formally recognized as a separate region in 1995. CARAGA is composed of the provinces of Agusan del Norte, Agusan del Sur, Surigao del Norte and the cities of Butuan and Surigao.