

JAPAN INTERNATIONAL COOPERATION AGENCY

DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT
THE REPUBLIC OF THE PHILIPPINES

**THE STUDY ON THE
PROVINCIAL WATER SUPPLY, SEWERAGE AND
SANITATION SECTOR PLAN
IN
THE REPUBLIC OF THE PHILIPPINES**

VOLUME III - [5]

DATA REPORT

**PROVINCIAL WATER SUPPLY, SEWERAGE AND
SANITATION SECTOR PLAN
FOR THE PROVINCE OF**

SAMAR



DECEMBER 1999

NIPPON JOGESUDO SEIKI CO., LTD.

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VOLUME III DATA REPORT

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PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLAN

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1. INTRODUCTION

1.3 The Provincial Plan for the Province of Samar

1.3.2 Outline of the Report

Table 1.3.1 List of Collected Reports and Documents

No.	Title	Year	Source	G	C	R	P	M	B
I. GENERAL									
1.	The Philippine National Development Plan Program Master Planning	1998	NEDA		■				
2.	Report and Recommendation of the President to the Board of Directors on Proposed Loans to the Republic of the Philippines for the Rural Water Supply and Sanitation Sector Project	May 1996	ADB		■				
3.	Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of the Philippines for the Regional Municipal Development Project	Aug. 1995	ADB		■				
4.	Long Term and Medium Term Sector Dev't. Planning Workshop No. 2	1998	DILG						
5.	Philippine Agenda - A National Agenda for Sustainable Development for the 21st Century	1997	PCSD		■				
6.	Updated Medium-Term Philippine Development Plan 1996 - 1998	Dec. 1995	NEDA		■				
7.	Water Supply, Sewerage and Sanitation Master Plan of the Philippines 1988 - 2000	1988	NEDA		■				
8.	Catalogue Products and Services	1993	NAMRIA		■				
9.	The Philippines in 1995: Our Time Has Come	June 1995	OP		■				
10.	Australian Development Corporation with the Philippines - Philippine Program Profile (Section C.3)	July 1997	LGU						
11.	Social Reform Agenda Policy Directives		Social Reform Council Secretariat		■				
II. SOCIO-ECONOMIC									
1.	Socio-Economic Profile (Samar)		PPDO				■		
2.	Census-Based National and Regional Population Projection Volume 1	1995	NSO		■				
3.	Report No. 1-P: Population by Province, City/ Municipality and Barangay Region VIII 1995 Census	1995	NSO			■			
4.	Report No. 2-87P: Socio Economic and Demographic Characteristics Samar 1995 Census	June-05	NSO				■		
5.	Philippine Statistical Yearbook	1997	NSCB		■				
6.	NSO Census by Province, Male, Female and Age Bracket	1995	NSO			■			

No.	Title	Year	Source	G	C	R	P	M	B
7.	Geographic Coding and Urban and Rural Classification (Region VIII)	1990	NSO			■			
8.	Total Population, Household Population and Number of Households by Province, City/ Municipality and Barangay	1995	NSO		■				
III. WATER SOURCE									
1.	Master Plan Study on Water Resources Management in Republic of the Philippines Vol. I	Jan. 1998	NWRB		■				
2.	Master Plan Study on Water Resources Management in Republic of the Philippines Vol. II	Jan. 1998	NWRB		■				
3.	Philippine Water Resources Data Volume II Streamflow and Lake or River Stage	Jan. 1980	NWRC		■				
4.	Philippine Water Resources Data Volume II Streamflow and Lake or River Stage	June 1991	DPWH-BRS		■				
5.	Master Plan Study on Water Resources Management in the Republic of the Philippines	July 1997	NWRB		■				
6.	Topographic Maps 1:250,000 Samar	Reprinted in 91, 93 and 96	NAMRIA				■		
7.	Rapid Assessment of Water Supply Sources Samar	1982	NWRB				■		
8.	Groundwater Resources Investigation Report Samar	Unpublished	NWRB				■		
9.	Water Resources Summary Data (Volume I and 2)	1970	NWRB		■				
10.	Individual Well Inventory Samar	1990	NWRB				■		
11.	Groundwater of the Philippines	June 1980	NWRC		■				
12.	LWUA Water District Database	1997	LWUA		■				
13.	Road Network Map						■		
14.	Well Inventory		NWRB		■				
15.	Well Inventory	1998	DPWH-DEO				■		
16.	Well Drilling Record	1998	DPWH-DEO				■		
IV. WATER SUPPLY									
1.	Assessment of the Domestic WS and Sanitation Sector of Eastern Visayas	April-98	NEDA/UNIFEC			■			
2.	Technical Assistance to the Republic of the Philippines for the Water Supply and Sanitation Sector and Study	July 1997	ADB		■				
3.	Working Group on Urbanization (WG/U) of the Water Supply and Sanitation Collaborative Council (WSSC)	Sept. 1993	WSSC-WG/U	■					
4.	Water Supply Feasibility Study Methodology Manual (LWUA-Mala Columbus)	1996	LWUA		■				

No.	Title	Year	Source	G	C	R	P	M	B
5.	Overview of Water Pricing Policies and Structures in the ESCAP Region	1996	UN						
6.	Report and Recommendation of the President to Board of Directors on a Proposed Loan to the LWUA in the Republic of the Philippines for the Small Towns Water Supply Sector Project	Sept. 1996	ADB		■				
V. ENVIRONMENTAL SANITATION									
1.	Trainer's Training Kits for Sanitation	Mar. 1996	UNDP/DILG		■				
2.	Ecological Alternatives in Sanitation	Aug. 1997	SIDA	■					
3.	The Code Sanitation of the Philippines	1976	DOH		■				
VI. INSTITUTIONAL									
1.	General Primer - Local Government Code of 1991	1991	DILG		■				
2.	The Barangay and the Local Government Code	1994	DILG		■				
3.	NEDA Board Resolution No. 4 (S. 1994)	1994	NEDA		■				
4.	Implementing Rules and Regulations of NEDA Board Resolution No. 4 (S. 1994), Clause (G)	Nov. 1997	NEDA		■				
5.	NEDA Board Resolution No. 5, S-94	1994	NEDA		■				
6.	NEDA Board Resolution No. 5, S-96	1996	NEDA		■				
7.	NEDA Board Resolution No. 5, S-89	1989	NEDA		■				
VII. COMMUNITY DEVELOPMENT									
1.	Community Development Manual First Water Supply, Sewerage and Sanitation Sectors Projects (FW4SP)		DPWH/DILG/ LWUA/DOH		■				
2.	BWSA Formulation Operations Manual Community Development Manual First Water Supply, Sewerage and Sanitation Sectors Projects (FW4SP)		DPWH/DILG/ LWUA/DOH		■				
3.	Institution Building for Decentralized Implementation of Community-Managed Water Supply and Sanitation Projects		DILG		■				
4.	Institution Building for Decentralized Implementation of Community-Managed Water Supply and Sanitation Projects	June 1997	DILG		■				
5.	Guidebook for Community Managed WATSAN Project		UNDP		■				
6.	A Manual for Training Trainers in Participatory Techniques	1990	PROWESS/ UNDP		■				
7.	Interception Report for Special Assistance for Projects Sustainability for the Rural Water Supply III Project	1997	SAPS Team		■				
8.	Interim Report for Special Assistance for Projects Sustainability for the Rural Water Supply III Project (SAPS)	1997	SAPS Team		■				

No.	Title	Year	Source	G	C	R	P	M	B
9.	Participatory Action Planning for the Development of Two PSF Project	1994	UP						
10.	Water and Sanitation for All: A World Priority Achievements and Challenges	1995	IRC International Water & Social Center		■				
11.	Community Organizers' Manual, Part I	1990	CSWCD-UP/DCD/DOPI						
12.	A Handbook on Community Development	1975	UP		■				
13.	Achieving Success in Community Water Supply and Sanitation Projects		UNDP	■					
14.	Handbook on Community Organizing for Water Sanitation		DILG		■				
15.	Draft Final Report for Special Assistance for Projects Sustainability for the Rural Water Supply III Project	Feb. 1997	SAPS Team		■				
16.	A Manual on Community Participation in Water Supply and Sanitation (RWSSP)				■				
17.	Achieving Success in Community Water Supply and Sanitation Projects	1980	WHO	■					
18.	Community Development Manual	Nov. 1995	PIC		■				
VIII. GENDER									
1.	Sourcebook for Gender Issues at the Policies Level in the Water and Sanitation Sector	Oct. 1996	IBRD/WB	■					
2.	Gender Issues Sourcebook for Water and Sanitation Projects	Jan. 1995	IBRD/WB	■					
3.	Toolkit on Gender in Water and Sanitation Series No. 2	Aug. 1996	UNDP	■					
4.	Domestic Shallow Well Water Supplies the Family Handpump Scenario	Feb. 1990	UNDP	■					
5.	United Nations Decade for Women	1976-1985		■					
6.	Gender Mainstreaming		NCRFW		■				
7.	Regional Memorandums	Feb. 1997	DILG			■			
8.	Philippine Plan for Gender Development	1995-2025	NCRFW		■				
9.	Philippine Country Report on Women	Sept. 1995	NCRFW		■				
10.	A Primer on the GAD Focal Point	1996	NCRFW		■				
IX. FINANCIAL									
1.	Annual Investment Plans, Samar		PPDO				■		
2.	Family Income and Expenditures Survey Vol. I	1994	NSO		■				
3.	Family Income and Expenditures Survey Vol. II	1994	NSO		■				
4.	DILG Memorandum Circular 96-263	1996	DILG		■				
5.	Presidential Decree 1914 (MDF)	1984	OP		■				

No.	Title	Year	Source	G	C	R	P	M	B
6	Joint Circular No. 6-87	Aug. 1987	DBM		■				
7	Leyte Accomplishment Reports, 1993-1996	1993-1996	PPDO				■		
8	Statement of Income-Expenditures of Municipalities		PPDO					■	

Legend:

- | | |
|--|---|
| ADB - Asian Development Bank | PIC - Project Implementation Consultants |
| BRC - Bureau of Research and Standards | PPDO - Provincial Planning and Development Office |
| CSWCD - College of Social Work and Community Development | PROWESS - Promotion of the Role of Women in Water, Environmental and Sanitation Sources |
| DCD - Department of Community Development | SIDA - Swedish International Development Cooperation Agency |
| DEO - District Engineer Office | UN - United Nations |
| DILG - Department of Interior and Local Government | UNICEF - United Nations International Children's Fund |
| DOH - Department of Health | UNDP - United Nations Development Project |
| DOPI - Development Options Philippines, Inc | UP - University of the Philippines |
| DPWH - Department of Works and Highways | WATSAN - Water and Sanitation |
| IBRD - International Bank for Reconstruction and Development | WB - World Bank |
| LGU - Local Government Unit | WHO - World Health Organization |
| LWUA - Local Water Utilities Administration | WSSC-WG/U - Water Supply & Sanitation Collaborative Council-Working Group on Urbanization |
| NAMRIA - National Mapping & Resource Information Authority | G - Global |
| NCRFW - National Commission in the Role of Filipino Women | C - Central Government Level |
| NEDA - National Economic Development Authority | R - Regional Government Level |
| NSCB - National Statistical Coordination Board | P - Provincial Level |
| NSO - National Statistics Office | M - Municipal Level |
| NWRB - National Water Resource Bureau | B - Barangay Level |
| NWRC - National Water Resource Council | |
| OP - Office of the President | |
| PCSD - Philippine Counsel for Sustainable Development | |

1.4 Acknowledgement

Table 1.4.1 List of Persons and Institutions Who Participated in the Preparation of PW4SP

Name	Position	Office
<i>Provincial Sector Planning Team:</i>		
1. Mr. Arthur B. Cuenco	Provincial Planning & Dev't. Coordinator	Provincial Planning & Dev't. Office
2. Mr. Abdon D. Abejo	Asst. Prov'l. Planning & Dev't. Coordinator	Provincial Planning & Dev't. Office
3. Mr. Enrique R. Cobreros	Project Development Officer IV	Provincial Planning & Dev't. Office
4. Mr. Godofredo M. Raquel	Planning Officer II	Provincial Planning & Dev't. Office
5. Ms. Virginia A. Hilvano	Planning Officer II	Provincial Planning & Dev't. Office
6. Mr. Leo R. de Guzman	Asst. Waterworks Engineer	Provincial Engineer's Office
7. Mr. Ricomar T. Encarnarez	Sanitary Engineer	Provincial Health Office
8. Mr. Francisco B. Cagomoc	Provincial Staff	DILG, Samar
<i>Water Supply and Sanitation - Project Management Office:</i>		
1. Ms. Ellen I. Pascua	Program Manager	WSS-PMO, DILG
2. Mr. Rogelio B. Ocampo	Chief, Planning Division	- do -
3. Ms. Fe Crisilla M. Banluta	PW4SP Project Officer	- do -
4. Ms. Crisanta R. Rapirap	Area Coordinator	- do -

2. PLANNING APPROACH FOR FUTURE SECTOR DEVELOPMENT

2.6 Planning Principles and Data Management

2.6.1 Planning Principles

B-4 Composition of Figures and Tables by Chapter/Section

Table of Contents	Contents	Tables & Figures		
		Main Report	Supporting Report	Data Report
1. INTRODUCTION				
1.1 Sector Development in the Philippines	Nationwide sector development			
1.2 Provincial Sector Planning	Outline of provincial sector planning			
1.2.1 Objectives of Sector Planning				
1.2.2 Scope of Sector Planning				
1.2.3 Financing of Sector Plan				
1.3 The Provincial Plan for the Province	Planning process and contents of the provincial plan	F1.3.1 Flow Diagram of Sector Planning	F1.3.1 Organization Chart for Implementation of PW4SP	F1.3.1 List of Report/Data/Information/Materials Collected
1.3.1 Preparation of the Plan				T1.4.1 List of Persons and Institutions who Participated in the
1.3.2 Outline of the Report				
1.4 Acknowledgments	Persons/Institutions responsible in the plan preparation			
2. PLANNING APPROACH FOR FUTURE SECTOR DEVELOPMENT				
2.1 General				
2.2 Planning Framework	- Sector Arrangements with Reference to National Master Plan and Medium-Term Development Plan	T2.2.1 National Sector Coverage Targets		

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* Questionnaire form

Table of Contents		Tables & Figures		
		Main Report	Supporting Report	Data Report
Contents				
3.3.3 Education	(2) Discussion of public facilities and services (schools, public markets, banks and hospitals) by municipality Description of (a) education levels and (b) literacy level	F3.3.3 Population Distribution by Highest Education Attainment	T3.3.3 Household Population by Highest Educational Attainment	
3.4 Population				
3.4.1 Previous Population Development	(1) Population data of NSO for the census periods from 1960 to 1990 together with projected (1995) population (2) Special issues, if any, which affected the present population of the province, i.e., special development and those of resettlement/evacuation.	T3.4.1 Previous Population Development by Municipality F3.4.1 Previous Population Development of the Province		
3.4.2 Classification of Urban and Rural Areas	(1) Urban and rural areas classified at barangay level based on the definition of NSO (2) Re-classification of urban and rural areas based on actual condition by PSPT	F3.4.2 Present Population Distribution T3.4.2 Outline of Urban and Rural Areas in the Province	F3.4.1 Location Map of Urban Areas	
3.4.3 Present Population Distribution	(1) No. of barangays, households & population, household size by urban and rural area	T3.4.3 Household Numbers and Household Sizes		
3.5 Health Status				
3.5.1 Morbidity, Mortality and Infant Mortality	- Ten leading causes of morbidity, mortality and infant mortality and comparison with national level - Identification and rank of diseases related to water among the 10 leading causes	T3.5.1 Number and Rates of Ten Leading Causes of Morbidity, Mortality and Infant Mortality		T3.5.1 Morbidity, Mortality and Infant Mortality

* Questionnaire form
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Table of Contents		Tables & Figures			
Contents		Main Report	Supporting Report	Data Report	
3.5.2	Water Related Diseases	<ul style="list-style-type: none"> - Classification of water-borne, based, washed, vector related diseases - Enumeration of water related diseases and their incidence - Discussion on the health implications of sanitation 	T3.5.2	Reported Cases and Deaths of Notifiable Water Related Diseases, (Year)	
3.5.3	Health Facilities and Practitioners	<ul style="list-style-type: none"> - No. of medical facilities and practitioners, its ratio to population and comparison with national level 	T3.5.1	Number and Ratio to Population of Health Facilities and Medical Practitioners	
3.6	Environmental Conditions				
3.6.1	General	<ul style="list-style-type: none"> - Scope of the subject limited to the sector 			
3.6.2	Water Pollution	<ul style="list-style-type: none"> - Evaluation of existing drainage system, its function as a disposal point of domestic wastewater - Evaluation of industrial wastewater discharge - Existing classification of rivers in terms of water quality and extent of water pollution of water bodies 	T3.6.1	DENR Water Quality Criteria/Water Usage and Classification for Fresh Water	
3.6.3	Solid Waste Disposal	<ul style="list-style-type: none"> - Evaluation of solid waste collection and disposal 	T3.6.1	Municipal Solid Waste Collection and Disposal and Service Coverage	T3.6.1 Municipal Solid Waste Collection and Disposal by Municipality
4.	EXISTING FACILITIES AND SERVICE COVERAGE				
4.1	Water Supply				
4.1.1	General	(1) Types and composition of existing water supply facilities by service level			

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* Questionnaire form

Table of Contents		Contents	Main Report	Supporting Report	Data Report
4.1.2	Types of Facilities and Definition of Service Level Standard	(2) Survey results compiled from questionnaire by service level shall be arranged to urban and rural areas at municipal level (3) Service coverage shall be counted as percentage of population served by the existing facilities. Further classification by safe and unsafe sources together with adequacy of service are incorporated in the service coverage			
4.1.3	Level III Systems	(1) Adequacy of service defined by DOH	T4.1.1 Composition of Water System/Facility by Service Level		
4.1.4	Level II Systems	(1) Description of existing Level III system: - No. of WD & Level III (being operated by LGUs) - Type of major water sources - Range of water consumption - Problems and countermeasures (2) Operating conditions of WDs: - Range of service (No. of connection) - Range of charge collection efficiency - Problems and countermeasures (1) Description of existing Level II system - No. of operating Level II systems - Type of major water source - Range of household coverage (2) Operating conditions: - Water supply interruption - Water quality - Collection efficiency - Other problems and countermeasures	T4.1.2 Information on Existing Level III Systems T4.1.3 Information on Water Districts T4.1.4 Information on Existing Level II Systems	T4.1.1 Details on Existing Level III Systems T4.1.2 Details of Existing Level II Systems	List of Subdivisions by Municipality

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* Questionnaire form

Table of Contents		Contents	Main Report	Supporting Report	Data Report
4.1.5	Level I Facilities	<ul style="list-style-type: none"> (1) Description of existing Level I facilities: <ul style="list-style-type: none"> - No. of operational and non-operational facilities - Safe and unsafe sources - Ownership by public and private (2) Problem areas: <ul style="list-style-type: none"> - Needs for rehabilitation and replacement of existing facilities (1) Criteria of adequate service based on the national standard (2) Service coverage (percent of population served by safe sources) in urban and rural areas by municipality (3) On-going projects by municipality 	<p>T4.1.5 Information on Existing Level I Facilities</p> <p>T4.1.6 Operating Status of Existing Wells in the Province</p>	<p>T4.1.3 Results of Water Quality Examination of Shallow Wells</p> <p>T4.1.4(a) No. of Level I Facilities by Safe and Unsafe Classification</p> <p>T4.1.4(b) Public and Private Level I Facilities for Rural Water Supply</p> <p>T4.1.5 Estimation of Unserved Population by Municipality</p> <p>T4.1.6(a) Estimation of Population Covered by Safe and Unsafe Source by Municipality</p> <p>T4.1.6(b) Estimation of Population Covered by Safe and Unsafe Source by Municipality</p>	
4.1.6	Water Supply Service Coverage		<p>T4.1.7 Water Supply Service Coverage by Municipality</p>		
4.2	Sanitation and Sewerage				
4.2.1	General	<ul style="list-style-type: none"> - Brief discussion of government policies/guidelines on sanitation and sewerage as spelled out in the Code of Sanitation and NUSSMP - Coverage of the PW4SP (HH, school toilets and public toilets) 			
4.2.2	Types of Facilities and Definition of Service Level Standard	<ul style="list-style-type: none"> - DOH/DECS classification by service level - Types of toilet facilities considered as sanitary and unsanitary in this sector plan - Definition of served and unserved/unserved 	<p>F4.2.1 Standard Structure of Private Toilet Facility</p> <p>F4.2.2 Standard Structure of School Toilet Facility</p>		

* Questionnaire form
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Table of Contents		Contents	Main Report	Supporting Report	Data Report
4.2.3	Sanitation Facilities and Service Coverage (1) Household Toilets	<ul style="list-style-type: none"> - No. of Households with sanitary toilet facilities and underserved, by municipality - Service coverage (percent of household with sanitary toilet facilities and underserved/underserved in urban and rural area, by municipality) - Problems and countermeasures 	<p>T4.2.1 Sanitation Facilities and Service Coverage of Household Toilets, Urban and Rural</p> <p>F4.2.1 Provincial Service Coverage of Household Toilet Facilities</p>	<p>T4.2.1 Sanitation Facilities and Service Coverage of Household Toilets, by Type, by Municipality, Urban and Rural</p>	<p>T4.2.1 Number of Household Toilets by Type</p> <p>T4.2.2 Number of School Toilets by Public and Private Class.</p> <p>T4.2.3 Number of Public Toilets by Type of Facility</p>
	(2) School and Public Toilets	<ul style="list-style-type: none"> - No. of school and public toilets by municipality - Service coverage (percent of students adequately served by sanitary facilities and percent of public utilities with sanitary facilities) - Problems and countermeasures 	<p>T4.2.2 School Toilet Facilities and Service Coverage</p> <p>T4.2.3 Public Toilet Facilities and Service Coverage</p>	<p>T4.2.2 Number of Student and School Toilet Facilities by Municipality</p> <p>T4.2.3 Number of Public Toilet Facilities</p>	
	(3) On-going Projects	<ul style="list-style-type: none"> - On-going projects by municipality (service coverage) 			
4.2.4	Sewerage Facilities	<ul style="list-style-type: none"> - Presence/absence of sewerage facilities. If none, description of existing condition on sewage disposal - If present, description of sewerage system 			

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* Questionnaire form

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5. EXISTING SECTOR ARRANGEMENTS AND INSTITUTIONAL CAPACITY			
5.1 General			
5.2 Sector Reforms	<ul style="list-style-type: none"> - NEDA Board Resolution No. 4 - NEDA Board Resolution No. 5 		
5.3 Sector Institutions	<ul style="list-style-type: none"> - Existing Institutional Arrangements - Sector Financing 	F5.3.1 Functional Relationships	
5.4 Sector Agencies at the National Level	<ul style="list-style-type: none"> (To be discussed for each of the major agencies) - Existing mechanisms and processes to deliver or support services to provinces, municipalities and barangays (financial, technical and institutional) - Mechanisms for coordination and collaboration with LGUs - Existing capacity of national agency to implement sector projects (technical, financial, institutional) - Actual programs being implemented by national sector agencies focusing on transfer of appropriate technologies and approaches - Actual experiences and practices of national agency in project implementation - Problem areas 		
	<ul style="list-style-type: none"> (5) Other Agencies (NEDA, DOF, NWRB, DBM, DENR, DECS, MWSS) 		

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(2) Bilateral Agencies	<ul style="list-style-type: none"> - The Japan International Cooperation Agency (JICA) - The Overseas Economic Cooperation Fund (OECF) - The Australian International Development Assistance Bureau (AIDAB) - The Danish International Agency (DANIDA) - KfW - The Royal Government of the Netherlands 				
(3) NGOs and Private Sector					
5.7 Project Management Arrangements					
5.7.1 Technical Aspect		- Technical considerations applied to project management		TS.7.1 Matrix of Current Practices and Issues from Rapid Assessment of Subject Provinces and Local Offices	
5.7.2 Institutional Aspect		- Linkages, health & hygiene education and training programs, user's O&M		TS.7.2 Offices/Agencies Involved in WATSAN Projects	
5.7.3 Financial Aspect		- Budgetary allocation to sector, access to external funds, cost recovery			
5.7.4 Institutional Arrangements/ Capability of the Municipal Government		Manner & experiences in project implementation			
5.8 Current Community Development and Training Approaches					
5.8.1 General		- Actual experiences and practices of sector agencies			

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5.8.2	Provincial CD Structure/ Linkages for Sector Projects	- Organization and training of project implementors	
5.8.3	Assignment of CD Specialist to Sector Projects	- Staffing situation (quality and quantity)	
5.8.4	Training on CD	- Existing training programs of sector agencies and mechanisms for implementation (technical and management training)	
5.8.5	Utilization of NGOs	- Involvement of NGOs in sector activities	TS.8.1
5.8.6	Existing Community Development Processes	- Existing CD approaches to promote participation of local beneficiaries - Experiences/practices on participation of project beneficiaries	List of NGOs/CBOs for the Province
5.8.7	IEC as Foundation for Community Development	- Available IEC materials, manner of dissemination and contents	
5.8.8	Health and Hygiene Education	- Existing health/hygiene education programs of sector agencies and mechanisms for implementation	
5.9	Gender Aspect		
5.9.1	General	- Sources of information	
5.9.2	The Evolution of Gender and Development	- Evolvement of gender policies at national level	
5.9.3	The LGUs and Gender	- Experiences of LGUs in implementing gender sensitive projects	

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5.9.4	Gender in WATSAN Sector Projects	- Gender participation in sector projects			
5.10	Existing Project and Sector Monitoring (1) National Level (2) Local Level	- Sector and project monitoring	FS.3.2 Participatory Monitoring Feedforward and Feedback Management Mechanism		
6.	PAST FINANCIAL PERFORMANCE IN WATER SUPPLY AND SANITATION				
6.1	General	- Basic idea and brief contents of this chapter			
6.2	LGUs Past Financial Performance				
6.2.1	Sources and Uses of Funds	- IRA, local tax revenues, non-tax revenues, actual expenditures	T6.2.1 Income and Expenditures F6.2.1 Income and Expenditures	T6.2.1 Income and Expenditures	
6.2.2	Availability of Funds	- Role of past IRA in the provincial finance (profile of sector investment to allotted IRA in the province)	T6.2.2 Past Internal Revenue Allotment to the Province from Central Government	T6.2.2 Past Internal Revenue Allotment to the Province from Central Government	
6.2.3	Financial Indicators	- Debt servicing capability of province			
6.3	Past Public Investment and Present Plans				

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6.3.1	Past and Current Investment Plans	- Study on the previous and current public investment to the province by concerned agencies	T6.3.1 Actual Amount of Sector Investment to the Province by Agency T6.3.2 Annual Investment Plan T6.3.3 Sector Allocation in the Annual Investment Plan		
6.3.2	Past and Current Breakdown of 20% Development Fund	- Allocation of 20% development fund	T6.3.4 Allocation of 20% Development Fund F6.3.4 Allocation of 20% Development Fund		
6.3.3	Existing Plans of the LGUs for the Sector	- Financial arrangement by the province to the sector and activities undertaken to achieve the objectives			
6.4	LGUs Present Financing Sources and Management Participation in the Sector				
6.4.1	Cost Sharing Arrangements/Counterpart Funding	- Study on cost sharing arrangements by the different agencies involved by water service level and sanitation			
6.4.2	ODA Assisted Projects and Grant Aid	- External sources of funds for the sector and arrangements			
6.4.3	LGU-Financed and Managed Waterworks/Water Districts	- Study on past financial performance of WDs/Waterworks	T6.5.1 Financial Indicators of Prov'l/Mun. Waterworks T6.5.2 Loan Status of Water Districts		
6.5	Existing Practices by the LGU on Cost Recovery				

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6.5.1	Capital Cost	- Sources and arrangements by service level and sanitation			
6.5.2	Operation and Maintenance Cost	- Sources and arrangements by service level and sanitation			
6.6	Affordability of Users	- Affordability of water rates by service level and sanitation costs by users comparing income level	T6.6.1	Affordability in Water Supply	
6.6.1	Capital Cost Contribution	- Sources and arrangements by service level and sanitation			
6.6.2	Operation and Maintenance Cost	- Sources and arrangements by service level and sanitation			
7.	WATER SOURCE DEVELOPMENT				
7.1	General				
	(1) Approach and Outputs	<ul style="list-style-type: none"> - Available water sources and their application to suit the locality - Study approach with justification focusing on groundwater - Water Availability Map & standard well specification 			
	(2) Basic Data/Report with Conditions	<ul style="list-style-type: none"> - Major reports and hydrogeological maps used as basis of the study (with conditions and limitations) - Effective data to supplement the base materials 			

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		Main Report	Supporting Report	Data Report
(3) Utilization and Updating	- Manner of out-put in PW4SP - Updating methods clarifying what factors can be modified and updated			
(4) Existing Water Sources in the Province	- Description of existing water sources in the province	T7.1.1 Existing Groundwater Sources in the Province		T7.1.1 Water Sources Information T7.1.2 Major References
7.2 Geology	- Classification of geologic rock units (3 types: Recent, Pliocene to Pleistocene, Pleistocene and Old rock units) - Distribution of each rock units and their proportion by municipality - Hydrogeological characteristics of each units	F7.2.1 Geological Map		
7.3 Groundwater Sources				
7.3.1 Classification of Groundwater Sources	- Definition and classification of groundwater sources - shallow well area (with high yield area) - deep well area (with high yield area) - difficult area	F7.3.1 Groundwater Availability Map		T7.3.1 Well Inventory by Municipality
7.3.2 Groundwater Availability in the Province	- Shallow well distribution - Technical information of shallow well (Depth, SWL, SPC-CP)		F7.3.1 Work Flow of Groundwater Availability Map F7.3.2 Area Category by Groundwater Utilization	

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(2) Deep Well Area	<ul style="list-style-type: none"> - Deep well distribution - Technical information of deep well (Depth, SWL, SPC-CP) 				
(3) Difficult Area	<ul style="list-style-type: none"> - Distribution and proportion of difficult areas - Geological & Topographical characteristics of the area 				
7.3.3 Groundwater Quality	<ul style="list-style-type: none"> - Possible area of salt water intrusion - Iron & Manganese problem area 				T7.3.2 Groundwater Quality
7.4 Spring Sources	<ul style="list-style-type: none"> - Distribution of spring sources - Technical information 			T7.4.1 Existing Spring Sources by Municipality	
7.5 Surface Water Sources	<ul style="list-style-type: none"> - Major rivers in the province - Typical feature of the river both in quality and flow 			F7.5.1 River Network Map T7.5.1 Gauging Station and River Water Use by Major River Basin F7.5.2 River Flow Duration Curve T7.5.2 Probability of Surface Water	T7.5.1 Surface Water Sources
7.6 Future Development Potential of Water Sources	<ul style="list-style-type: none"> - Potential water sources in each municipality (especially for rural area) with standard specifications by well type (shallow well, deep well, and spring) 		T7.6.1 Groundwater Development Potential in the Province	T7.6.1 Existing Well Sources T7.6.2 Hydrogeological Description by Municipality T7.6.3 Proportion of Gravel Packed and Natural Gravel Packed Wells T7.6.4 Untapped Spring Identification	F7.6.1 Individual Well Location and Specifications Map

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7.7	Water Source Development for Medium-Term Development Plan			
7.7.1	Detailed Groundwater Investigation Required	T7.7.1 Standard Specifications of Wells by Municipality		
7.7.2	Spacing Allocation for Level II and III Wells	T7.7.2 Detailed Groundwater Investigation Report	T7.7.1 Spacing Arrangements for Planned Wells	
8.	FUTURE REQUIREMENTS IN WATER SUPPLY AND SANITATION IMPROVEMENT			
8.1	General			
	(1) Physical targets			
	- Provincial sector targets in context of the National Sector Master Plan and the National Medium-Term Development Plan			
	- Population to be served by target year based on the NSO population projection and broken down to urban and rural areas at municipal level by sub-sector			
	- Public school students to be served by target year based on projected school enrollment at municipal level			
	- Projected number of public utilities with sanitary toilets by target year at municipal level			
	(2) Physical requirements			
	- Required facilities classified by urban and rural areas by sub-sector with implementation criteria			

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			Main Report	Supporting Report	Data Report
8.2	Targets of Provincial Sector Plan	<ul style="list-style-type: none"> - Equipment for construction, rehabilitation and O&M be identified (3) Identification of priority projects <ul style="list-style-type: none"> - Criteria for identifying priority projects - Priority projects by sub-sector (1) Percentages of beneficiaries or utilities to be served as target indicator (2) Setting up of provincial sector targets by sub-sector <ul style="list-style-type: none"> - Water supply - Sanitation - Sewerage - Solid waste 	<p>T8.2.1 Provincial Sector Targets</p> <p>T8.2.2 Base Year Service Coverage of Water Supply</p> <p>T8.2.3 Base Year Service Coverage of Household Toilets</p> <p>T8.2.4 Base Year Service Coverage of Public School Toilets and Public Toilets</p> <p>T8.2.5 Base Year Service Coverage of Municipal Solid Waste System</p>	<p>T8.2.1 Estimation of Base Year Service Coverage of Water Supply</p> <p>T8.2.2 Population Coverage in Phase I Provided by Served Population in the Base Year (Water Supply)</p> <p>T8.2.3 Number of Households Served by Sanitary Toilets in the Base Year</p> <p>T8.2.4 Number of Public School Students Served by School Toilets in the Base Year</p> <p>T8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year</p> <p>T8.2.6 Household Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets)</p>	

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8.3	Projection of Frame Values			
8.3.1	Population Projection			
	<p>(1) Methodology for population projection by urban and rural areas by municipality</p> <ul style="list-style-type: none"> - Base figures and conditions: 1995 population census and future population by urban and rural areas by municipality by target year as projected by NSO - Review/verify past population development characteristics by urban and rural areas at regional and provincial level - Review/compare past population in urban and rural areas at provincial level - Identify areas/municipalities where adjustment of projected population is necessary - Identify areas/municipalities to be excluded from PW4SP - Establish future population of urban and rural areas by municipality by target year for 	<p>T8.3.1 Regional Population Projection</p> <p>T8.3.2 Municipal Population Projection and Growth Rates</p> <p>T8.3.3 Municipal Population for the Year 2010</p> <p>T8.3.4 Population Projection by Urban and Rural Area</p>	<p>T8.2.7 Public School Students and Public Utilities Coverage in Phase I Provided by Existing Facilities in the Base Year</p> <p>T8.3.1 Regional Population Projection</p> <p>T8.3.2 Census Population and Projected Population</p> <p>T8.3.3 Municipal Population Projection for Year 1998 and 2004</p> <p>T8.3.4 Municipal Population Projection for Year 2010</p> <p>T8.3.5 Past Population Development by Urban and Rural Area</p> <p>T8.3.6 Population Projection by Urban and Rural Area</p> <p>T8.3.7 Projected Number of Households by Urban and Rural Area by Municipality</p>	

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8.3.2	School Enrollment Projection	(1) Methodology for school enrollment projection by municipality - Determine school age population - Determine participation rate of total school enrollment and participation rate of public school enrollment - Establish future participation rate of total school enrollment and participation rate of public school enrollment - Conditions used for projection of the number of public utilities toilets - Conditions used to define planning area and population to be served - Condition used to determine population to be served	T8.3.2 Projected Public School Enrollment and Number of Public Utilities by Municipality	T8.3.8 Projected School Enrollment by Municipality by Target Year T8.3.9 Projected Number of Public Utilities by Municipality by Target Year	
8.3.3	Projection of the Number of Public Utilities				
8.3.4	Planning Area and Population to be Served by the Sewerage System				
8.3.5	Number of Households to be Served by Municipal Solid Waste Collection System				
8.4	Types of Facilities and Implementation Criteria				
8.4.1	Water Supply	- Classification of service level by urban and rural area - Optimum number of persons to be served by type and level of service - Limited utilization/application of Levels I & II systems - Rehabilitation/replacement of Level I facilities	T8.4.1 Summary of Urban Water Supply by Municipality T8.4.2 Standard Specifications of Level I Wells	T8.4.1 Existing Condition and Requirements of Urban Water Supply by Municipality FS.4.1 Typical Structure of Level I Well Facility FS.4.2(a) Iron Removal Facility FS.4.2(b) Iron Removal Facility	

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Table of Contents		Contents	Main Report	Supporting Report	Data Report
8.4.2	Sanitation	<p>(1) HH toilets: One sanitary toilet per household is considered. Type of facility is dependent on the existing or planned water supply level of community</p> <p>(2) School and public utilities toilets</p> <ul style="list-style-type: none"> - Future assumption on the number of public schools/utilities toilets - Standard DECS coverage based on a 1:40 facility-student ratio will be followed and the standard designs of RESP will be adopted. - Standard FW4SP designs (with modification) for public toilets will be adopted - Staged implementation of the sewerage program for limited urban area. - Requirement of garbage collection trucks is considered. 			
8.4.3	Urban Sewerage			F8.4.2	Staged Improvement in Sewerage Collection Method
8.4.4	Solid Waste				
8.5	Service Coverage by Target Year				
8.5.1	Water Supply	<p>(1) Assumptions/conditions adopted</p> <ul style="list-style-type: none"> - Criteria on number of persons served by type and level of service through the future - Limited utilization/application of Levels I & II systems <p>(2) Additional population to be served by target year</p> <ul style="list-style-type: none"> - Present population served in urban and rural areas at each municipality (1995) 	<p>T8.5.1 Population to be served by Target Year (Water Supply)</p>	<p>T8.5.1 Population to be Served by Level II System in Phase I</p> <p>T8.5.2 Population to be Served in Phase I (Water Supply)</p> <p>T8.5.3 Population to be Served in Phase II (Water Supply)</p>	

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8.5.2 Sanitation	<p>(1) Household toilets</p> <ul style="list-style-type: none"> - Present household served by type of toilet facility in urban and rural areas at municipal level - Households to be served by type of toilet facility in urban and rural areas at municipal level by target year - Additional households to be served by type of toilet facility in urban and rural areas at municipal level by target year <p>(2) School toilets</p> <ul style="list-style-type: none"> - Present number of public school students adequately served at municipal level - Number of public school students to be served at municipal level by target year - Additional public school students to be served at municipal level by target year <p>(3) Public toilets</p> <ul style="list-style-type: none"> - Present number of sanitary public toilets at municipal level - Projected number of sanitary public toilets at municipal level by target year (new construction) - Additional public toilets at municipal level by target year <p>- Assumptions adopted to define service coverage</p> <p>- Population to be served by target year</p>	<p>T8.5.2 Additional Number of Households to be Served by Target Year (Household Toilets)</p> <p>T8.5.3 Additional Number of Public School Students to be Served by Target Year (School Toilets)</p> <p>T8.5.4 Additional Number of Public Utilities with Sanitary Toilets by Target Year</p> <p>T8.5.5 Population to be Served by Urban Sewerage in Phase II</p>	<p>T8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets)</p> <p>T8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets)</p> <p>T8.5.6 Additional Number of Public School Students to be Served in Phases I and II (School Toilets)</p> <p>T8.5.7 Number of Public Utilities with Sanitary Toilets in Phases I and II</p>
8.5.3 Urban Sewerage			

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8.5.4	Solid Waste	<ul style="list-style-type: none"> - Assumptions adopted to define service coverage - Additional number of households to be served by the municipal system by target year 	<p>TS.5.6 Additional No. of Urban Households to be Served by Municipal Solid Waste System in Phase I</p>		
8.6	Facilities, Equipment and Rehabilitation to Meet the Target Services				
8.6.1	Water Supply	<p>(1) Water supply facilities by service level by target year</p> <p>(2) Equipment:</p> <ul style="list-style-type: none"> - Well drilling equipment for water source development - Workshop bldg., and its equipment/tools - Major transportation equipment for construction and O&M <p>(3) Rehabilitation</p> <ul style="list-style-type: none"> - Wells and handpumps <p>(4) Water quality laboratory</p> <ul style="list-style-type: none"> - Building - Instrument, equipment, chemical requirements 	<p>TS.6.1 Water Supply Facilities Required by Target Year</p>	<p>TS.6.1 Urban Water Supply Facilities Required by Target Year</p> <p>TS.6.2 Plan for Expansion of Existing Level III System</p> <p>TS.6.3(a) Rural Water Supply Facilities Required by Target Year</p> <p>TS.6.3(b) Rural Water Supply Facilities Required by Target Year</p>	
8.6.2	Sanitation	<ul style="list-style-type: none"> - Urban household toilets required by target year - Rural household toilets required at municipal level by target year - Public school toilets required at municipal level by target year 	<p>TS.6.2 Sanitation Facilities Required by Target Year</p>	<p>TS.6.4 Urban Household Toilets Required by Target Year</p> <p>TS.6.5 Rural Household Toilets Required by Target Year</p>	

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8.6.3	Urban Sewerage and Solid Waste	<ul style="list-style-type: none"> - Public toilets required at municipal level by target year - Additional units of truck required to meet service coverage 	T8.6.3 Number of Garbage Collection Trucks Required in Phase I	T8.6.6 Public School Toilets Required by Target Year T8.6.7 Public Toilets Required by Target Year	
8.7	Identification of Priority Projects for Medium-Term Development	<ul style="list-style-type: none"> (1) Criteria for identifying priority projects (2) Description of identified projects by mode of service in each sub-sector 			
9.	SECTOR MANAGEMENT FOR MEDIUM-TERM DEVELOPMENT				
9.1	General				
9.2	Sector Management	<ul style="list-style-type: none"> - Situational Analysis: Developing the Vision - Service Provision Policies and Objectives - Operating Policies - Regulatory Policies - Financing System 	F9.2.1 Sector Management Model		
9.3	Institutional Arrangements				
9.3.1	Roles and Responsibilities of Agencies Concerned	<ul style="list-style-type: none"> - National agencies - LGUs; provincial, municipality, barangay 			
9.3.2	Institutional Arrangements	<ul style="list-style-type: none"> - Medium-term and long-term arrangements - Staffing requirements and their function 			

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9.4	Project Management Arrangements	<ul style="list-style-type: none"> - Level I - Level II - Level III 		F9.4.1	Project Implementation Arrangement and Procedure (Water Supply Component)
9.4.1	Project Approach/Strategy	<ul style="list-style-type: none"> - Capacity enhancement - Service level determination - Community participation - Cost recovery - Feedback mechanism 		F9.4.1	Project Implementation Arrangement and Procedure (Sanitation Component)
9.4.2	Project Implementation Arrangement	<ul style="list-style-type: none"> - Implementation arrangements by service level 			
9.5	Community Development				
9.5.1	General	<ul style="list-style-type: none"> - Brief summary on CD directions 			
9.5.2	CD Structure and Linkage for Sector Projects	<ul style="list-style-type: none"> - Recommendations for CD structure and linkage at the provincial, municipal and barangay levels 			
9.5.3	Training on CD	<ul style="list-style-type: none"> - Recommendations for training programs on CD 			
9.5.4	Utilization of NGOs	<ul style="list-style-type: none"> - Recommendations on how to harness NGOs for sector activities 			
9.5.5	Approaches to Participatory Community Development	<ul style="list-style-type: none"> - Manner of LGU and beneficiary participation in sector development - The CO/CD process 		F9.5.1	Framework for Community Development
9.5.6	Information, Education, and Communication	<ul style="list-style-type: none"> - Recommendations for IEC programs at the national, provincial, municipal and barangay levels 			

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9.5.7 Health and Hygiene Education	- Recommendations for health and hygiene education programs			
9.6 Gender Consideration				
9.6.1 General	- Brief description on the importance of gender sensitive participation			
9.6.2 LGUs and Gender	- Role of LGUs in promoting gender responsiveness			
9.6.3 Gender Participation in WATSAN Projects	- Recommendations for gender participation in sector projects including issues			
9.7 Human Resources Development and Training	- Policy; responsibilities			
10. COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT				
10.1 General	(1) Methodology adopted to cost estimates (2) Composition of cost estimates - Costs for required facilities by urban and rural areas at municipal level together with equipment for construction/rehabilitation and O&M - Costs for sector management and recurrent costs			

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10.2 Assumptions for Cost Estimates	<p>(1) Unit Cost of facilities</p> <p>Establish unit cost (per capital/HH or facility) by type and level of service based on:</p> <ul style="list-style-type: none"> - Existing standard unit costs of sector agencies concerned (DPWH, LWUA and DOH) - Typical standards development for PWASP (i.e., deep wells by different depths) <p>(2) Unit costs of equipment based on the standard unit cost and recent procurement record at sector agencies concerned (DPWH, LWUA, DOH)</p> <p>(3) Sector management costs</p> <p>Establish percentages to base cost or unit cost for following sector management activities:</p> <ul style="list-style-type: none"> - Engineering studies - Community development and training - Health and hygiene education - Logistics support <p>(4) Recurrent costs</p> <p>Establish unit cost or percentage to base cost for following purposes:</p>	<p>T10.2.1 Unit Cost of Facilities by Type and Service Level</p> <p>T10.2.2 Unit Cost of Equipment and Vehicle</p>	<p>T10.2.1 Price of Major Materials by Facility</p> <p>T10.2.2 Unit Cost of Level I (Gravel packed Deep Well - 40m Depth)</p> <p>T10.2.2 (a) Unit Cost of Level I (Natural gravel packed Deep Well - 40m Depth)</p> <p>T10.2.2 (b)</p> <p>T10.2.3 Unit Cost of Level I (Gravel packed Deep Well - 80m Depth)</p> <p>T10.2.3 (a)</p> <p>T10.2.3 (b) (Natural gravel packed Deep Well - 80m Depth)</p> <p>T10.2.4 Unit Cost of Level I (Gravel packed Deep Well - 120m Depth)</p> <p>T10.2.4 (a)</p> <p>T10.2.4 (b) (Natural gravel packed Deep Well - 120m Depth)</p> <p>T10.2.5 Unit Cost of Level I (Deep Well Rehabilitation)</p> <p>T10.2.6 Unit Cost of Level I (Shallow Well - 18m Depth)</p> <p>T10.2.7 Unit Cost of Level I (Spring Development)</p> <p>T10.2.8 Unit Cost of Level II (600 Service Population)</p> <p>T10.2.9 Unit Cost of Level III (5,000 Service Population)</p> <p>T10.2.10 Unit Cost of Level III (10,000 Service Population)</p>	

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10.3 Cost of Required Facilities and Equipment	<ul style="list-style-type: none"> - Regular operation cost - Spare parts and equipment replacement, and - Management cost 		T10.2.11 Unit Cost of Level III (15,000 Service Population) T10.2.12 Unit Cost of Flush Water Sealed with Septic Tank Toilet T10.2.13 Unit Cost of Pour Flush with Double Pit Latrine T10.2.14 Unit Cost of Ventilated Improved Pit Latrine (VIP) T10.2.15 Unit Cost of Pit Latrine T10.2.16 Unit Cost of School Toilet T10.2.17 Unit Cost of Public Toilet T10.2.18 Cost for New Laboratory T10.2.19 Cost for Upgrading Laboratory	
10.3.1 Cost of Required Facilities	<ul style="list-style-type: none"> - Costs of required facilities by type and service level of each sub-sector by municipality 	T10.3.1 Construction Cost of Required Facilities by Municipality	T10.3.1 Construction Cost of Water Supply Facilities Required for Phase I	
10.3.2 Cost of Required Equipment and Vehicle	<ul style="list-style-type: none"> - Costs of required equipment (by municipality and province) 	T10.3.2 Cost of Equipment and Vehicle	T10.3.2 Construction Cost of Water Supply Facilities Required for Phase II T10.3.3 Costs of Sanitation Facilities Required for Phase I T10.3.4 Costs of Sanitation Facilities Required for Phase II	

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10.4	Recurrent Cost	- Recurrent costs	T10.4.1	Recurrent Cost	Breakdown of Community Development and Training Cost
11.	FINANCIAL ARRANGEMENTS FOR MEDIUM-TERM DEVELOPMENT PLAN				
11.1	General	- Scope of the study with limitations and future development needs	F11.1.1	Sector Budget Allocation	
			F11.1.2	General Flow of Financial Arrangements for Relevant Sector Development	
11.2	Projection of IRA	- Study on fund availability: Internal Revenue Allotment and other sources to be negotiated/arranged	F11.2.1	Trial Allocation of Internal Revenue Allotment (IRA) to Municipalities for Relevant Sector Development	
			T11.2.1	Projected Internal Revenue Allotment for Medium-Term Sector Development	
			T11.2.2	Projected Allotment of IRA to the Relevant Sector by Component	
11.3	Additional Funding Requirements	- Financial shortfall to implement Medium-Term Development Plan	T11.3.1	Financing Requirements for Sector Component for the Province	Percentages for Annual Investment
			T11.3.2	Additional Fund Requirements for the Medium-Term Plan	

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11.4	Medium-Term Implementation Arrangements	T11.3.3 Internal Revenue Allotment for Water Supply and Sanitation Sector by Municipality (Medium-Term Development)	T11.4.1 Comprehensive Investment Need Ranking of the Municipalities	
11.4.1	Reference Scenarios in Different Funding Levels	F11.4.1 Relationship Between Funding Levels and Percent of Coverage for Water Supply Sector		
		F11.4.2 Relationship Between Funding Levels and Percent of Coverage for Sanitation Sector		
11.4.2	Alternative Countermeasures	T11.4.1 Municipal Investment Need Ranking for Urban Water Supply		
		T11.4.2 Distribution of Provincial IRA to Municipalities for Urban Water Supply		
11.5	National Government Assisted Level I Water Supply and Sanitation Project	T11.4.3 Municipal Investment Need Ranking		

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11.5.1 Project Components	<ul style="list-style-type: none"> - Water supply and sanitation component - Equipment and commodity assistance - Consultancy services - Institutional development 	T11.5.1 New Cost Sharing Arrangement between NG and LGUs	T11.5.1 Available IRA for GOP-Assisted Level I Water and Rural Sanitation Project Eligible Municipalities
11.5.2 Project Requirements	<ul style="list-style-type: none"> - Minimum requirements for project participation 	T11.5.2 GOP Assisted Level I Water Supply and Sanitation Project Cost	T11.5.2 Available IRA for GOP-Assisted Urban Sanitation Project for Eligible Municipalities
11.5.3 Funding Requirements	<ul style="list-style-type: none"> - New cost sharing policy - Financial viability and arrangements 	T11.5.3 Cost Sharing for the Project (Case 1)	T11.5.3 Total Available IRA for GOP-Assisted Level I Water Supply and Sanitation Project
11.6 Cost Recovery	<ul style="list-style-type: none"> - Discussion of the cost recovery by beneficiaries (O&M and other costs) and possible arrangement by LGUs 	T11.5.4 Cost Sharing for the Project (Case 2)	T11.5.4 FIRR for Level I Water Supply
			T11.6.1 Investment Program of GOP-Assisted Level I Water and Sanitation Project
			T11.6.2 O&M Costs for Level I Facilities
			T11.6.3 O&M Costs per HH/month by Facility and Proportion to Monthly Family Income
			T11.6.4 Family Income
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			T11.6.6 O&M Cost for Urban Sanitation

Table - T. Figure - F

* Questionnaire form

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12.1 General				
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* Questionnaire form

Annex 1 User's Guide for Computer-Aided Planning

1. INTRODUCTION

The PW4SP Data Management User's Guide explains the procedure of encoding data and generating tables and figures for the PW4SP. The Guide consists of the following sections.

- Section 2: hardware and software required to successfully run the PW4SP Data Management System
- Section 3: the concept of the microcomputer architecture and an overview of hardware configurations
- Section 4: fundamentals to operate the system with internal architecture
- Section 5: basic concept of software operation
- Section 6: a complete list of data files and worksheets in the PW4SP Data Management System
- Section 7: data linkages
- Section 8: the procedure of updating the PW4SP
- Section 9: standard report format

2. SYSTEM REQUIREMENTS

The following are the basic requirements to successfully run the PW4SP data management.

Hardware:

Computer: Pentium Series
RAM: 32 MB (minimum)
Hard Disk: 3 GB (minimum)
Floppy Drive: 3.5 inch, High Density
Monitor: VGA Monitor
Printer: 80 column (Can handle A4 size paper).
Mouse: Any brand that supported by MS-Windows
Miscellaneous: 500 watts Automatic Voltage
Regulator and Surge Protector
UPS 450 watts

Software:

Operating System: Window 95/98
Windows Package: MS-Office 97
Spreadsheet: MS-Excel 97
Word Processing: MS-Word 97

3. MICROCOMPUTER SYSTEM

All computers, whether large or small, basically operate on the same fundamental principles. The hardware and software of a mainframe computer and a microcomputer have the same components and fulfill the basic functions necessary to any computer system.

The computer is seen as a powerful tool that can enable us to expand the horizons of our knowledge. It allows processing of large volume of data or complex pattern of information that would otherwise be difficult to organize and understand. Moreover, it allows for an easy manipulation of data.

There are two major components of a microcomputer: the hardware and the software. These two components complement each other in order to fulfill their basic function.

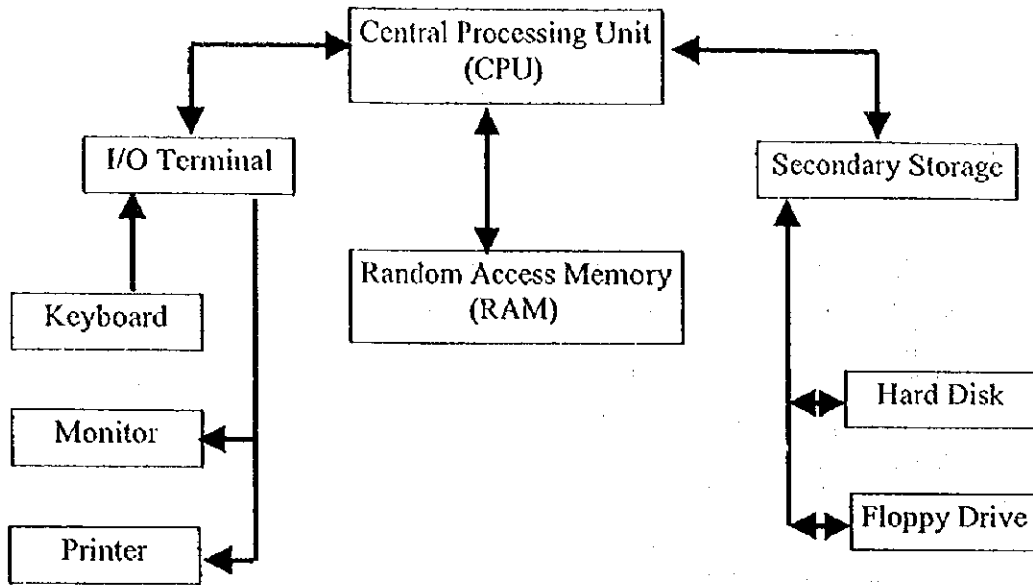
A microcomputer hardware is made up of several components based on the functions they perform in the system and how they interact with the other components.

The principal elements of a computer system are:

- Central Processing Unit (CPU)
- Main Memory (RAM)
- Secondary Storage Devices (disk, drives, magnetic tapes, etc.)
- Input/Output Devices (monitors, printers, etc.)

The CPU does the actual computing. It is capable of simple arithmetic and logical operations, such as addition and data comparison, that are executed at exceedingly high speed. The power of a computer directly stems from the speed and accuracy with which the CPU can carry out computations and move information around. The main memory of the computer is usually referred to as *Random Access Memory* or RAM. This part of the computer contains the programs and information that are currently being processed by the CPU. Secondary storage device, such as magnetic disk, is capable of holding large amount of data. Programs and data are normally stored on these secondary devices and could be retrieved when needed. They are then loaded into the RAM and executed. The results of the processing can then be written into the secondary storage device or sent to an output device such as the monitor or printer. Peripheral devices or Input/Output (I/O) devices allow the user to put data into a computer or receive output from a computer. A terminal is a peripheral that contains both a keyboard for input and a monitor for output. Other peripherals include printers and plotters.

The diagram below presents the basic hardware component of a microcomputer system.



Floppy Drive is the most common type secondary storage used in personal computer today. It acts as an external drive from which the users insert the floppy disk to store and retrieve information. The floppy disk comes in three sizes: 3.5 inches, 5.25 inches and 8 inches. It is characterized by thin circular plastic sheets coated with iron oxide so that magnetic patterns recorded on it can be retained. The surface is similar to a magnetic tape used to record music. The 5.25 inches diskette is contained in a square cardboard envelope in which it spins. The 3.5 inches diskette is contained in a hard plastic case with a metal shutter that protects the magnetic media. A floppy disk can store from 80 kilobytes to 1.44 megabytes of data. Floppy disk system is slower and has less storage capacity than hard disk system, but its lower cost makes it a popular choice for personal computer users.

Hard disk is made of magnetic metal, and can either be removable or non-removable. The most common type of hard disk that is found in personal computer today is non-removable. This disk typically holds from 10 megabytes to 3.2 gigabytes of information. Each megabyte is equivalent to 1,048,576 characters of information, or roughly 1,800 single-spaced typewritten pages; hence, this is a very efficient way to store large volume of information.

Keyboard is an external device that acts as a primary interface between the human operator and the computer. The keyboard has 3 basic components: the typewriter keyboard which is composed of alphabet characters; the calculator pad which is composed of numeric characters; and the function keys which serve as special macro key for various software.

Monitor is the screen or video display peripheral and serves as the main output device on a personal computer. It is used to display text and graphics information and is available in a variety of sizes and types. Monitors can be divided into two broad groups: those designed to display text information; and those designed to display graphics information, such as charts or picture. Within the graphics group, there are color or monochrome (single color) displays. A high quality graphic color monitor is capable of showing high-resolution pattern and is recommended for application in MS-Window, Excel, or AutoCAD.

Printer is another common peripheral found in personal computer system. The common types of printers are dot matrix, inkjet and laser printer. The dot matrix printer produces its image by printing a group of dots that form the image of a character or symbol. The inkjet printer is similar to the impact dot matrix printer, instead of using the pin impact force to create an image it use ink bubble to create similar image. The inkjet printer is much lighter and quiet than the impact dot matrix printer. Today, it is the popular choice due to it characteristic and wide availability of selection. The laser printer produces its image by means of electrophotograph similar to the principle of photocopy machine. The image produced in the laser printer is much crispier than the inkjet printer due the high-resolution capability. Both the inkjet and laser printer can produce color print.

4. OPERATING SYSTEM

Operating systems is a set of control program that manages the computer's resources and creates a well-defined software environment for computer applications. Computer hardware by itself can perform little useful work. A computer requires software to be able to communicate and do useful work. The first layer of software in a computer system is the operating system. This is *what starts*, or *boots up*, the machine helps in pulling itself up by its own bootstraps and establishes a predetermined set of conditions so that applications can be run. When the computer is turned-on or the reset button is pressed, the control is pass to a set of control programs found in the ROM, a firmware store in computer chips. These programs perform several tasks: (1) to check if hardware are functioning correctly; (2) to load a set of control program from the disk to the memory; and (3) to pass control to a routine which will accept the user input. At this point, the operating system is loaded and the user can execute an application program such as MS-Word, Excel, Power Point, Access, etc.

An operating system by itself has two levels of functionality. The first level is seen by the user running the applications and utilizing system commands and utilities. At this level, each operating system has its own set of command used to accomplish frequently performed tasks such as copying files, renaming files, and formatting disks. Normally, frequently-used functions are included in the operating system as system commands. The second is at the programming level. All operating systems contain a set of pre-packaged routine that performs the "primitive" functions necessary in

almost all applications. Such functions, like sending a character to the screen, reading and writing information from a disk file, and accepting input from the keyboard are common to nearly all programs. This level of functionality gives the programmer a set of standardized routines to perform this task.

5. SOFTWARE

The operating system alone renders the computer nearly useless, unless the user is capable of directly communicating to the hardware. In order to use the computer system, software is needed. Various software are available for different purposes, such as MS-Word for word processing, Excel for spreadsheet, Power Point for presentation, Access for database and Foxpro for database programming.

5.1. MS-WINDOWS

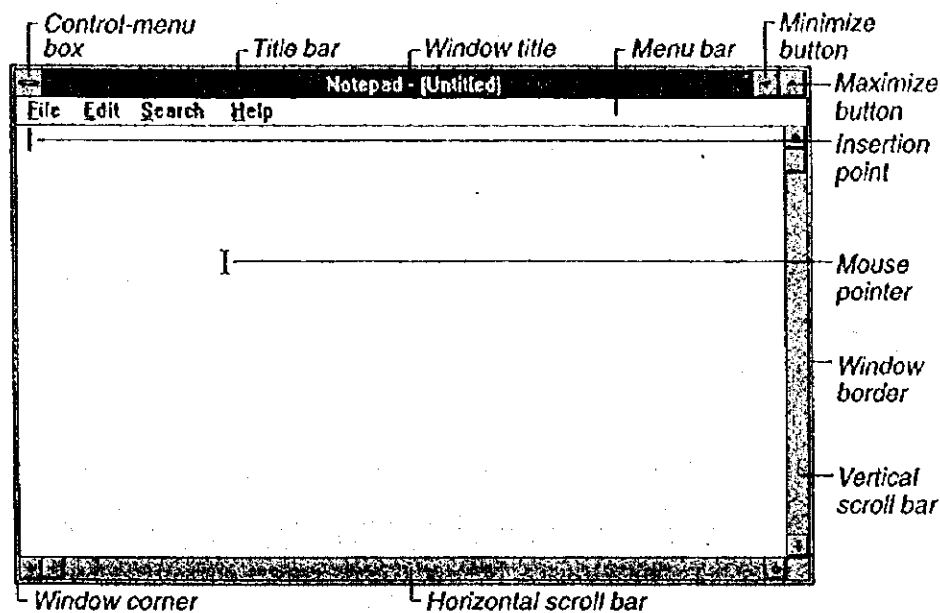
MS-Windows is the most popular operating system, it duplicates all the function performed by DOS, the defunct operating system of the seventies and eighties. The capability of MS-Window operating system far exceeds that DOS can offer it most convenient and easy to navigate. Most of the commands are represented by descriptive figures called *icons*. Navigating around the windows could be achieved through the use of a pointing device called mouse, normally in the desktop environment, the mouse pointer is seen as outline of an arrow or white arrow. To execute a command, the user only need to bring the mouse pointer to the desired command described by the icon and press the right button or double click the left button. The execution starts without typing any single character in the keyboard, unlike the DOS convention that needs typing a series of characters comprising the command. In windows, the computer screen is referred to as the *desktop*. When working, the application and documents must be in the windows. The windows on the desktop must also be arranged. If an application is left for a while, the windows are shrunk to an application icon, and still, the application keeps running on the background. When an application is shrunk, the windows place their application icon at the bottom edge of the desktop until it is again restored to window size.

With windows, several powerful applications can be run simultaneously. For example, switching from a word processing application to a spreadsheet, and then to database application with a few simple moves while quitting one application and restarting another, can easily be done.

Parts of a Windows

Each application and some documents the user choose to work on, open as separate windows. Every window has some common elements, however, not all windows use all the items.

The elements as illustrated below are the tools for working with the window and the application or document within the window.



The *Control-menu* box located in the upper-left corner of the window is the most useful menu when the use of a keyboard is preferred. The Control-menu commands can resize, move, maximize, minimize and close windows, and switch to Task List.

The *title bar* shows the name of the application or document. If more than one window is open, the title bar of the active window has a different color or intensity compared to the other title bars.

The *window title*, depending on the type of window it appears, can be the name of an application and the name of the document, or a placeholder. In such case, "untitled" normally appears.

The *menu bar* lists the available menus. Most applications have a File menu, an Edit menu, and a Help menu as well as other menus unique to the application.

The *Scroll bar* can move the parts of the document into view when the entire document will not fit in the window. With the bar, unseen portion of the lists and other information that is too long to fit in the allotted space can also be viewed.

The *Maximize and Minimize buttons* enlarge the active application window to fill the entire desktop or shrink the window to an icon. Document windows enlarge just to fill the application workspace and

not the entire desktop. After enlarging the window, the Maximize button changes to a Restore button. Restore button can be used to return the window to its previous size.

The *Window border* is the outside edge of a window. It can lengthen or shorten each side of the border.

The *Window corner* can be used to shorten or lengthen two sides of a border at the same time.

The *Workspace* is where most of the work with an application are done. For example, the content of the documents appears in the workspace when starting a wordprocessor. Hence, an application can allow the opening of more than one document window within this workspace.

The *selection cursor* shows where the user is in an individual document. It marks the place in the text or graphics where the user begins typing or drawing. The arrow-shape mouse pointer appears if you have a mouse installed. It is used to indicate items the user wants to select with mouse.

Starting Applications with the Run Command

The Run command is a handy way to start applications that you want to run only occasionally or have not yet added to a group. You can open a document at the same time you start the application. Unless the program file is in your current path, you need to know the exact directory location and name of the program file before you can start the application.

1. Choose Run from the File menu in Program Manager or File Manager. The Run dialog box appears.
2. Type the pathname and the exact filename of the program file, including the extension if there is one.
3. If you want the application to shrink to an icon as soon as it starts, make sure the Run Minimized check box contain an X.
4. Choose OK or press ENTER.

5.2. MS-EXCEL










Excel is a spreadsheet type of software package that operates under the MS-WINDOWS operating system. The primary document in Excel is called a *workbook*. The workbook is similar to a ledger that stores information and each workbook is made up of *sheets*. The sheet is virtually divided into *column* and *row*; the column run horizontally and denoted by an alphabet starting with *A* and the row run vertically and denoted by number starting from 1. The intersection of column and row is called











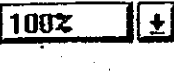

cell. The cell is the basic component of worksheet that accept different data types. The most common data types are character, number, date, logical value and formula.














Standard Toolbar



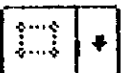


The standard toolbar that normally appears at the top of screen helps select options. Such options can open workbook, print and save worksheet, and ask for help. The following is a list of the individual icons and their respective functions.

Excel's Standard Toolbar

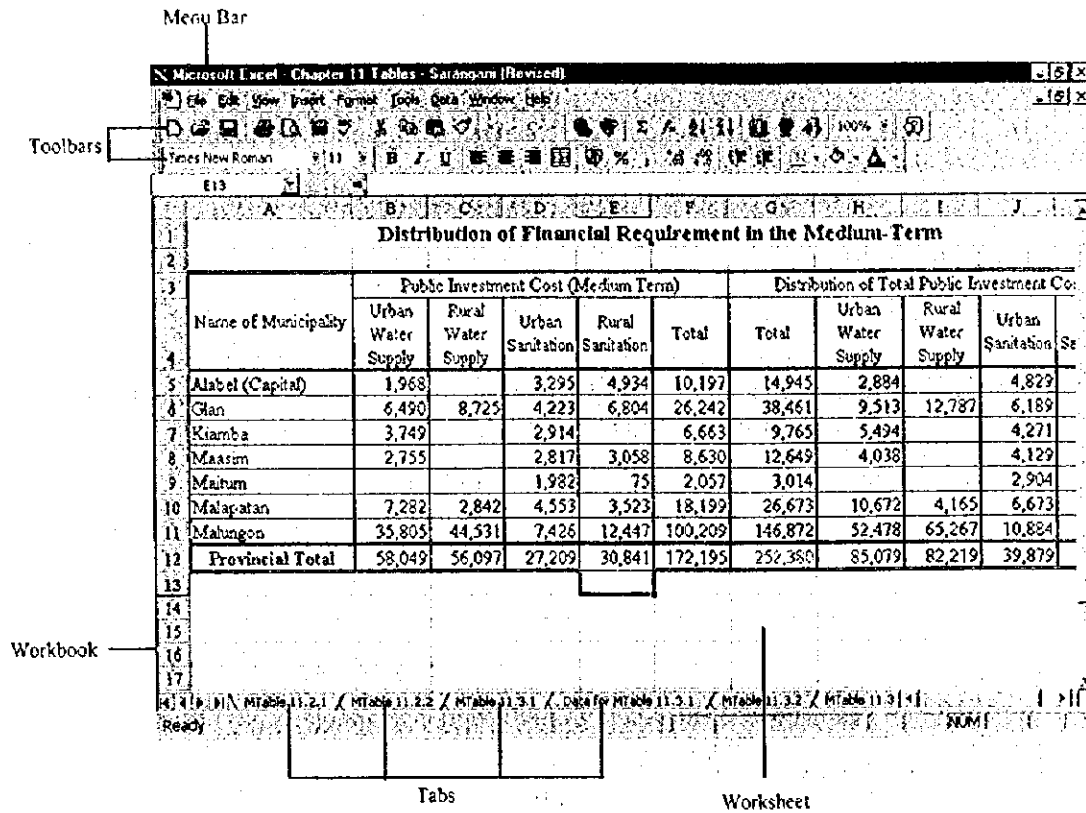
Button	Name	Function
	New Workbook	Creates a new workbook
	Open	Opens a document
	Save	Saves the active workbook
	Print	Prints the active workbook
	Print Preview	Shows the active document in print preview mode
	Speller	Checks the spelling of the document
	Cut	Cuts the selection to the Clipboard
	Copy	Copies the selection to the Clipboard
	Paste	Places the Clipboard contents at the insertion point

Button	Name	Function
	Format Painter	Copies and pastes formats for cells and objects
	Undo	Undoes the last action or command
	Repeat	Repeats the last action or command; this is the same as the redo feature in Word 6
	AutoSum	Inserts the SUM function and shows sum range
	Function Wizard	Starts the Function Wizard
	Sort Ascending	Sorts selected rows in ascending order
	Sort Descending	Sorts selected rows in descending order
	ChartWizard	Activates the ChartWizard
	Text Box	Inserts text or text box
	Drawing	Turns the drawing toolbar on or off
	Zoom Control	Sets the view of the document
	Tip Wizard	Turns the TipWizard toolbar on or off

Button	Name	Function
	Help	Displays Help
	Font	Sets the font for the selection
	Font Size	Sets the font size for the selection
	Bold	Boldfaces the selection
	Italic	Italicizes the selection
	Underline	Underlines the selection
	Align Left	Left-aligns the selection
	Center	Centers the selection
	Align Right	Right-aligns the selection
	Center Across Columns	Centers the selection across columns
	Currency Style	Changes the selected cells to default currency style
	Percent Style	Changes the selected cells to default percent style
	Comma Style	Changes the selected cells to default comma style

Button	Name	Function
	Increase Decimal	Adds one decimal place to the number format
	Decrease Decimal	Removes one decimal place from the number format
	Borders	Enables you to select a border for the selection
	Color	Sets the color for the selection
	Font Color	Sets the color for the selected font

Basic Part of Excel Screen



MS-Excel Basic Operation

Following the description of the basic operation, the mouse is used as a pointing device instead of a keyboard. The word *click* means the user must press the left button of the mouse; double click means two successive clicks; and *enter* means the user must press the Enter key in the keyboard. Basic operation dealt only to the routine necessary to update the PW4SP data base.

Creating a New Worksheet

When you enter Excel, it opens up to a new workbook, by default it contain 16 worksheets. You can use any of the worksheets. Even if there is an open workbook, you can still open another by moving the mouse pointer in the New icon (upper left of the screen below the menu bar). Click on it.

Saving the Workbook

1. Move mouse pointer to File menu and click on it to bring the File menu option.
2. From the option available. Select Save.

3. If the document your saving is new. The Save As dialog box appear. In the File Name box type the name of the workbook.

Enter Data in a Cell

1. First select the *cell* by moving the mouse pointer and clicking the right button. This routine place the insertion point in the active cell, which is highlighted on-screen with border around it.
2. You can start entering the data from your keyboard or numeric keypad.
3. To confirm the input, you can press ENTER or move the mouse pointer to the Formula bar and click the Check icon.

Editing Cell Contents

1. Double-click the cell containing the data you want to edit. To edit in the formula bar, click in the formula bar. In case the formula bar is not displayed, choose Formula Bar from the View menu located at the top row of screen.
2. Edit the cell contents.
3. To confirm the modification made in the cell, click the Check icon in the formula bar or press ENTER. To cancel edits, click the X icon in the formula bar or press ESC.

Clearing Cells

1. Select a cell or range of cells that you want to clear.
2. From the Edit menu, choose Clear, and from the option available, you the choose All, Contents, Formats, or Notes.
Shortcut : Press DEL.

To clear cells by dragging

1. Select a cell or range of cells that you want to clear.
2. Move the mouse pointer in the *fill handle* (lower right corner), drag the fill handle toward the area of cell or range, then the selected area will become gray.
3. Release the mouse button.

Copying Cells

1. Select the cells containing the data you want to copy.
2. From the Edit menu, choose Copy.
3. Select the upper-left cell of the paste area.
Beware that any values or formula in the paste area will be replaced.

Undo Command

1. To undo your last command, click the Undo button.
From the Edit menu, choose Undo.

Creating Border around Cell

1. Choose the Cell menu from Format menu.
2. Choose the side you want put the border, and then choose type of border.
3. Click OK button.

Deleting Rows and Columns

1. Select the row or column
To delete more than one row or column, extend the selection to include all the rows or columns you want to delete.
2. From the Edit menu, choose delete (Entire rows or column)
3. Click OK button

Inserting Rows and Columns

1. Select the row or column
To insert more than one row or column, extend the selection to include the number of rows or columns you want to insert.
2. From the Edit menu, choose Insert (Entire rows or column)
3. Click OK button.

Selecting a Sheet or Sheets

To select a single sheet, click the sheet tab.

To select two or more sheets

1. Click the sheet tab for the first sheet you want to select.
2. If the sheets you want to select are adjacent, hold down the SHIFT key and click the tab for the last sheet.
If the sheets you want to select are non-adjacent, hold down the CTRL key and click the other sheet tabs.

Ungroup Selected Sheets

1. Move the mouse pointer to the sheet tab. Click the left button of the mouse.
2. While the mouse pointer still on the sheet tab, click the right button and choose the Ungroup Sheets.

Inserting Worksheet

1. Select a sheet or sheets in the workbook.
2. From the Insert menu, choose Worksheet.
The new sheet or sheets will be inserted to the left of the sheet tab you select.
Shortcut : SHIFT+F11

Deleting Worksheet

1. Select a sheet or sheets in the workbook.
2. Move the mouse pointer to the sheet tab, and click the right button.
3. Choose Delete, and click the OK button.

Moving Worksheet Within the Workbook

1. Select the sheet or sheets you want to move.
2. Drag the selected sheet tab along the row of tabs.
A black triangle indicates the place where the sheets will be inserted.
All selected sheets will be inserted.
3. Release the mouse button.

Alternate Method

1. Select the sheet or sheets you want to move.
2. From the Edit menu, choose Move or Copy Sheet.
3. In the Before Sheet box, select where you want sheets to be inserted.
4. Click the OK button.

Moving Sheets to Other Workbook

1. Open the workbooks you want to move sheets *to* and *from*.
2. Select the sheet or sheets you want to move.
3. From the Edit menu, choose Move or Copy Sheet.
4. In the To Book box, select the destination workbook.
5. In the Before Sheet box, select where you want the sheet or sheets inserted.
6. Click OK button.

Alternative Method

1. Open the workbooks you want to move sheets *to* and *from*.
2. From Window menu, choose Arrange and choose horizontal.
In the desktop, two workbooks will open in screen split the workarea horizontally.
3. Select the sheet or sheets you want to move.
4. Hold-down the CTRL key and the right button of the mouse.
A paper icon and black triangle indicate that you made the move routine active.
5. Drag the mouse pointer to the other workbook and select where you want the sheet or sheets inserted.
6. Release the mouse button.

Copying sheets within a workbook

1. Select the sheet or sheets you want to copy.
2. Hold down the CTRL key and mouse left button, and then drag the selected sheet tab along the row of tabs. A black triangle indicates the place where the copied sheet will be inserted.
3. Release the mouse button and then the key.

Alternative Method

1. Select the sheet or sheets you want to copy.
2. From the edit menu, choose Move or Copy Sheet.
3. In the Before Sheet box, select where you want the copied sheet inserted.
4. Select the Create A Copy check box.
5. Click the OK button.

Copying sheets to other workbook

1. Open the workbook you want to copy to and from.
2. Select the sheet or sheets you want to copy.
3. From the Edit menu, choose Move Or Copy Sheet.
4. In the To Book box, select the destination workbook.
5. In the Before Sheet box, select where you want the copied sheet inserted.
6. Select the Create A Copy check box.
7. Choose the OK Button.

Printing your Work

1. From File menu, choose Page Setup to display the Page Setup dialog box.
2. On Page Setup dialog box, there are four options available:
 - Page tab* controls page orientation, scaling, page size, print quality, and starting page number for the selected sheet.
 - Margin tab* controls page margins and the header and footer margins, and center the sheet on the page vertically, horizontally or both.
 - Header/Footer tab* controls page the headers and footers for the selected sheet. Headers and footers are descriptive text that print at the top and bottom of every page in your sheet. You can add, delete, edit, format, and position headers and footers, and view them as they will print.
 - Sheet tab* specifies which areas of the sheet you want to print, and controls the print titles, page order, and draft quality. Also controls whether gridlines, cell notes, and row and column heading print. The Sheet tab is displayed if the active sheet is a worksheet or macro sheet.
3. On the Print What, there are three options available:
 - Selection* option prints only the selected cells in the selected sheets. Nonadjacent selections are printed on separate pages. Selecting this overrides any print areas you have defined for the selected sheets using Print Area option on the Sheet tab of the Page Setup dialog box.
 - Selected Sheets* option prints the area of each of the currently selected sheets, with each print area starting on a different page. If no print area is defined on a separate sheet, the entire sheet is printed.
 - Entire Workbook* option prints the entire print area of all sheets in the active workbook. If a sheet does not have a print area, that entire sheet is printed.
4. On the Copies box, specifies the number of copies to print.
5. On the Page Range, there are two options available:
 - All* option print all the pages in the selected sheets.
 - Page(s)* option print the range of pages specified in the From and To boxes. Page numbers you selected in the From and To boxes affect which cells will be printed, not the numbering of the pages upon which they are printed. To change the numbering of printed pages, specify a number in the First Page Number box of the Page tab in the Page Setup dialog box.
6. The user has an option to see the appearance of the print by clicking the Print Preview button.
7. Printer Setup option gives the user an option to select among the available printer drivers.
8. Click the *OK* button to proceed printing.

5.3. MS-WORD

MS-Word is a word processing type of software. This is analogous to converting your computer into a typewriter machine. You have a page in which you type characters, you have a ruler that shows where you are as you type across the page. You have tabs, stops, and margin settings. The insertion point moving across the page even acts like the print head moving across the page.

MS-Word offers more advanced features that you need to create from simple to complex types of documents. When you start Word you will notice almost the identical appearance with that of MS-

Excel. Most of the command are represented in terms of icon, in the middle of the workspace were you enter your text and other object included in your documents.

Starting Word

From the MS-Window environment, you can double-click the MS-Word icon in the MS-Office program group. In some case the MS-Office administrator is automatically loaded at start-up of Windows environment. The MS-Office administrator menu icons are located in the upper right side of the screen. You can start MS-Word by clicking the icon.






Quiting Word















1. Move mouse pointer to **File** menu and click. File sub-menu will appear.
2. From the File sub-menu, move mouse pointer to **Exit** option and click.
The MS-Word environment will normally terminate. In some cases, if some active documents has not yet been save. MS-Word give the user's option to save the documents.



Standard Toolbar

The standard toolbar which normally shown at the top of screen helps you select the option, from this toolbar. The user's can open new document, open existing document, print and save document, and ask help to farther understand some function or procedure to accomplish desired task. Using the toolbar speed-up the desire task instead of using the menu (located at the top of the screen). The following shows the list of standard toolbar icons and their function.

MS Word Standard Toolbar

Button	Name	Function
	New	Creates a new file based on the Normal template
	Open	Displays the Open dialog box so that you can select an existing file to open
	Save	Saves the current document
	Print	Prints the current document
	Print Preview	Activates Word's print preview features

Button	Name	Function
	Spelling	Initiates a spelling check
	Cut	Cuts selected material to the Windows Clipboard
	Copy	Copies selected material to the Clipboard
	Paste	Pastes material from the Clipboard into your document
	Format Painter	Copies the formatting of a selection to the text you specify
	Undo	Undoes the commands you select from the list presented
	Redo	Redoes the commands you select from the list presented
	AutoFormat	Formats your document automatically
	Insert Auto Text	Inserts an Auto Text entry.
	Insert Table	Inserts a table into your document
	Insert Excel Worksheet	Inserts an Excel worksheet into your document
	Columns	Formats your document using columns
	Drawing	Opens the drawing application and enables you to draw a picture in your document
	Insert Chart	Inserts a chart into your document

Button	Name	Function
	Zoom Control	Scales your view of the document by the percentage you select
	Help	Activates context-sensitive help

MS-Word Basic Operation

Opening and Existing Document

1. Click the Open Folder icon (normally second from the left) to bring up the open dialog box.
2. In the Open Dialog box, select the file you to open from **File Name** combination box.
3. Click the **OK** button.

Changing the Format of the Text

1. Click the arrow button to the right of the *font* box to bring the list of available font.
2. Scroll through the list box by clicking on the scroll bar, and select a font by clicking on it.
3. Begin typing. The text will appear in the font you just selected.

Changing the Font Size

1. Click the arrow button to the right of the *font size* box to bring the list of available size.
2. Scroll through the list box by clicking on the scroll bar, and select a size by clicking on it.
3. Begin type. The text will appear in the font size you size selected.

Choose a Style

Perform any of the following procedures to change a font style:

- Click on the button labeled **B** to set the *bold* feature on.
You also can press **Ctrl+B** from the keyboard.
- Click on the button labeled **I** to set the *italic* feature on.
You also can press **Ctrl+I** from the keyboard.
- Click on the button labeled **U** to set the *underlined* feature on.
You also can press **Ctrl+U** from the keyboard.
- Click on the button labeled **B** and **I** to set both *bold and italic* features
You also can press **Ctrl+B** followed by **Ctrl+I** from the keyboard.

Setting Special Effects

You can use a variety of special text effects:

- Strikethrough
- Superscript
- Subscript

- Hidden
- Small caps
- All caps

To set any of these features, use the following procedure:

1. Open the **Format** menu and select the **F**ont item.
2. If the **Fonts** tab is not on top, click on it.
3. In the **Effect** group box, select the check box that represent the special effect you want to turn on.
4. Click the **OK** button.
5. Begin typing. Your text appears with the special effect you selected.

Setting the Indentation

1. Open the **Format** menu and select the **P**aragraph item.
2. If the **Indents** and spacing tab is not on top, click on it.
3. In the indentation group box, use the **L**eft and **R**ight spin boxes to set the indentation from the left and right margins. Click on the arrow buttons until the measurement is correct, or select the text in the body by highlighting it with the mouse and then type exact measurement you want.
4. To set first line or hanging indentation, open the **S**pecial drop-down list box by clicking on its arrow, and select the appropriate item. Use the **B**y spin box to set the measurement for the first line indentation or the hanging indentation.
5. Click the **OK** button. Your current paragraph takes on the indentation you just set. Each subsequent paragraph you create takes on this pattern, unless you reset the indentation using the dialog box.

Setting Line Spacing

1. Open the **Format** menu and select the **P**aragraph item.
2. If the **Indents** and Spacing tab is not on top, click on it.
3. In the Spacing group box, use the **B**efore and **A**fter spin boxes to set the distance in points from the previous paragraph and from the following paragraph. Click on the arrow buttons until the measurement is correct, or select the text in the box by highlighting it with the mouse and then type the exact measurement you want.
4. To set line spacing within the paragraph, open the **L**ine Spacing drop-down list box by clicking on its arrow, and select the appropriate item. Then use the **A**t spin box to set the measurement for number of lines or distance between lines, whichever is active.
5. Click the **OK** button. Your current paragraph takes on the line spacing you just set. Each subsequent paragraph you create takes on this pattern, unless you reset the line spacing using the dialog box.

Copying and Inserting Text

1. Highlight the text by dragging the mouse pointer over the text to be selected.
2. Move pointer to Copy icon and click on it.
3. Move mouse pointer to the place were you would like the insertion take place.
4. Move mouse pointer to Paste icon and click on it. Alternatively, you can press the right button of the mouse to bring the menu option., select the paste by click on it.

Undoing and Redoing

If you do make a mistake, you can undo it by selecting the **U**ndo option from the **E**dit menu.

This procedure undoes the last change you made to the document. Word always will add the name of the operation you are about to undo as the second word of the Undo menu item. If you cannot undo anything, this option change to Can't Undo and is dimmed.

Overstriking Text

There are times, however, when you want to type over existing text. To switch to this editing mode, press the **Insert** key in the keyboard. When you type, the characters you type replace any characters to the left of the insertion point. To turn off the overstrike mode, press the **Insert** key again.

Deleting Text

Use mouse pointer to highlight the desire text and press the **Del** key from the keyboard.

Insert File

1. Move mouse pointer in the location were you would like the insertion take place.
2. From the **Insert** menu, select **File** option.
3. From the **File** name combination box, select the file you would like to insert. Click the **OK** button.

Creating the Header or Footer

1. From the **View** menu, choose **Header and Footer**.
2. The **Header and Footer** toolbar appear, click the switch between **Header** and **Footer** button. The header and footer areas are enclosed by a nonprinting dashed line.
3. Do one or more of the following;
Text - You can type the text within the dashed line that surround the header or footer area.
Page Number - Click the icon.
Current Date - Click the icon.
Current Time - Click the icon.
4. To return to the document, choose the **Close** button on the **Header and Footer** toolbar, or double-click the main text area

Previewing the Document

1. From the **File** menu, choose **Print Preview**.
While in the print preview mode, you can perform the following options.
 - a) You can print the document by click the **Print** button.
 - b) You can switch the magnifier on and off by clicking on the magnifier button.
 - c) You can switch to a one page view by clicking the **One Page** button.
 - d) You can switch to view multiple pages by clicking on the **Multiple Pages** Button and dragging across the grid that appears, releasing the mouse button when you have the multiple-page view you want to use.
 - e) You can zoom in or out on your document by adjusting the zoom percentage in the **Zoom Control** drop-down list box.
 - f) You can switch the view of the ruler on and off by clicking on the **View Ruler** button.
 - g) You can squeeze a small amount of text on the final page into the the outer pages by clicking on the **Shrink to Fit** button.

- h) You can expand the preview screen to show only the page, the toolbar, and the status bar clicking on the Full Screen button.
- i) You can exit the preview mode by clicking on the Close button.

Printing your Document

1. From the **File** menu, choose **Print** option.
A Print dialog box appear.
2. In the Print *What* drop-down list box. This option enables you to print the document or several items ancillary to the document, such as Summary Info, Annotation, Style, Autotext Entries, and Key Assignments.
3. Use the *Copies* box to enter the number of copies to print.
4. Use the *Page Range* option to determine how much of the document to print. You can print All the document, the *Current Page*, or selected *Pages*.
5. Check the *Collate Copies* check box to finish the first set of copy before printing the second copy.
6. When all it set correctly, close all the dialog boxes you have open, and click **OK** button, the printing process begin.

6. PW4SP DATA FILES

Data files are collection of information relevant to the preparation of PW4SP. Data files are logically group into three major areas of information. The first group of information are the base data that are composed of information derived from survey, ocular inspection, and existing information from the provincial and national agencies. The second group of information are the key parameter data that are composed of information derived from applicable policies, assumption, water test result, and current cost of commodity. The third group of information are the presentation of data which derived from the previously mentioned groups of information's, this data are processed and then logically arranged to show provincial profile, existing facilities and service coverage, past financial performance, future requirement of the relevant sector, cost estimates for future sector development, and financial arrangement.

6.1. Base Information

1. *Socio-economic Data* (Socio-economic.xls)

- a) Municipal/City Status and No. of Barangays (Muncity Status (P.1.1))
- b) Past Population (Past Population (P.1.2.1) & (P.1.2.2))
- c) Projected Population (Projected Population (P.1.3.1) & (P.1.3.2))
- d) Household (Household) (P.1.4))
- e) Services (Services (P.1.5))
- f) Occupation (Occupation (P.1.6))
- g) Family Income (Family Income (P.1.7))
- h) Expenditure (Expenditure (P.1.8))
- i) Education (Education (P.1.9))

2. *Land Use Data* (Landuse.xls)

- a) Existing Land Use (Existing Land Use (P.1.2.1))

- b) Future Land Use (Future Land Use (P.2.2))

3. *Health Data* (Health.xls)

- a) Morbidity, Mortality and Infant Mortality (Morbidity and Mortality (P.3.1))
- b) Facility (Facility (P.3.2))
- c) Practitioner (Practitioner (P.2.2))

4. *Water Resource Data* (Water Source.xls)

- a) General Information (Gen. Info (P.4.1))
- b) Water Source Information (Source Info (P.4.2))

5. *Water Supply Systems Data* (Water Supply.xls)

- a) Level I Facility (Level I (P.5.1))
- b) Level II System (Level II (S.5.2.1) & (S.5.2.2))
- c) Level III System (Level III (S.5.3.1), (S.5.3.2), (S.5.3.3) & (S.5.3.4))

6. *Environmental Sanitation Data* (Sanitation.xls)

- a) Household Toilets (Household Toilets (P.6.1))
- b) School & Student (School&Student (P.6.2))
- c) School Toilet (School Toilet (P.6.3))
- d) Public Toilet (Public Toilet (P.6.4.1), (P.6.4.2) & (P.6.4.3))
- e) Drainage Facility (Drainage Facility (P.6.5))
- f) Solid Waste Collection and Disposal ((M) Solid Waste)

7. *Investment Data* (Investment.xls)

- a) Income & Expenditure (P.7.1)
- b) Past IRA (P.7.2)
- c) Available Funds for Capital Expenditure (P.7.3)
- d) Sector Previous Investment (P.7.4)
- e) Sector Allocation in the AIP (P.7.5)
- f) Allocation of the 20% Dev. Fund (P.7.6)
- g) Financial Indicator of WD (P.7.7)
- h) Loan Status of WD (P.7.8)
- i) Affordability in Water & Sanitation Services (P.7.9)

6.2. Key Parameter

1. *Key Parameters* (Key Parameter.xls)

- a) Key Parameter (Key Parameter)
- b) Level I - Safe and Unsafe (Level I Safe and Unsafe)
- c) Well Source Composition (Well Source Composition)
- d) Unit Cost (Unit Cost)
- e) Scoring Factor (Scoring Factor)
- f) Annual Investment (Annual Investment)

6.3. Data Presentation

1. *Provincial Profile* (chapter-3.xls)

- a) Outline of City and Municipalities (MTable 3.1.1)
- b) Current Land Use (MTable 3.2.1)
- c) Drainage Areas and Flow Rates of Major Rivers (MTable 3.2.2)
- d) Distribution of Households by Income Class (MFigure 3.3.1)
- e) Population Distribution by Occupation (Figure 3.3.2)
- f) Population Distribution by Highest Attainment of Education (MFigure 3.3.3)
- g) Provincial Outline on Public Services (MTable 3.3.1)
- h) Public Facilities and Services by Municipality (MTable 3.3.2)
- i) Previous Population Development of the Province (MFigure 3.4.1)
- j) Previous Population Development by Municipality (MTable 3.4.1)
- k) Present Population Distribution (MFigure 3.4.2)
- l) Outline of Urban and Rural Areas in the Province (MTable 3.4.2)
- m) Household Numbers and Household Sizes (MTable 3.4.3)
- n) Number and Rates of Ten Leading Causes of Morbidity, Mortality and Infant Mortality (MTable 3.5.1)
- o) Reported Cases and Deaths of Notifiable Water Related Diseases (MTable 3.5.2)
- p) Municipal Solid Waste Collection and Disposal, and Service Coverage in 1994 (MTable 3.6.1)
- q) Number and Ratio of Population to Health Facilities and/or Medical Practitioners (STable 3.5.1)
- r) Types of Drainage Facilities (STable 3.6.1)
- s) DENR Water Quality Criteria/Water Usage and Classification for Fresh Water (STable 3.6.2)

2. Existing Facilities and Service Coverage (chapter-4.xls)

- a) Information on Existing Level III Systems (MTable 4.1.2)
- b) Information on Water District (MTable 4.1.3)
- c) Information on Existing Level II Systems (MTable 4.1.4)
- d) Information on Existing Level I Facilities (MTable 4.1.5)
- e) Water Supply Service Coverage by Municipality in 1994 (MTable 4.1.7)
- f) Water Supply Service Coverage by Municipality (MFigure 4.1.1)
- g) Sanitation Facilities and Service of Household Toilets, Urban and Rural, 1994 (MTable 4.2.1)
- h) Provincial Service Coverage of Household Toilet Facilities, 1994 (MFigure 4.2.1)
- i) School Toilet Facilities and Service Coverage in 1994 (MTable 4.2.2)
- j) Public Toilet Facilities and Service Coverage in 1994 (MTable 4.2.3)
- k) Details on Existing Level III Systems (STable 4.1.1 Sheet 1 to 4)
- l) Details on Existing Level II System (STable 4.1.2 Sheet 1 to 6)
- m) Number of Level I Facilities by Safe and Unsafe Classification (STable 4.1.4)
- n) Estimation of Unserved Population by Municipality (STable 4.1.5)
- o) Estimation of Population Covered by Safe and Unsafe Source by Municipality (STable 4.1.6 Sheet 1 to 2)
- p) Sanitation Facilities and Service Coverage of Household Toilets by Type, by Municipality, Urban and Rural, 1994 (STable 4.2.1)

3) Past Financial Performance in Water Supply and Sanitation (chapter-6.xls)

- a) Actual Income and Expenditures, (MTable 6.2.1)
- b) Internal Revenue Allotment to the Province (MTable 6.2.2)
- c) Allotted Funds for Capital Expenditures (20% DF) (MTable 6.2.3)
- d) Actual Amount of Sector Investment to the Province by Concerned Agencies (MTable 6.3.1)
- e) Annual Investment Plan 1995-1999 (MTable 6.3.2)
- f) Sector Allocation in the Annual Investment Plan (MTable 6.3.3)

- g) Allocation of the 20% Development Fund (MTable 6.3.4)
- h) Financial Indicators of Provincial/Municipal Waterworks in the Province (MTable 6.4.1)
- i) Loan Status of Provincial/Municipal Waterworks (MTable 6.4.2)
- j) Affordability in Water Supply and Sanitation Services (Mtable 6.6.1)
- k) Income and Expenditure (STable 6.2.1)
- l) Past Internal Revenue Allotment for the Province (STable 6.2.2)

4) *Water Source Development (chapter-7.xls)*

- a) Existing Groundwater Sources in the Province (MTable 7.1.1)
- b) Work Flow of Groundwater Availability Map (SFigure 7.3.1)
- c) Existing Spring Sources by Municipality (STable 7.4.1)
- d) River Information and Related Data (STable 7.5.1)
- e) Water Quality Analysis Results (STable 7.5.2)
- f) Existing Well Sources (STable 7.6.1)
- g) Standard Specification of Wells by Municipality (STable 7.6.2)

5) *Future Requirement in Water Supply and Sanitation Environment (chapter-8.xls)*

- 1) Provincial Sector Targets (MTable 8.2.1)
- 2) Base Year Service Coverage of Water Supply (MTable 8.2.2)
- 3) Base Year Service Coverage of Household Toilets (MTable 8.2.3)
- 4) Base Year Service Coverage of Public School Toilets and Public Toilets (MTable 8.2.4)
- 5) Base Year Service Coverage of Municipal Solid Waste System in 1994 (MTable 8.2.5)
- 6) Regional Population Project (MTable 8.3.1)
- 7) Municipal/City Population Projection (MTable 8.3.2)
- 8) Municipal/City Population for the Year 2010 & Growth Rates (MTable 8.3.3)
- 9) Past and Projected Population by Current Municipality/City (MTable 8.3.4)
- 10) Past and Projected Population by Urban and Rural Area of Current Municipality/City (MTable 8.3.5)
- 11) Projected Public School Enrollment and Number of Public Utility by Municipality (MTable 8.3.6)
- 12) Population to be Served by Target Year (Water Supply) (MTable 8.5.1)
- 13) Additional Number of Households to be Served by Target Year (Household Toilets) (MTable 8.5.2)
- 14) Additional Number of Public School Student to be Served by Target Year (School Toilets) (MTable 8.5.3)
- 15) Additional Number of Public Utilities with Sanitary Toilets by Target Year (MTable 8.5.4)
- 16) Population to be Served by Urban Sewerage in Phase II (MTable 8.5.5)
- 17) Additional Number of Urban Households to be Served by Municipal Solid Waste System in Phase I (MTable 8.5.6)
- 18) Water Supply Facilities Required by Target Year (MTable 8.6.1)
- 19) Sanitation Facilities Required by Target Year (MTable 8.6.2)
- 20) Number of Garbage Collection Trucks Required in Phase I (MTable 8.6.3)
- 21) Estimation of Base Year Service Coverage of Water Supply (STable 8.2.1)
- 22) Population Coverage in Phase I Provided by Served Population in the Base Year (STable 8.2.2)
- 23) Number of Households Served by Sanitary Toilets in the Base Year (1994)(STable 8.2.3)
- 24) Number of Public School Student Served by School Toilets in the

- Base Year (STable 8.2.4)
- 25) Number of Public Utilities with Sanitary Toilets in the Base Year (1994) (STable 8.2.5)
- 26) Households Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets) (STable 8.2.6)
- 27) Public School and Public Coverage in Phase I Provided by Existing Facilities in the Base Year (STable 8.2.7)
- 28) Census Population and Projected Population (STable 8.3.3)
- 29) Municipal/City Population Projection (STable 8.3.4)
- 30) Municipal/City Population for the Year 2010 and Estimate Growth Rates (STable 8.3.5)
- 31) Past and Projected Population by Current Municipality/City (STable 8.3.6)
- 32) Past Population Development by Urban and Rural Area (STable 8.3.7)
- 33) Population Projected by Urban and Rural Area (STable 8.3.8)
- 34) Past and Projected Population by Urban and Rural Area of Current Municipality/City (STable 8.3.9)
- 35) Projected School Enrollment by Municipality by Target Year (STable 8.3.6)
- 36) Projected Number of Public Utilities by Municipality by Target Year (STable 8.3.7)
- 37) Population to be Served by Level II System in Phase I (STable 8.5.1)
- 38) Population to be Served in Phase I (Water Supply) (STable 8.5.2)
- 39) Population to be Served in Phase II (Water Supply) (STable 8.5.3)
- 40) Additional Number of Households to be Served in Phase I (Household Toilets) (STable 8.5.4)
- 41) Additional Number of Households to be Served in Phase II (Household Toilets) (STable 8.5.5)
- 42) Additional Number of Public School Students to be Served in Phase I and II (School Toilets) (STable 8.5.6)
- 43) Additional Number of Public Utilities with Sanitary Toilets in Phase I and II (STable 8.5.7)
- 44) Urban Water Supply Facilities Required by Target Year (STable 8.6.1)
- 45) Plan for Expansion of Existing Level III System (STable 8.6.2)
- 46) Rural Water Supply Facilities Required by Target Year (STable 8.6.3)(a)
- 47) Rural Water Supply Facilities Required by Target Year (STable 8.6.3)(b)
- 48) Urban Household Toilets Required by Target Year (STable 8.6.4)
- 49) Rural Household Toilet Required by Target Year (STable 8.6.5)
- 50) Public School Toilets Required by Target Year (STable 8.6.6)
- 51) Public Toilets Required by Target Year (STable 8.6.7)

6) *Cost Estimates for Future Sector Development (chapter-10.xls)*

- a) Price of Major Materials by Facilities (MTable 10.2.1)
- b) Construction Cost of Water Supply Facilities Required for Phase I (2003) (MTable 10.3.1)
- c) Breakdown of Community Development and Training Cost (MTable 10.4.1)
- d) Unit Cost of Level I (Gravel Packed Deep Well – 40m Depth) (STable 10.2.2a)
- e) Unit Cost of Level I (Natural Gravel Packed Deep Well-40m Depth)(STable 10.2.2.b)
- f) Unit Cost of Level I (Gravel Packed Deep Well – 80m Depth) (STable 10.2.3.a)
- g) Unit Cost of Level I (Natural Gravel Packed Deep Well-80m Depth)(STable 10.2.3.b)
- h) Unit Cost of Level I (Gravel Packed Deep Well – 120 Depth) (STable 10.2.4)
- i) Unit Cost of Level I(Natural Gravel Packed Deep Well-120m Depth)(STable 10.2.4.b)
- j) Unit Cost of Level I (Deep Well Rehabilitation) (STable 10.2.5)

- k) Unit Cost of Level I (Shallow Well -- 18m Depth) (STable 10.2.6)
- l) Unit Cost of Level I (Spring Development) (STable 10.2.7)
- m) Unit Cost of Level II (600 Service Population) (STable 10.2.8)
- n) Unit Cost of Level III (5,000 Service Population) (STable 10.2.9)
- o) Unit Cost of Level III (10,000 Service Population) (STable 10.2.10)
- p) Unit Cost of Level III (15,000 Service Population) (STable 10.2.11)
- q) Unit Cost of Flush Water Sealed with Septic Tank Toilet (STable 10.2.12)
- r) Unit Cost of Pour Flush with Double Pit Latrine (STable 10.2.13)
- s) Unit Construction Cost of Ventilated Improved Pit Latrine (STable 10.2.14)
- t) Unit Construction Cost of Pit Latrine (STable 10.2.15)
- u) Unit Cost of School Toilet (STable 10.2.16)
- v) Unit Cost of Public Toilet (STable 10.2.17)
- w) Cost of New Laboratory (STable 10.2.18)
- x) Cost of Upgrading Laboratory (STable 10.2.19)
- y) Construction Cost of Water Supply Facilities Required for Phase II (STable 10.3.2)
- z) Cost of Sanitation Facilities Required for Phase I (STable 10.3.3)
- aa) Cost of Sanitation Facilities Required for Phase II (STable 10.3.4)

7) *Financial Arrangements (chap-11.xls)*

- a) Projected Internal Revenue Allotment for Medium-Term Sector Development (MTable 11.2.1)
- b) Projected Allotment of IRA to the Relevant Sector by Component, 1996-2000 (MTable 11.2.2)
- c) Financing Requirements by Sector Component for the Province (MTable 11.3.1)
- d) Additional Fund Requirement for Medium-Term Plan (MTable 11.3.2)
- e) Internal Revenue Allotment for Water Supply and Sanitation Sector by Municipality (Medium-Term Development 1996-2000) (MTable 11.3.3)
- f) Relationship between Funding Levels and Percent of Coverage for Water Supply Sector (MFigure 11.4.1)
- g) Relationship between Funding Levels and Percent of Coverage for Sanitation Sector (MFigure 11.4.2)
- h) Municipal Investment Need Ranking for Urban Water Supply (MTable 11.4.1)
- i) Distribution of Provincial IRA to Municipality for Urban Water Supply (MTable 11.4.2)
- j) Municipal Investment Need Ranking (MTable 11.4.3)
- k) Percentages for Annual Investment (STable 11.3.1)
- l) Comprehensive Investment Need Ranking of the Municipalities (STable 11.4.1)
- m) New Cost Sharing Arrangement Between NG and LGUs (MTable 11.5.1)
- n) GOP-Assisted Level I Water Supply and Sanitation Project Cost (MTable 11.5.2)
- o) Cost Sharing for the Project (Case 1): 1997 Price Level (MTable 11.5.3)
- p) Cost Sharing for the Project (Case 2): (MTable 11.5.4)
- q) Available IRA for GOP-Assisted Level I Water Supply and Sanitation Project for Eligible Municipalities (STable 11.5.1)
- r) Available IRA for GOP-Assisted Urban Sanitation Project for Eligible Municipalities (STable 11.5.2)
- s) Total Available IRA for GOP-Assisted Level I Water Supply and Sanitation Project (STable 11.5.3)
- t) Investment Program of GOP-Assisted Level I Water Supply and Sanitation Project (STable 11.6.1)
- u) O&M Cost for Level I Facilities (STable 11.6.2)
- v) O&M Cost per HH/Month by Facility and Proportion to Monthly Family Income (STable 11.6.3)

- w) Family Income (STable 11.6.4)
- x) O&M Cost for Rural Sanitation (STable 11.6.5)
- y) O&M Cost for Urban Sanitation (STable 11.6.6)

7. DATA FILES LINKAGES

Linkages are logical connection between records in the data files. Through linkages, once the user's updates the source data, all data in the streams of linkages are dynamically updated. Linkages are the convenient tools of updating related data, these also shield the user's from the complexity of formula manipulation. With the aid of the data linkages the user's can concentrate more in validating the source data.

The following table lists the logical connections for each worksheet.

Table 2.6.2 Data File Linkages

Destination Link		Source Link				
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title	
Chapter - 3	MT 3.1.1	Outline of City and Municipality	Socio.xls	M 1.2.2	Past Population Page 2	
	MT 3.2.1	Current Land Use	Landuse.xls	M 2.1	Existing Landuse	
	MF 3.3.1	Distribution of Households by Income Class	Chap-3.xls	ST 3.3.1	Distribution of Household by Income Class	
	MF 3.3.2	Population Distribution by Occupation	Chap-3.xls	ST 3.3.2	Gainful Workers by Occupation Group and Major Industry Group	
	MF 3.3.3	Population Distribution by Highest Attainment of Education	Chap-3.xls	ST 3.3.3	Household Population by Highest Education Attainment	
	MT 3.4.1 & MF 3.4.1	Previous Population Development by Municipality	Socio.xls	MT 1.2.1	Past Population Page 1	
	MF 3.4.2	Present Population Distribution	Socio.xls	M 1.2.2	Past Population Page 2	
	MT 3.4.2	Outline of Urban and Rural Areas in the Province	Chap-3.xls	MT 3.1.1	Outline of City and Municipality	
	MT 3.4.3		Households Numbers and Household Sizes	Socio.xls	ST 3.3.2	Education Level and Literacy of Population
				Socio.xls	M 1.2.2	Past Population Page 2
				Socio.xls	M 1.4	Household Number
	MT 3.5.1	Number and Rates of Ten Leading Causes of Morbidity, Mortality, & Infant Mortality	Health.xls	MT 3.4.2	Outline of Urban and Rural Areas in the Province	
	MT 3.5.2	Reported Cases and Deaths of Notifiable Water related Diseases	Health.xls	M 3.1	Morbidity and Mortality Summary	
	MT 3.6.1	Municipal Solid Waste Collection and Disposal, and Service Coverage	Socio.xls	M 3.1	Morbidity and Mortality Summary	
ST 3.3.1		Number of Family by Income Class by Municipality	Socio.xls	M 1.4	Household Number	
	ST 3.3.2		Population Distribution by Occupation	Sam1.xls	M 6.5	Solid Waste Collection and Disposal
	ST 3.3.3		Education Level and Literacy of Population	Chap-3.xls	MT 3.3.2	Public Facilities and Services by Municipality
Chapter - 4	MT 4.1.2	Information on Existing Level III Systems	Socio.xls	M 1.7	Family Income and Education	
			Chap-4.xls	M 1.7	Family Income and Education	
				ST 4.1.1	Information on Existing Level III Systems	
				Sheet 1, 3, and 4		

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Table 2.6.2 Data File Linkages

Destination Link			Source Link		
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title
Chapter - 4	ST 4.1.6 Sheet 1	Estimation of Population Covered by Safe and Unsafe Source by Municipality	Chap-4.xls	ST 4.1.4	Number of Level I Facilities by Safe and Unsafe Classification
	ST 4.1.6 Sheet 2	Estimation of Population Covered by Safe and Unsafe Source by Municipality	Chap-4.xls	ST 4.1.5	Estimation of Unserved Population by Municipality
	MT 8.2.1	Provincial Sector Targets	Keypar.xls Chap-8.xls	ST 4.1.6 Sheet 1 ST 2.6.2 MT 8.5.1	Estimation of Unserved Population by Municipality Estimation of Population Covered by Safe and Unsafe Source by Municipality Key Parameter Table Population to be served by target year (Water Supply)
Chapter - 8				MT 8.5.2	Additional Number of Households to be Served by Target Year (Household Toilets)
				MT 8.5.5	Population to be Served in Urban Sewerage in Phase II
				MT 8.5.6	Add'l No. of Urban Households to be served by Municipal Solid Waste System in Phase I
				ST 8.5.7	Number of Public Utilities with Sanitary Toilets in Phases I and II
				ST 8.6.6	Public School Toilets Required by Target Year
	MT 8.2.2	Base Year Coverage in Water Supply	Chap-4.xls Chap-8.xls	MT 4.1.7 ST 8.2.1	Water Supply Service Coverage by Municipality Estimation of Base Year Service Coverage of Water Supply
	MT 8.2.3	Base Year Service Coverage of Household Toilets	Chap-8.xls	MT 8.3.1	Future Population by Urban and Rural Area by Municipality
	MT 8.2.4	Base Year Service Coverage of Public School Toilets and Public Toilets	Chap-4.xls	ST 8.2.3 MT 8.3.1	Number of Households Served by Sanitary Toilets in the Base Year (1994) Future Population by Urban and Rural Area by Municipality
				MT 4.2.3	School Toilet Facilities and Service Coverage in 1994

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Table 2.6.2 Data File Linkages

Destination Link			Source Link		
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title
Chapter - 8	MT 8.2.4	Base Year Service Coverage of Public School Toilets and Public Toilets	Chap-8.xls	ST 8.2.4	Number of Public School Students Served by School Toilets in the Base Year (1994)
	MT 8.2.5	Base Year Service Coverage of Municipal Solid Waste System in 1994	Chap-3.xls	MT 3.6.1	Municipal Solid Waste Collection and Disposal, and Services Coverage, 1994
	MT 8.3.1	Future Population by Urban and Rural Area by Municipality	Chap-8.xls	ST 8.3.5	Projected No. of Households by Urban and Rural Area by Municipality by Target Year
	MT 8.3.2	Projected Public School Enrollment and Number of Public Utility Facilities by Municipality	Socio.xls	M 1.2.2	Past Population Page 2
	MT 8.5.1	Population to be Served by Target Year (Water Supply)	Chap-8.xls	M 1.3	Projected Population
	MT 8.5.2	Additional Number of Households to be Served by Target Year (Household Toilets)	Chap-8.xls	ST 8.3.6	Projected School Enrollment by Municipality by Target Year
	MT 8.5.3	Additional Number of Public School Students to be Served by target Year (School Toilets)	Chap-8.xls	ST 8.3.7	Projected No. of Public Utilities by Municipality by Target Year
	MT 8.5.4	Additional Number of Public Utilities with Sanitary Toilets by Target Year	Chap-8.xls	ST 8.2.2	Population Coverage in Phase I Provided by Served Population in the Base Year (Water Supply)
	MT 8.5.5	Population to be Served by Urban Sewerage in Phase II	Chap-8.xls	ST 8.5.2	Population to be Served in Phase I (Water Supply)
				ST 8.5.3	Population to be Served in Phase II (Water Supply)
				ST 8.5.4	Additional Number of Households to be Served in Phase I (Household Toilets)
				ST 8.5.5	Additional Number of Households to be Served in Phase II (Household Toilets)
				ST 8.3.6	Projected School Enrollment by Municipality by Target Year
				ST 8.5.6	Additional Number of Public School Students to be Served in Phases I and II (School Toilets)
				ST 8.5.7	Number of Public Utilities with Sanitary Toilets in Phases I and II
			MT 8.2.1	Provincial Sector Targets	
			MT 8.3.1	Future Population by Urban and Rural Area by Municipality	

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Table 2.6.2 Data File Linkages

Destination Link		Source Link			
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title
Chapter - 8	MT 8.5.5	Population to be Served by Urban Sewerage in Phase II	Chap-8.xls	MT 8.5.1	Population to be Served by Target Year (Water Supply)
	MT 8.5.6	Add'l No. of Urban Households to be Served by Municipal Solid Waste System in Phase I	Chap-8.xls	MT 8.2.1	Provincial Sector Targets
	MT 8.6.1	Water Supply Facilities Required by Target Year	Chap-8.xls	MT 8.2.5	Base Year Service Coverage of Municipal Solid Waste System in 1994
	MT 8.6.2	Sanitation Facilities Required by Target Year	Chap-8.xls	ST 8.3.5	Projected No. of Households by Urban and Rural Area by Municipality/ by Target Year
	MT 8.6.3	Number of Garbage Collection Trucks Required in Phase I	Chap-8.xls	ST 8.6.1	Urban Water Supply Facilities Required by Target Year
	ST 8.2.1	Estimation of Base Year Service Coverage of Water Supply	Chap-4.xls	ST 8.6.3	Rural Water Supply Facilities Required by Target Year
	ST 8.2.2	Population Coverage in Phase I Provided by Served Population in the Base Year (Water Supply)	Chap-8.xls	MT 8.3.1	Future Population by Urban and Rural Area by Municipality
	ST 8.2.3	Number of Households Served by Sanitary Toilets in the Base Year (1994)	Chap-4.xls	MT 8.5.2	Additional No. of Household to be Served by Target Year (Household Toilets)
				ST 8.5.7	Number of Public Utilities with Sanitary Toilets in Phases I and II
				ST 8.6.6	Public School Toilets Required by Target Year
				MT 8.5.6	Add'l No. of Urban Households to be Served by Municipal Solid Waste System in Phase I
				MT 4.1.7	Water Supply Service Coverage by Municipality

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Table 2.6.2 Data File Linkages

Destination Link			Source Link		
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title
Chapter - 8	ST 8.2.3	Number of Households Served by Sanitary Toilets in the Base Year (1994)	Chap-8.xls	ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year
	ST 8.2.4	Number of Public School Students Served by School Toilets in the Base Year(1994)	Chap-4.xls	MT 4.2.3	School Toilets Facilities and Service Coverage, 1994
	ST 8.2.5	Number of Public Utilities with Sanitary Toilets in the Base Year (1994)	Chap-8.xls	ST 8.3.6	Projected School Enrollment by Municipality by Target Year
	ST 8.2.6	Household Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets)	Socio.xls	MT 4.2.3	Public Toilets Facilities and Service Coverage, 1994
				M 1.4	Household Number
				MT 8.2.3	Base Year Service Coverage of Household Toilets
				ST 8.2.3	Number of Households Served by Sanitary Toilets in the Base Year (1994)
	ST 8.2.7	Public School Students and Public Utilities Coverage in Phase I Provided by Existing Facilities in the Base Year	Chap-8.xls	ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year
				ST 8.2.4	Number of Public School Students Served by School Toilets in the Base Year(1994)
				ST 8.2.5	Number of Public Utilities with Sanitary Toilets in the Base Year (1994)
				ST 8.3.6	Projected School Enrollment by Municipality by Target Year
				ST 8.3.7	Projected No. of Public Utilities by Municipality by Target Year
	ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year	Socio.xls	M 1.2.2	Past Population Page 2
	ST 8.3.6	Projected School Enrollment by Municipality by Target Year	Socio.xls	M 1.3	Projected Population
	ST 8.3.7	Projected Number of Public Utilities by Municipality by Target Year	Chap-8.xls	M 1.4	Household Number
				M 1.2.2	Past Population Page 2
				M 1.3	Projected Population
				ST 8.2.5	Number of Public Utilities with Sanitary Toilets in the Base Year (1994)

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Table 2.6.2 Data File Linkages

Destination Link		Source Link			
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title
Chapter - 8	ST 8.5.1	Population to be Served by Level II System in Phase I	Socio.xls	M 1.1	Administrative Composition
			Chap-8.xls	ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year
	ST 8.5.2	Population to be served in Phase I (Water Supply)	Socio.xls	M 1.3	Projected Population
			Chap-8.xls	MT 8.2.2	Base Year Coverage in Water Supply
				ST 8.5.1	Population to be Served by Level II System in Phase I
	ST 8.5.3	Population to be Served in Phase II (Water Supply)	Socio.xls	M 1.3	Projected Population
			Chap-8.xls	ST 8.5.2	Population to be Served in Phase I (Water Supply)
	ST 8.5.4	Additional Number of Households to be Served in Phase I (Household Toilets)	Chap-8.xls	MT 8.2.1	Provincial Sector Targets
				ST 8.2.3	Number of Households Served by Sanitary Toilets in the Base Year (1994)
				ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year
	ST 8.5.5	Additional Number of Households to be Served in Phase II (Household Toilets)	Chap-8.xls	MT 8.2.1	Provincial Sector Targets
				ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year
				ST 8.5.4	Additional Number of Households to be Served in Phase I (Household Toilets)
				MT 8.2.1	Provincial Sector Targets
ST 8.5.6	Additional Number of Public School Students to be Served in Phases I and II (School Toilets)	Chap-8.xls	MT 8.2.1	Provincial Sector Targets	
			ST 8.2.4	Number of Public School Students Served by School Toilets in the Base Year (1994)	
ST 8.5.7	Number of Public Utilities with Sanitary Toilets in Phases I and II	Chap-8.xls	MT 8.2.1	Provincial Sector Targets	
			ST 8.2.5	Number of Public Utilities with Sanitary Toilets in the Base Year (1994)	
			ST 8.3.7	Projected Number of Public Utilities by Municipality by Target Year	

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Table 2.6.2 Data File Linkages

Destination Link			Source Link			
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title	
Chapter - 8	ST 8.6.1	Urban Water Supply Facilities Required by Target Year	Socio.xls	M.1.3	Projected Population	
			Keypar.xls	ST 2.6.2	Key Parameter Table	
			Chap-4.xls	ST 4.1.1 Sheet 1 and 3	Details on Existing Level III Systems	
			Chap-8.xls	ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year	
				MT 8.4.1	Ground Water Productivity	
				ST 8.5.2	Population to be Served in Phase I (Water Supply)	
				ST 8.5.3	Population to be Served in Phase II (Water Supply)	
				ST 7.6.2	Standard Specification of Water in the Municipality	
		ST 8.6.3 (a)	Rural Water Supply Facilities Required by Target Year	Chap-8.xls	ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year
					MT 8.4.1	Ground Water Productivity
				ST 8.5.1	Population to be Served by Level II System in Phase I	
	ST 8.6.3 (b)	Rural Water Supply Facilities Required by Target Year	Chap-8.xls	ST 8.6.3 (a)	Rural Water Supply Facilities Required by Target Year	
	ST 8.6.4	Urban Household Toilets Required by Target Year	Chap-8.xls	MT 8.5.2	Additional Number of Households to be Served by Target Year (Household Toilets)	
	ST 8.6.5	Rural Household Toilets Required by Target Year	Chap-8.xls	MT 8.5.2	Additional Number of Households to be Served by Target Year (Household Toilets)	
	ST 8.6.6	Public School Toilets Required by Target Year	Chap-8.xls	ST 8.5.6	Additional Number of Public School Student to be Served in Phase I and Phase II (School Toilets)	
	ST 8.6.7	Public Toilets Required by Target Year	Chap-8.xls	ST 8.5.7	Number of Public Utilities with Sanitary Toilets in Phases I and II	
Chapter - 10	MT 10.2.1	Unit Cost of Facilities by Type and Service Level	Keypar.xls	ST 2.6.6	Unit Construction Cost of Different Facilities	
	MT 10.3.1	Construction Cost of Required Facilities by Municipality	Chap-10.xls	ST 10.3.1	Construction Cost of Water Supply Facilities Required for Phase I (2000)	
				ST 10.3.2	Construction Cost of Water Supply Facilities Required for Phase II (2010)	
				ST 10.3.3	Cost of Sanitation Facilities Required for Phase I (2000)	
				ST 10.3.4	Costs of Sanitation Facilities Required for Phase II (2010)	

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Table 2.6.2 Data File Linkages

Destination Link		Source Link			
Chapter No.	Table No.	Title	Table/Form Number		
Chapter - 10	MT 10.4.1	Recurrent Cost	Keypar.xls	ST 2.6.2	Key Parameter Table
			Chap-8.xls	MT 8.2.2	Base Year Coverage in Water Supply
	ST 10.3.1	Construction Cost of Water Supply Facilities Required for Phase I (2000)	Chap-8.xls	MT 8.2.4	Base Year Service Coverage of Public School Toilets and Public Toilets
				ST 8.3.5	Projected Number of Households by Urban and Rural Area by Municipality by Target Year
				MT 8.5.1	Population to be Served by Target Year (Water Supply)
	ST 10.3.2	Construction of Water Supply Facilities Required for Phase II (2010)	Chap-10.xls	ST 8.6.6	Public School Toilets Required by Target Year
				ST 8.6.7	Public Toilets Required by Target Year
				ST 11.3.1	Percentages for Annual Investments
	ST 10.3.3	Cost of Sanitation Facilities Required for Phase I (2000)	Chap-10.xls	MT 8.5.1	Population to be Served by Target Year (Water Supply)
				ST 8.6.1	Water Supply Facilities Required by Target Year
	ST 10.3.4	Cost of Sanitation Facilities Required for Phase II (2010)	Chap-8.xls	ST 8.6.3	Number of Garbage Collection Trucks Required in Phase I
				MT 10.2.1	Unit Cost of Facilities by Type and Service Level
	ST 10.3.3	Cost of Sanitation Facilities Required for Phase I (2000)	Chap-10.xls	ST 2.6.2	Key Parameter Table
				MT 8.5.1	Population to be Served by Target Year (Water Supply)
ST 10.3.4	Cost of Sanitation Facilities Required for Phase II (2010)	Chap-8.xls	ST 8.6.3	Number of Garbage Collection Trucks Required in Phase I	
			MT 10.2.1	Unit Cost of Facilities by Type and Service Level	
ST 10.3.3	Cost of Sanitation Facilities Required for Phase I (2000)	Chap-8.xls	MT 8.6.2	Sanitation Facilities Required by Target Year	
			ST 8.6.7	Public Toilets Required by Target Year	
ST 10.3.4	Cost of Sanitation Facilities Required for Phase II (2010)	Chap-10.xls	MT 10.2.1	Unit Cost of Facilities by Type and Service Level	
			MT 8.3.1	Future Population by Urban and Rural Area by Municipality	
ST 10.3.4	Cost of Sanitation Facilities Required for Phase II (2010)	Chap-8.xls	MT 8.5.5	Population to be Served by Urban Sewerage in Phase II	
			MT 8.6.2	Sanitation Facilities Required by Target Year	

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Table 2.6.2 Data File Linkages

Destination Link			Source Link		
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title
Chapter - 10	ST 10.3.4	Cost of Sanitation Facilities Required for Phase II (2010)	Chap-8.xls	ST 8.6.6 ST 8.6.7	Public School Toilets Required by Target Year Public Toilets Required by Target Year
	Chapter - 11	MT 11.2.1	Projected Internal Revenue Allotment for Medium-Term Sector Development	Chap-10.xls	MT 10.2.1
MT 11.2.2		Project Allotment of IRA to the Revelant Sector by Component 1996 - 2000	Socio.xls	M 1.1	Administrative Composition
			Keypar.xls	ST 2.6.2	Key Parameter Table
			Chap-6.xls	MT 6.2.2	Past Internal Revenue Allotment to the Province from Central Government
MT 11.3.1		Financing Requirements by Sector Component for the Province	Chap-11.xls	MT 11.2.1	Projected Internal Revenue Allotment for Medium - Term Sector Development
			Chap-10.xls	ST 10.3.2	Construction of Water Supply Facilities Required for Phase II (2010)
MT 11.3.2		Additional Fund Requirement for the Medium-Term Plan	Chap-11.xls	ST 11.3.1	Percentage for Annual Investments
			Chap-11.xls	MT 11.3.1	Financing Requirements by Sector Component for the Province
MT 11.3.3		Internal Revenue Allotment for Water Supply and Sanitation Sector by Municipality (Medium-Term Development /1996-2000)	Chap-10.xls	ST 10.3.1	Construction Cost of Water Supply Facilities Required for Phase I (2000)
Chapter - 11		MT 11.4.1	Municipal Investment need Ranking for Urban Water Supply	Chap-11.xls	ST 10.3.3
	Keypar.xls			MT 11.2.2	Project Allotment of IRA to the Revelant Sector by Component 1996 - 2000
	Chap-8.xls			MT 11.3.1	Financing Requirements by Sector Component for the Province
	MT 11.4.2	Distribution of Provincial IRA to Municipalities for Urban Water Supply	Chap-11.xls	MT 11.4.2	Distribution of Provincial IRA to Municipalities for Urban Water Supply
			Keypar.xls	ST 2.6.7	Scoring Factor for Municipal Investment Ranking for Urban Water Supply
	MT 11.4.2	Distribution of Provincial IRA to Municipalities for Urban Water Supply	Chap-11.xls	ST 8.2.2	Number of Households Served by Sanitary Toilets in the Base Year (1994)
			Chap-11.xls	MT 8.2.2	Base Year Coverage in Water Supply
	MT 11.4.2	Distribution of Provincial IRA to Municipalities for Urban Water Supply	Chap-11.xls	MT 11.2.2	Project Allotment of IRA to the Revelant Sector by Component 1996 - 2000

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Table 2.6.2 Data File Linkages

Destination Link			Source Link		
Chapter No.	Table No.	Title	Filename	Table/Form Number	Title
Chapter-11	MT 11.4.2	Distribution of Provincial IRA to Municipalities for Urban Water Supply	Chap-4.xls	MT 11.3.1	Financing Requirement by Sector Component for the Province
				MT 11.4.1	Municipal Investment need Ranking for Urban Water Supply
			Chap-10.xls	ST 10.3.1	Construction Cost of Water Supply Facilities Required for Phase I (2000)
				ST 10.3.3	Cost of Sanitation Facilities Required for Phase I (2000)
	MT 11.4.3	Municipal Investments Need Ranking	Chap-11.xls	ST 11.4.1	Comprehensive Investment need Ranking of Municipalities
	ST 11.3.1	Percentages for Annual Investments	Keypar.xls	ST 2.6.4	Annual Distribution of Investment Cost Required by Sub Sector for Medium-Term Development Plan
	ST 11.4.1	Comprehensive Investment need Ranking of Municipalities	Keypar.xls	ST 2.6.8	Scoring Factor for Municipal Comprehensive Investment Ranking
			Chap-8.xls	ST 8.2.2	Population Coverage in Phase I Provided by Served Population in the Base Year (Water Supply)
				MT 8.2.3	Base Year Service Coverage of Household Toilets
			Chap-11.xls	MT 11.4.1	Municipal Investment need Ranking for Urban Water Supply

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