5.7.2 Institutional Aspect

(1) Linkages among Concerned Parties/Departments

Implementation of WATSAN projects in the province is presently undertaken by the PEO and the PHO with direct and indirect coordination with the national government's local offices and with the municipalities and other provincial offices (refer to Table-5.7.1, Supporting Report). However, there is no clear coordination scheme among these agencies which shows interrelationship/linkages.

(2) Health and Hygiene Education with Typical Program

Health and hygiene education activities are undertaken by the PHO. A Health Education Promotion Officer is in charge and is assisted by a Supervising Midwife. These HHE programs are either national projects of the DOH or provincial initiative projects. The staff of the Environmental Health and Sanitation Section (EHSS) of the PHO backstops this group. The EHSS has 1 Sanitary Engineer and 6 Sanitary Inspectors, 5 of which are assigned to various MHOs. Together with the midwives, the sanitary inspectors are responsible for delivering HHE programs at the barangay level.

(3) Training

1) Planning and engineering for LGU staff

The central government agencies provided technical training when there were projects being implemented. The PPDO, PEO and PHO staff received technical training on planning, engineering, and O&M courtesy of the USAID – DILG Barangay Water Program and the RWDC assisted projects.

2) Institutional/community development/financial/gender specialists of LGU staff

Gender-related training were given by the national agencies (i.e. DA, DSWD, DOH) to their respective provincial offices. On the other hand, a community organizing training/workshop was provided by the DILG-PMO.

3) Organizing the association at the barangay level

Under the present structure of the province, community organizing is undertaken by the Provincial Cooperative and Development Office. The beneficiaries are informed about the project, which includes their duties and responsibilities.

The beneficiaries are provided with information on how to set-up the association even before the construction starts.

During BWP implementation, management training was conducted by the Provincial BWP Team before and after project turn-over. However, this was discontinued due to lack of manpower.

4) O&M for users

Also during the BWP implementation, O&M training was provided to the users. Such training was not sustained after the completion of the BWP.

5) Training programs for cooperatives

The PCDO provides the training programs for cooperatives on topics such as management, administration, technical, etc., which are necessary to run a cooperative soundly.

Although the central government agencies extended technical training to BWSAs/ beneficiaries when foreign assisted projects were implemented, O&M of Level I facilities is still commonly neglected, considering that some barangay people are still willing to undergo the training for O&M of their facilities. Effective training program/s should be implemented by the LGUs to meet the demand for more training on community development.

5.7.3 Financial Aspect

(1) Budgetary Allocation to the Sector

The province pays for its capital expenditures using the 20% DF of the IRA. An LGU may allocate more than 20% of its total IRA to capital projects on condition that the income of the LGU from all sources (including IRA) must first be applied to the contractual and statutory obligations of the province. The Provincial Development Council (PDC) determines the sectoral allocation of the DF to the different sectors in the province.

Due to the limited resources of the province, it has to prioritize projects that require capital allocation from the budget. The GOP recently issued an administrative order directing all government agencies, government corporations, and units (including LGUs) to implement austerity measures. This limits government spending and cuts capital outlays and will help mitigate the negative effect of the peso devaluation. In view of the high social

impact of the WATSAN sector, however, the province gives the sector funding priority.

The budget allotment for the sector is included in the reported 20% DF and in other budget items unless the waterworks system is considered an economic enterprise of the LGU. In evaluating the financial performance of the province, it was observed that there is no historical database on budgetary allocations. This can be remedied by computerizing the system so that such information can be readily accessed.

(2) Access to External Funds

The Provincial Government would like to learn how to access funds from other sources other than its IRA, local taxes, and economic enterprises.

The province also has to explore ways to tap the private sector particularly for financing. It can encourage more private sector involvement by simply minimizing bureaucratic red tape.

(3) Cost Recovery Practices by LGUs and by Users

During the period that the DPWH was still constructing Level I water supply facilities, the DPWH itself formed many BWSAs. A few of the BWSAs are still active and are collecting monthly fees. Most, however, are no longer functioning and no longer collecting water fees. As a consequence, the users have to ask the government (usually barangay or municipal) to solve the problem. In some cases, the users still approach the DPWH for assistance. Although the DPWH has no budget for operations and maintenance, it extends assistance in the form of materials (such as gaskets or joint pipes) from their supplies, if these are available.

Recovery of the capital cost in the sector is dependent on how the community or the clientele perceives its role in the Sector. If the beneficiaries have a sense of ownership of the facilities, they will contribute to the sustainability of the facilities. For financing expenditures, a sense of ownership of the facilities can be achieved by asking the beneficiaries to contribute their labor when building the facility. This will translate to a sense of responsibility for the sustainability of the system.

Similarly, for O&M cost recovery, monthly contributions of beneficiaries for the sustainability of the water supply facilities establish a sense of ownership and responsibility towards the system. The government should initiate community empowerment programs and encourage active participation even at the construction period in order to

promote a sense of ownership from the very start.

5.7.4 Institutional Arrangements/Capability of the Municipal Government

The municipalities are responsible for the construction of infrastructure facilities to service the needs of the residents of the municipality. For WATSAN projects, if the barangay is not able to finance the project from its own funds, the BDC endorses the project to the municipality. If the municipality has available funds, it finances the said project. This is in addition to providing technical and material support. If the municipality has no funds, the request is elevated to the provincial government.

The municipality, through the MPDO, prepares the municipal development plans and formulates an integrated economic, social and physical development plan. It identifies and prioritizes water projects and secures the necessary funding. The MEO provides technical services such as investigation and survey, engineering design, feasibility studies and project management. It is also responsible for the organization and training of the BWSAs within the administrative boundary.

5.8 Community Development

5.8.1 General

This section presents the current status or the existing condition for community development (CD) in the Province of Davao del Norte for the WATSAN sector from the side of the government, on one hand; and the point of view of the people and the communities served, on the other. Thus, it traces the development of CD through policy measures promulgated and/or enacted on the national level and shows how CD has filtered down to the local level.

The discussions are focused on the experience of the LGUs in performing CD work with reference to the typical manner through which the participation of the community is secured for the sector, whether these be Level I, Level II or Level III projects. The experience reveals the degree of readiness of the LGUs in doing CD work by examining the structures and linkages in place in the province that may either enhance or be an obstacle to the successful execution of sector projects. It also provides the true state of information, education and communication (IEC) processes in the province in so far as these relate to the supporting sector projects.

The valuable information were taken from the following: (1) The interviews undertaken with LGU officials during the study period; (2) The answers to the CD/GAD Questionnaire dis-

tributed to select provincial and municipal officials involved in sector development; (3) The Result of the Barangay Key Informant Survey, a survey administered to the officials of the select local communities (refer to the Supporting Report for details; and (4) Other documents researched on and provided by the national, regional, provincial, municipal and barangay level offices.

The other major part of this chapter presents the different levels of community participation in sector projects as determined by the people or the beneficiaries themselves. As such, it reveals the type and degree of involvement of the people in past sector projects and whether or not this involvement was adequate. It also illustrates the manner through which the beneficiaries want to actively participate in future sector projects, thereby demonstrating the predisposition and willingness of the community to commit themselves to new development projects.

The responses of the beneficiaries to the information desired are gender sensitive and were derived from the following: (1) The Result of the Group Interview Survey (refer to the Supporting Report for details); and (2) The Result of the Barangay Key Informant Survey; and (3) The results of studies conducted on CD by the national/regional/provincial agencies.

Due to time limitation, only five barangays were made to participate in both the key informant survey and group interviews; but the results of the key informant survey and group interviews are highly indicative of the situation prevailing in the entire province in so far as participatory community development is concerned on both the government's point of view and the side of the community. The current CD status is not without it share of problems; but this is exactly the purpose of the study, that is, to improve the WATSAN sector's performance by plugging all leaks that may get in the way of the successful implementation of sector projects, CD included.

5.8.2 Provincial CD Structure and Linkages for WATSAN Sector Projects

The 1987 Philippine Constitution recognizes and mandates the participation of every Filipino in attaining overall national development. Thus, community development is utilized as a national strategy and has been adopted in the Medium Term Philippine Development Plan-1993-1998 (MTPDP) and the Updated MTPDP (1996-1998) to address the country's problems of poverty and unemployment. As a general policy, the Plan gives the greater masses of the people a voice in charting and implementing programs in the country while encouraging the collaboration of the private sector, non-government organizations and all other sectors of

society in the formulation and implementation of plans, policies and programs supportive of the development goals of the country.

The Philippine National Development Plan: Directions for the 21st Century which was released early 1998 gives more focus to building the capacities of communities for self-reliance. By recognizing the people's self-dignity and inherent capacity to improve their own lives, community-based approaches will be utilized when delivering basic services to the people. Towards this end, a development planning system that institutionalizes the bottom-up planning process was adopted.

In the Province of Davao del Norte, the community development aspect for WATSAN projects is being handled by a multi-sectoral team with members coming from the Provincial Planning and Development Office (PPDO), Provincial Cooperative Development Office (PCDO), Provincial Engineer's Office (PEO) and DILG-Provincial Office. The provincial government recently issued a memorandum transferring the supervision function of the management, operation and maintenance of barangay/rural water associations to the PCDO after they have been converted to water and sanitation cooperatives or WATSAN cooperatives. The PCDO also is charged with collecting the loan payments in favor of the province borrowed by of the WATSAN association/cooperatives.

The active and genuine people's participation in matters of local governance and development management is the foundation of the sustainable development of the Province of Davao del Norte. The province, however, would like this participation to be an empowerment of the people where the dole-out mentality is be a democratic or bottom-up approach to development planning, which becomes the basis for the barangay development plans that reflect and adhere to the people's demands and needs.

5.8.3 Assignment of CD Specialist to Sector Projects

Community Development work is not confined within the PPDO alone. Another office that actively implements or conducts CD work is the PCDO. As discussed earlier, the province has issued a policy encouraging BWSAs to be converted into cooperatives such that the responsibility for CD and training or capability building is now lodged with the PCDO.

PPDO and PCDO both maintain CD units and employees were assigned to undertake CD work. However, they do not concentrate on water and sanitation projects alone because WATSAN is just one of their concerns and added function. The PCDO, for example, also

takes care of agricultural, transport, and multi-cooperatives. For the PPDO, WATSAN is a component of the over-all planning process, but the actual implementation of WATSAN projects is a joint undertaking of the PPDO, PEO, PHO, and PCDO.

Since the PPDO and the PCDO undertake, conduct or implement CD, there seems to be no clear delineation of responsibilities between the two especially if the WATSAN organization to be formed is not a cooperative. This apparent lack of identified major responsible players on CD in the LGUs creates a serious gap to the critical linkage and support of WATSAN sector projects, from the provincial to the municipal and as far down as the barangay levels. Firstly, there is no institutionalized CD framework in place for the WATSAN sector and no permanent structure within the LGUs that serve as guideposts in doing CD work except for the universal manner that cooperatives are formed.

This leads to the second situation. CD work, to be successful, is a continuous and consistent undertaking. Without a CD framework, a permanent structure or identified responsible people for the undertaking, then any CD work started cannot prosper to its successful completion.

The third condition is really a question of whether the provincial and municipal officials are cognizant of and committed to the true importance of CD as a foundation activity for sustainable WATSAN sector projects. It is apparent that the provincial government is fully aware of the importance of CD, judging from the number of projects that incorporate a CD component and the training undergone by its staff. However, the municipalities and barangays must share this same view and must translate this belief to actual financial, human and material support to WATSAN sector projects in their areas.

There are many currently trained, as well as those who have been trained on past WATSAN projects, particularly on the CD component, who are still with the province, particularly with the PPDO and the PCDO. Although there is no existing position specifically for a WATSAN community development specialist in the province, or in the municipalities, the LGU officials are in agreement that there should be better community participation in future WATSAN activities and projects for the facilities to be efficiently sustained. However, there is a need to reorient staff who would be involved in sector-related projects in order for them to learn some up-to-date techniques and strategies that are otherwise not present in previous CD processes.

5.8.4 Training on CD

Provincial staff members have been trained on community development. During the implementation of Barangay Water Program, the DILG conducted a series of training programs, which were focused on WATSAN. At the same time, also conducts regular training programs with CD concepts. However, these programs are not focused on WATSAN but more on cooperativism. Thus, there is a need to supplement such training with one that deals particularly on WATSAN sector projects. The LGUs showed willingness to facilitate said training programs that are relevant to the achievement of the sector plan under preparation as borne out by the discussions with these officials and the Results of the Barangay Key Informant Survey.

Past training programs with CD components participated in by the provincial/municipal level staff are as follows:

1) Community-Based Development Through Situational Analysis, Planning, Supplementation, Monitoring and Evaluation (CBO-SAPIME) conducted by the Institute of Primary Health Care of Davao Medical School Foundation (IPHC-DMSF) in October 1997.
2) Seminar-Workshop on Partiicpatory Action Research sponsored by PCU-SPARCC Program Development Inc. (ASPDI) in March 1995.
3) Community Organizing Seminar conducted by DAFENACO/PCDO in February 1994.
4) Extension and Community Development Training conducted by the Mindanao Baptist Rural Life Center (MBRLC) in September 1994.
5) Agro-ecosystem Participatory Training conducted by Resource Ecology Foundation for Regeneration of Mindanao (REFORM) in October 1994.
6) BWP Trainor's Training Refresher Course conducted by DLG-BWP in December 1980.
7) Provincial Corps of Trainers Training conducted by DLG-Barangay Water Program in September 1977.

The PCDO also conducts regular training courses for cooperative members including water cooperative members. These are the following: Management Training; Leadership Training; Financial Intermediation and Saving Mobilization; Accounting for Non-Accountants; Simplified Bookkeeping and Ownership Refresher Seminar.

Water district personnel also attended various training and seminars conducted by the Local Water Utilities Administration (LWUA) and other private training institutes focused on administrative, financial and technical aspects of level III water supply systems. The varied skills that WD staff learned can also be applicable to small systems and therefore can be replicated or transferred to water cooperative personnel.

5.8.5 Utilization of NGOs

The provincial government considers non-government organizations or NGOs and POs as partners in the development in Davao del Norte and there are active organizations presently working for the promotion of WATSAN-related projects such as the ACARD Foundation that extends assistance to indigenous communities. While other NGOs may have other technical expertise other than water supply and sanitation, these NGOs have had wide experience in dealing with the grassroots levels; they have knowledge of strategies on how to enter a community and blend with the local people. The provincial officials believe that tapping the assistance of the NGOs will not be difficult in the WATSAN sector. The list of NGOs that have a track record of doing work in the province is updated on a yearly basis (refer to the Supporting Report for the List of NGOs and CBOs for Davao del Norte).

5.8.6 Existing Community Development Processes

(1) Manner of Participation in Sector Development

The practice of the LGUs in encouraging community participation for sector projects was generally confined to the organization of a BWSA for Level I systems, a RWSA or Barangay Water Cooperative for Level II systems and a water district or LGU waterworks for a Level III system or combination of a Level II and Level III system. Once formed, the organized BWSA, RWSA, LGU-WS and WD became responsible for soliciting the participation and involvement of the users-beneficiaries in ensuring the sustainability of the WATSAN organization and its various projects and activities.

For the BWSA/RWSA, the users' participation was usually in the provision of free labor and in the donation of cash or site during the construction phase of the sector project. Left to the central and local government planners was the responsibility for the other stages of project development such as planning and design, monitoring and evaluation which included activities as project identification, site selection, water rate setting, and operation and maintenance. As a result, only a few BWSA are presently in operation because the WATSAN facilities have not been properly maintained, their water sources have dried up and very few users continue to pay their water fees. Thus, the LGUs are burdened with requests for O&M of the WATSAN facilities.

The province has been encouraging the formation of WATSAN cooperatives to operate Level II systems. Generally, these systems are better managed, operated and maintained

because water fees are collected. In case of major breakdown of the facilities, these cooperatives can even apply and get loans from the PCDO or Cooperative Development Authority (CDA) for the repair of the facilities.

People's participation has been institutionalized in the formation of water associations and local cooperatives, which have become the most suitable and acceptable avenues that would allow the beneficiary communities the freedom and optimum opportunity in presenting their own ideas on what they feel is in the best interest of the WATSAN sector. The cooperatives, however, seem to better enhance the manner and quality of the users' participation in sustaining the water facilities through payment of water fees.

As suggested in the results of the group interviews conducted for this sector study, both the male and female beneficiaries are now receptive to playing a more dynamic role in the WATSAN sector projects. They professed willingness to form themselves into water associations/cooperatives, the readiness to contribute cash, materials, and even sites for the construction of WATSAN facilities. In addition, they are already primed to assume higher responsibilities in managing, operating and maintaining the WATSAN facilities.

As for Level III systems, those operated and managed by the LGUs and WATSAN Cooperatives are generally viable although their consumers/members are not regularly informed or do not actively participate in its operations. Water Districts (WDs), on the other hand, generally practice participatory community development. Users-beneficiaries are consulted on practically all phases of project development, that is, from the start of the water district's operation, before loans to be contracted, and before water rates are set and/or adjusted. Maintenance of the WATSAN facilities before the water meter, however, remains the responsibility of the water district.

(2) Typical CD Work

The typical CD work is a carry over from the manner it was done in past sector programs. This includes the formation of the water and sanitation cooperatives that follow the general guidelines set forth by the government such as project orientation at the barangay level and the conduct of various training programs participated in by members of the beneficiary community.

Community development activities for the sector are generally undertaken by the PCDO. As outlined by the office, the first stage of community development work that its CD Team undertakes a situational analysis of existing WATSAN conditions and needs in the

beneficiary community. The next stage is planning. Here the needs of the beneficiaries and its community are established through constant area visits. This enhances the capability of the beneficiaries to engage in their own planning process as well. This stage also requires linkages with other government offices and NGOs to solicit and source out for funds, done only after internal resources are exhausted. The project is then implemented based on the beneficiaries' plan where a monitoring and evaluation framework developed for the project guides the beneficiaries. This CD process is undertaken until there would be a development impact is apparent within the project site.

More often than not, the agreement to organize the WATSAN cooperative is reached after one or two general assemblies or organizational meetings called for the purpose. The WATSAN cooperative is tasked to operate and maintain the water supply and sanitation facilities. Members of the cooperative are given different types of training, such as pre-organizational teach-ins, pre-operational and post completion training and operation and maintenance seminars.

Thus, for the WATSAN cooperative, CD is operationalized during its formation as typified the seven universal cooperative principles. As a business concern, the barangay water cooperatives are actually an association of persons with a common bond of interest who voluntarily join together to achieve a lawful economic and social end; makes equitable contributions to capital required; accepts fair share of the risks and benefits; and operates under universally accepted principles. The cooperative principles are voluntary and open membership; democratic member control; members' economic participation; autonomy and independence; education, training and information; cooperation among cooperatives; and concern for community.

At the barangay level, CD tasks for health and sanitation are generally conducted by the Municipal Health Office (MHO) in conjunction with its environmental sanitation program. CD is undertaken in the form of social mobilization, community organizing and project participation. Thus the first activity is the development of the health profile of the community. This effort is aided and facilitated by the LGUs.

Typical also for the Province of Davao del Norte is CD work in the formulation of barangay development plans by eliciting community/people participation in planning their own projects based on the needs and requirements of the communities themselves, although this was not limited to WATSAN sector. Methods utilized are barangay assemblies and actual beneficiary participation in the gathering of baseline data for their communities.

For the WATSAN sector, Agusan del Sur, one of the provinces in the First Batch of this study, has been implementing a typical CD process that has been the result of a recent UNDP project (refer to the Supporting Report for the Detailed CD Process of Agusan del Sur).

In the Result of the Barangay Key Informant Survey among the barangay officials and other community heads, it was found out that the barangay councils are willing to pay for the training of volunteers on the operation and maintenance of constructed facilities. The same survey showed the willingness of local residents to provide labor while others will provide materials for the repair and maintenance works as a manifestation of their active involvement with the BWSA/WATSAN cooperatives.

In forming the water districts, LWUA, in coordination with the LGUs concerned, conducts a series of sectoral consultation with the community. Since water districts are formed at the option of the LGU, LWUA first consults the people, through a series of public hearings, to arrive a consensus on whether or not to form the water district. LWUA also encourages the community to participate in the selection of the WDs' five-man board of directors, who are nominated from various sectors. Once formed and operating, the water district conducts regular dialogues with its concessionaires on various issues such as water rates formulation/adjustment, expansion program and other matters that may affect the people-WD relationship.

5.8.7 Information, Education and Communication (IEC) As Foundation Activities for Community Development

A comprehensive, well-planned and executed IEC program on the sector informs and educates the people on the value of water, the benefits derived from good health and sanitation and on the programs and activities of government on the sector. This provides the proper media and venue for a sustaining mechanism to promote free, open, two-way exchange of information and communication at all times.

The province has an existing IEC program for sector plans and programs in order to gain the support of various publics, although this is being handled mainly by the PHO in coordination with the PPDO, the DILG, and the municipal and barangay LGUs. Information on sector policies, opportunities and programs are given through lectures, house-to-house visits, school visits and community assemblies. Information is also disseminated through the flip charts.

There are problems, however, that hamper the effectiveness of IEC program. Firstly, there is a lack of personnel and manpower to implement the program. Second is the difficulty in generating data as an input to planning in some projects being implemented in depressed barangays. Thirdly, the medium of communication and/or instruction in ethnic or indigenous communities needs to be translated to the prevailing dialect. Fourthly, purok and home visits conducted in far-flung areas are difficult to supervise and monitor. Lastly, special IEC projects need financial backing, and when times are hard, said projects are first to be scrapped or relegated to the last in the list of priorities.

On the other hand, the water districts (WDs) in general implement a systematic and comprehensive IEC program. Most WDs produce printed information materials such as newsletters, leaflets and posters that are disseminated to the concessionaires. Regular press releases on WD development issues are submitted to local newspapers. There are some WDs that sponsor radio programs while others conduct regular dialogues with the community. Those that do not possess enough expertise are assisted by bigger WDs within the province/region (in the province, it is the Davao City Water District which is named Godfather Water District in Region XI) or by the Public Affairs Office of LWUA. A region-wide Water Information Network, called the Southern Mindanao Water Information Council, has been established with all WDs in the region as members. This network undertakes regular public information drive and helps smaller WDs to disseminate information.

5.8.8 Health and Hygiene Education

Gender responsive health and hygiene education programs are incorporated in all health-related programs being implemented by the MHO/rural health units (RHUs), with the support and supervision of the PHO. These programs are conducted as early as during the pre-marital counseling.

A key informant survey among barangay residents revealed that people recognize the importance of good health and hygiene practices. All respondents said that they learned about health and sanitation matters from health workers. Some of them also learned health education from radio, television, and health clinics.

5.9 Gender

5.9.1 General

This section presents the current status for gender and development in the Province of Davao del Norte for the WATSAN sector from the side of the government, on one hand; and the point of view of the people and the communities served, on the other. As such, it elucidates on the evolvement of gender policies on the national level and shows how these have filtered down to the local level where gender responsive planning has become a requirement for all development efforts on the WATSAN sector. It also reveals the extent of the awareness that the people and/or beneficiary communities have on gender matters as seen through their participation in past sector projects as well as their perceived participation in future projects.

Gender-related information were taken from the following: (1) The interviews undertaken with LGU officials during the study period; (2) The answers to the CD/GAD Questionnaire distributed to select provincial and municipal officials involved in sector development; (3) The Result of the Barangay Key Informant Survey for Bukidnon administered to the officials of the select local communities; and (4) The Result of the Group Interviews for Bukidnon conducted at the barangay level; and (5) Other documents researched on and provided by the national, regional, provincial, municipal and barangay level offices.

5.9.2 The Evolution of Gender and Development

The 1987 Philippine Constitution recognizes and ensures the fundamental equality of women and men before the law and cites their respective roles in nation building. The National Commission on the Role of Filipino Women (NCRFW), established in 1975, ensures the integration of gender concerns in all aspects of the project development. In 1991, Republic Act 7192, better known as "Women in Development and Nation Building" was enacted to strengthen the mandate of the NCRFW. The Act called for the allocation of a substantial portion of the official development assistance funds from foreign governments and multilateral agencies to support programs and activities for women.

The adoption of the Philippine Plan for Gender Responsive Development (1995-2025) paved the way for full participation of women and men in planning and implementation of technology for infrastructure projects, including those in the water supply and sanitation sector. In 1995, the Office of the President issued Memorandum Order No. 282 directing various government training institutions to incorporate "Gender and Development (GAD) Concerns and

Programs" in their respective curricula in order to further institutionalize gender and development programs. The General Appropriations Act of 1997 mandated all departments, offices and agencies to set aside a minimum amount of 5% out of their 1997 appropriations to be used for projects designed to address gender issues. The Local Government Code includes a provision giving political empowerment to women by creating sectoral seat for women to be elected in every local legislative assembly all over the country. To facilitate the whole process, a gender conscious system of data gathering, processing and generation has been established.

The significance of RA 7192 has started to gradually filter down to the LGU levels. The DILG gives Gender Awareness Orientation and Training to its officials and employees, from the central down to the municipal level. The purpose for this is not only to establish a common awareness on gender, but also to recognize that they are catalysts of growth and development for LGUs. In compliance with the policies enunciated in RA 7192, all government departments and agencies were directed to revise, review all their regulations, circulars, issuance and procedures to remove any gender bias. Thus, recent projects that national government agencies have incorporated gender concepts including the projects from the water and sanitation sector.

The DILG implements gender responsive WATSAN projects. The DPWH implemented in 1991 the First Rural Water Supply and Sanitation Project which adopted the "Women in Development" (WID) approach aimed to create support mechanisms to enable women to surmount problems regarding water and sanitation thereby increasing their productivity efforts and giving them greater participation in decision-making. Most of the water and sanitation projects of the DOH are directed towards the improvement of women's health and physical condition as well as their social status in the community. As such, implementation of most health and sanitation projects, including water supply, utilizes the women's sector in the community.

5.9.3 The LGUs and Gender

For some time now, the province of Davao del Norte has been implementing gender sensitive projects. The inclusion or utilization of gender sensitive approach to planning to WATSAN projects has been limited, however, to health, sanitation and hygiene projects. One such opportunity for this kind of discussion happens during marriage counseling where population management, maternal and child health care are tackled.

5.9.4 Gender in WATSAN Sector Projects

(1) Gender Participation in Sector Development Projects

A province-wide survey and group interviews were undertaken to assess gender sensitivity of barangay officials and the beneficiaries in the roles and modes of participation that they, as men and women, perceive for themselves in sector projects. The respondents in the key informant survey were either an official of the barangay council, an official of the BWSA, or a recognized community or tribal leader. The purpose of the survey was to find out the degree and type of government assistance on the sector that cascades from the national government down to the barangay level.

In the five barangays surveyed, the total number of barangay council members is 39. Of this number, 34 were males and 5 females. All barangay captains are males.

The respondents in the group interviews, on the other hand, composed of 63 females and 61 males, the majority of whom belong to the 15-45 age bracket. The level of education of said interviewees were fairly distributed from elementary to college levels with women outnumbering men in having graduated from college and having pursued vocational courses. The occupation of a big majority of the respondents is farming/fishing.

The objectives of the group survey/interviews were to identify potential service population and service level desired by the community, to assess the degree of involvement of both men and women in planning, managing, operating and maintaining WATSAN projects, and the willingness and capacity to pay of potential users. The findings are:

<u>On the formation/composition of the BWSA/RWSA and WD Board:</u>

The key informants in two of the three barangay surveyed indicated that there were organized BWSAs in the communities. On the contrary, all male and female respondents of the group interviews in the two barangays revealed there were no existing BWSAs/RWSAs in their barangays. The male and female respondents, however, indicated interest in becoming members of the WATSAN association once it is formed in their respective barangays. The majority of the male respondents also indicated willingness to provide free labor during the construction of WATSAN facilities. Many would also want to donate materials and sites for the implementation of WATSAN utilities.

For the group interviews, half of the female respondents indicated that they were consulted during the formation of WATSAN association. Likewise half of the male respon-

dents indicated that they were consulted during the construction of the WATSAN facilities. Nevertheless, all the male and female respondents were involved and briefed on their proposed roles and responsibilities in the planning, design and financing of water supply facilities.

There are five sectors represented in the water district's Board of Directors, one of which is the women's sector. More often than not, the educational sector almost always nominates/appoints a female educator.

On participation in WATSAN training:

In 1997, majority of the male and only half of the female respondents attended training programs. The male respondents attended programs geared toward agrarian and livelihood (swine production). On the other hand, female respondents participated in programs that focusing on barangay research administration and on cultural minorities.

The female respondents were more aware of the existence sector-related training programs more than their male counterparts. More than half of the female respondents was aware of "Caretakers' Training," "Collection and Finance" and "Caretakers' Training," as compared to only two of the male respondents who knew about these training courses. In this connection, all the male and female interviewees respondents indicated interest to attend training programs for the WATSAN sector such as "Organizing WATSAN Associations" (BWSA or WATSAN cooperatives), water management, disaster preparedness program. Likewise, the female interviewees participated in Skills Training Program (O&M); Water Supply Management and Sanitation.

On participation in health and hygiene:

Both male and female respondents equally recognized the importance of good health and hygiene practices. Hence, the majority of the male and female participants attended training programs on health education. However, they would like to attend training specifically on water and sanitation, water management, indigenous/herbal medicines, preventive drug dependency, skills training and other livelihood programs.

On water-related illnesses, it was found out that women were more afflicted with diseases such as diarrhea, malaria and skin disease

On participation in operation and maintenance:

All the male and female respondents believed that they can participate in operating and maintaining the WATSAN facilities. The majority of the male members said they could contribute free labor while most of the female respondents opted to be members only. The majority of females, together with half of the male interviewees indicated that "somebody" in the barangay is the one responsible for doing minor repairs of the family/community water supply facility.

(2) Gender in Water Supply and Sanitation Practices

The same survey also indicated gender sensitivity in water supply and sanitation practices, as presented in the following findings:

Responsibility in Fetching Water

The majority of the male respondents said that the men (the husband and/or eldest son) are still the ones responsible for hauling drinking water for family use. Most of the female respondents, however, said it is the wife who doing the task of fetching water. The majority of both male and female respondents indicated that families fetch drinking water three times a day with a duration of about 20 minutes from the source to their house. All of the male and female respondents admitted that they have problems with the current water source.

5.10 Existing Project and Sector Monitoring

(1) Sector Monitoring

The primary sources of sector data are the field offices and staff of DPWH, DOH, LWUA, DILG and NSO. Other agencies, including NEDA and the LGUs, use data from these agencies. Each of these agencies runs its own project and/or activity-monitoring system largely based on required reports from its field offices. Only the NSO gathers and assesses information nationwide on a regular basis as part of its Census on Population and Housing (CPH). The CPH "long form", which includes "water supply", is administered on 10% of the households once every ten years, while its "short form" is administered every five years. Water and sanitation is not included in the short form.

(2) Project Monitoring

Project monitoring has been conducted by different government levels depending on the characteristics of the project (i.e. local-funded or foreign assisted projects). Only projects

handled by the local offices of central government agencies are monitored, focusing on physical accomplishments and capital expenditures of projects, by respective central government line agencies.

Monitoring activities under the Regional Development Council cover four components: Macro, Economic, Social welfare and Infrastructure. The monitoring report on foreign assisted infrastructure projects, including water supply projects, is submitted monthly by the PPDO to the regional Office of DILG, while the reports on other sectors and non-foreign assisted projects are submitted quarterly. The monitoring report submitted to the regional office of DILG is sent to the central government (NEDA) through the RDC after compilation with other monitoring reports (by the secretariat of RDC). The central government agencies also report to the foreign assistance agencies such as the ADB, WB, etc.

It was confirmed at the NEDA Regional office that there are some foreign assisted projects provided directly to the regional office (such as grass-root assistance with a limited amount). For such projects, the NEDA does not sign with the foreign donor. However, the reporting on the project is still made by the regional office to the central office of NEDA. The central office of NEDA sometimes overlooks such projects. It is therefore necessary to establish a data management system to monitor all related projects.

There are no differences in the current project monitoring systems at LGU level. Aside from local practices, the monitoring reports on foreign assisted projects are submitted to the concerned central government agencies through the regional offices.

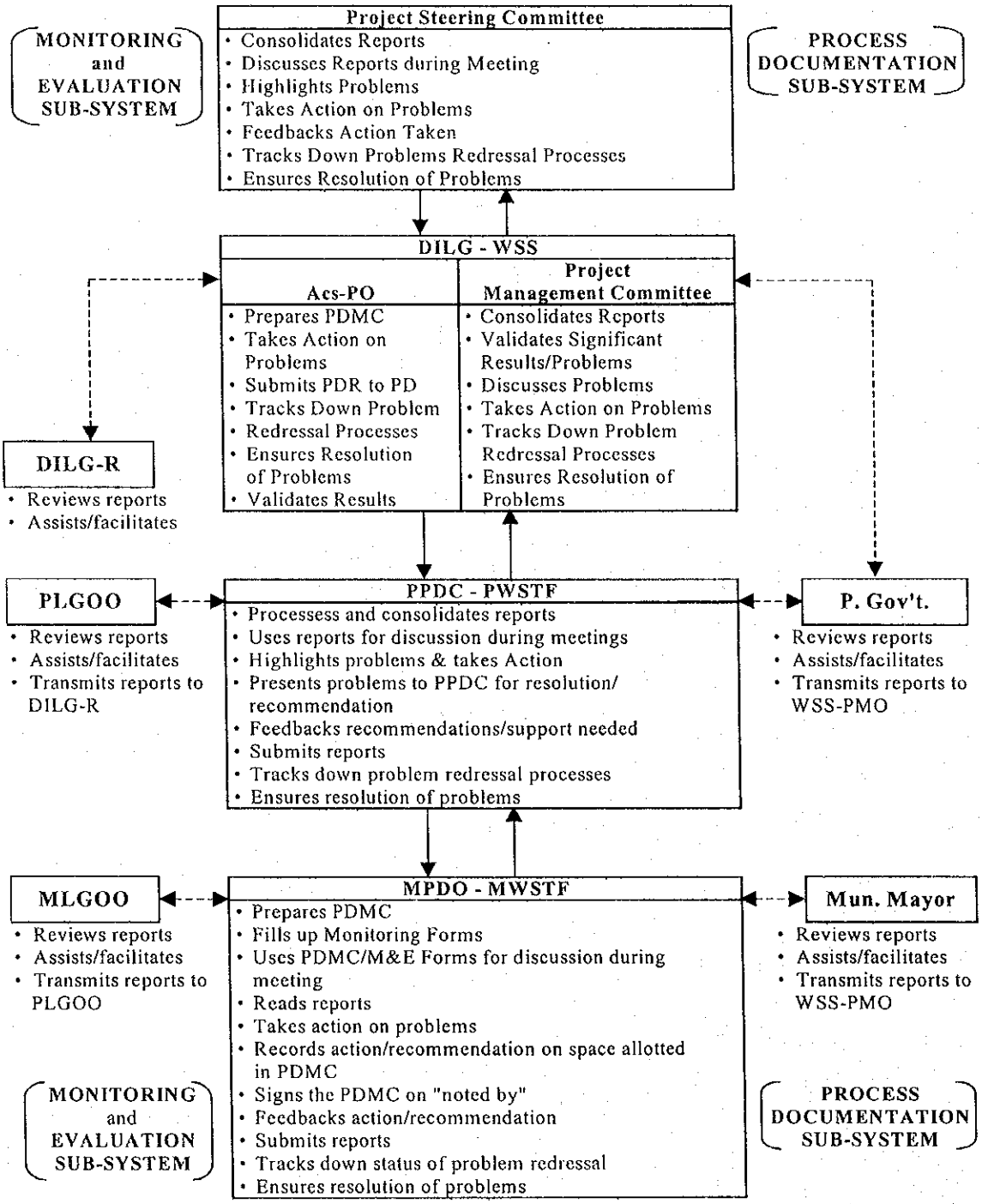
The monitoring for WATSAN-related projects is conducted under the Regional Monitoring and Evaluation System (RPMES). The PPDO conducts monitoring from the start until the completion of the project. Projects that get negative feedback in terms of efficiency and effectiveness of implementation require close monitoring. The monitoring report covers the status of project implementation in terms of finance, percentage of accomplishment and slippage/problems, and evaluation and countermeasures. Figure 5.10.1 shows an example of an UNDP-assisted project illustrating the linkages among concerned agencies.

In both sector and project monitoring, the exchange of information between concerned agencies seems insufficient and unsystematic. Opportunities to improve the system, however, are feasible, particularly through the conduct of periodic meetings by the Regional Development Council with line offices and LGUs. In addition, the absence of a functional management in-

formation system increases workloads in the monitoring activity and causes to wide dissatisfaction among project implementers. The preparation of the monitoring report is considered a nuisance to performing one's job and is thus haphazardly done. This leads to the problem of reliability of information coming from the field. A clear mechanism and data management system is required to promote more coordination among relevant agencies.

Figure 5.10.1

UNDP/PHI/93/010 PROJECT
PARTICIPATORY MONITORING FEEDFORWARD
AND FEEDBACK MANAGEMENT MECHANISM



Chapter 6

PAST FINANCIAL PERFORMANCE IN WATER SUPPLY AND SANITATION

6. PAST FINANCIAL PERFOMANCE IN WATER SUPPLY AND SANITATION

6.1 General

Based on the Local Government Code of 1991 and NEDA Board Resolution No. 4 (1994), the locally funded programs and projects for the water supply and sanitation sector have been devolved from the central government agencies to the LGUs since 1992. However, the central government still retains its role of providing support to LGUs in the form of technical, institution-building and limited financial assistance.

The financial arrangements conducted, since the sector's devolution to the LGUs, by the province with a special attention to the subject sector are reviewed and discussed in this chapter. The past experience is the basis to seek for appropriate financial arrangements for the medium term development. The essential study components are: (1) LGUs' past financial performance; (2) past public investment and present plans; (3) LGUs' present financing sources and management participation in the sector, (4) existing practices by the LGUs on cost recovery and (5) affordability by users.

6.2 LGU's Past Financial Performance

The provincial government's past financial performance from the year 1994 to 1998 was investigated. Actual financial data were obtained for the years 1994 to 1997, while the financial figures in 1998 are only budgetary estimates. By virtue of RA 8470, the province was divided into two, hence a revised budget was prepared. The January – May figures are actual while the June – December are estimates only. Likewise, the municipalities' past financial performance in the same period (1994 to 1998) is included in the Supporting Report.

6.2.1 Sources and Uses of Funds

(1) Sources of Funds in the Province

The sources of income of the LGU are Internal Revenue Allotments (IRA), local tax revenues, non-tax revenues such as grants, aids and subsidies, as shown below. At the present time, IRA is a major financial source of the LGUs.

(a) IRA – the amount allotted by the National Government to different provinces, municipalities and barangays. A standard formula is used, which considers parameters such

as population, land area, number of barangays, cost of devolved national functions, and other factors.

(b) Tax Revenues – mainly consist of real property tax, accounting for an average of 8.30% of the total income of the province. The division of the province and transfer of 11 municipalities to the newly created province of Compostela Valley has reduced the tax revenue collections of Davao del Norte for 1998.

(c) Grants, Aids and Subsidies – There are no grants and subsidies reported by the provinces. However, there are national projects being contracted by the province that are considered grants.

(d) Income from the operation of economic enterprises of the province such as lease of equipment in road construction, upgrading and rehabilitation.

Based on the Local Government Code of 1991, 40% of the national internal revenue taxes of the 3rd fiscal year preceding the current year (from 1994 onwards) is allocated to the LGUs nationwide, specifically to the administrative units of (1) province (23%); (2) city (23%); (3) municipality (34%), and barangay (20%). Further, respective IRAs in different administrative levels are allotted to all administrative units concerned.

Table 6.2.1 presents the income and expenditures of Davao del Norte during the period of 1994-1998. Local tax revenues, which were 8.30% of the total income of the province, consist of real property tax, business taxes and licenses, and miscellaneous taxes. IRA's share to total income was 76.18% in annual average, which indicates that the province has historically been dependent on the IRA with its low tax and non-tax revenue collections.

Another source of provincial income is from equipment rental and fabrication of reinforced concrete pipes. By law, the profits from economic enterprises are put in the general fund.

In order to mobilize fund sourcing, the 1987 Constitution and the 1991 Local Government code granted the Provincial Government to have its initiative to create new revenue sources.

Table 6.2.1 Actual Income and Expenditures, 1994-1998

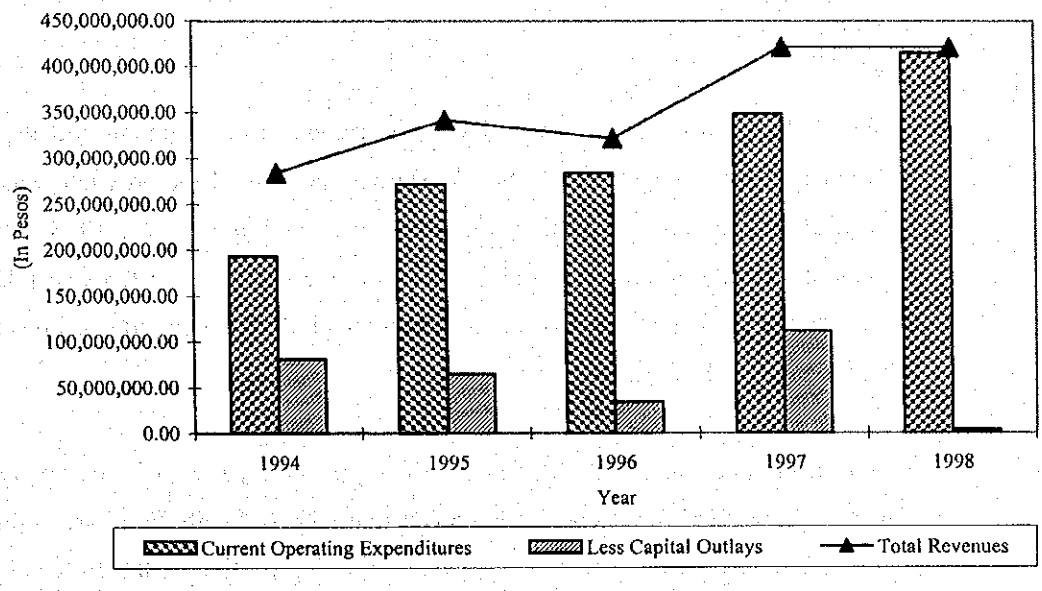
Unit: Pesos

Province	1994	1995	1996	1997	1998
RECEIPTS					
Tax Revenue 1/	32,735,259.41	31,469,870.05	33,757,755.66	36,758,546.64	6,443,869.01
IRA	215,155,367.00	239,106,194.80	257,812,817.78	325,892,402.58	326,386,510.00
Other Revenue Source	35,896,417.36	70,779,449.67	29,929,037.56	58,639,557.50	88,345,751.18
Total Revenues	283,787,043.77	341,355,514.52	321,499,611.00	421,290,506.72	421,176,130.00
EXPENDITURES					
Current Operating Expenditures	192,842,062.62	271,948,743.29	283,858,028.81	347,864,822.17	414,884,664.43
Personal Services	78,992,110.42	102,485,895.16	123,957,901.10	168,555,393.46	149,891,780.52
MOOE	113,849,952.20	169,462,848.13	159,900,127.71	179,309,428.71	264,992,884.07
NET OPERATING INCOME	90,944,981.15	69,406,771.23	37,641,582.19	73,425,684.50	6,291,464.90
Less: Capital Outlays	80,673,821.15	64,781,640.91	34,130,392.47	111,616,832.06	3,227,077.68
Add Borrowing	60,000,000.00	-	-	75,000,000.00	-
Surplus	150,944,981.15	-	-	148,425,684.55	-
Net Income:	70,271,160.00	4,625,130.32	3,511,189.72	36,808,852.49	3,064,387.22

Source: Provincial Treasurer's Office

Note 1/ Tax Revenues includes (Real Property Taxes, Business Taxes and others). Due to the division of Davao del Norte into two provinces and transfer of 11 municipalities to Compostela in 1998, the tax revenue collections is projected to be much lower for this year.

Figure 6.2.1
Income and Expenditures, 1994-1998



(2) Uses of Funds in the Province

Actual expenditures of the provincial government during the period from 1994 to 1997 show that personnel expenses were major parts with an average of 34.40% to total revenue: Maintenance and operating expenses of the province was 49.61%. In addition, the

province has a capital outlay with an average of 17.06% to the total revenue. The funds for the water supply sector were part of the capital outlays and maintenance and other operating expenses particularly those funded under the general fund considered as community development projects.

From 1994 to 1997, the province had a net surplus from its operations and likewise projected a net operating income of ₱6.29 million in 1998 from operating expenditures of ₱414.88 million, and after deducting the projected capital outlay amounting to ₱3.2 million, the net income is estimated to be ₱3.0 million.

6.2.2 Availability of Funds

As previously noted, the IRA comprises 76.18% of the total income of the province, which is tapped to finance most of its expenditures including capital outlays and even non-office expenses (incidental). According to the Provincial Treasurer's Office, the amount of IRA that will be received by the province is known in advance before the end of the preceding year. Thus, for budgeting purposes, the province just uses the actual amount of IRA it received in the preceding year as its estimate of IRA for the budget year. In the case where the IRA received is larger than the amount of the preceding year, the province prepares a supplemental budget.

Table 6.2.2 presents the historical IRA of the provincial government and its municipalities between 1994 and budget year 1998. As shown, the IRA of the province was 1.82% of the provincial IRA nationwide in the period 1994-1997 and budget year 1998. While, the total amount of IRA allotted to all its municipalities in the years 1994-1998 was 1.10%. The IRA percentage of each municipality to total municipal IRA nationwide is presented in Table 6.2.2, Supporting Report.

Based on the past financial performance of the province, IRA has been a major source of funds. At first, 20% Development Fund (DF) and 5% Calamity Fund are deducted from the total amount of provincial IRA. Then, the remaining portion of the IRA is combined with other income sources. Contractual and statutory items, which are covered by R.A. 324 (b) are deducted from the pooled income (75% IRA + all other income) before other appropriations are made.

Table 6.2.2 Internal Revenue Allotment to the Province, 1994-1998

Unit: Pesos

		1994	1995	1996	1997	1998
National	I. National Total of IRA	46,853,000,000.00	55,202,800,000.00	58,022,990,000.00	71,049,000,000.00	90,990,763,000.00
	(a) IRA to all Provinces	11,498,994,198.00	12,696,604,000.00	13,775,011,803.00	17,813,547,246.00	20,054,018,925.00
	(b) IRA to all Municipalities	16,325,288,074.00	18,768,952,000.00	19,607,715,553.00	24,848,688,251.00	28,245,875,434.00
	(c) IRA to all Cities	10,753,190,000.00	12,696,460.00	13,345,287,700.00	16,341,270,000.00	18,627,875,490.00
Province	II. IRA to Davao del Norte[1/]					
	(1) Total: (2) + (3)	394,488,872.00	440,137,994.80	473,393,666.68	601,332,193.58	616,229,239.00
	(2) Provincial Government	215,155,367.00	239,106,194.80	257,812,817.78	325,892,402.58	326,386,510.00
	Percentage against (a)	1.87	1.88	1.87	1.83	1.63
	(3) Municipalities	179,333,505.00	201,031,800.00	215,580,848.90	275,439,791.00	289,842,729.05
	Percentage against (b)	1.10	1.07	1.10	1.11	1.03
	III. Total Income of the Provincial Government	283,787,043.77	341,355,514.52	321,499,611.00	421,290,506.72	421,176,130.00
	Percentage of IRA	75.82	70.05	80.19	77.43	77.50
	IV. Total Income of Municipalities	262,390,209.00	295,019,697.20	314,792,078.50	403,798,744.90	440,993,124.90
	Percentage of IRA	68.35	68.14	68.48	68.21	71.25
Municipalities	V. IRA to Municipalities					
	TOTAL	179,333,505.00	201,031,800.90	215,580,848.85	275,439,791.00	289842729.05
	Island Garden City	24,011,753.00	26,603,101.00	28,927,170.25	37,676,470.00	39,524,207.55
	Babak	8,170,234.00	9,099,617.00	9,856,825.00	13,359,680.00	13,309,640.00
	Kaputian	8,426,975.00	9,378,104.00	10,148,384.00	13,008,427.00	14,906,204.55
	Samal	7,414,544.00	8,125,380.00	8,921,961.25	11,308,363.00	11,308,363.00
	Braulio Dujali					5,999,895.00
	Carmen	14,745,491.00	17,922,113.00	17,788,104.00	22,658,957.00	21,079,350.41
	Panabo	24,215,630.00	27,044,842.55	29,359,156.00	38,786,369.00	34,144,243.59
	Asuncion	16,601,797.00	18,497,475.00	19,998,997.00	24,875,821.00	24,875,821.00
	Kapalong	33,644,731.00	36,855,927.00	39,282,628.00	47,777,068.08	45,228,527.00
	New Corella	11,690,046.00	13,000,717.00	14,050,273.00	18,220,535.00	18,150,084.00
	Santo Tomas	17,018,694.00	19,075,445.00	20,719,545.00	26,479,721.00	31,618,420.50
	Tagum	27,970,028.00	31,689,338.00	34,409,812.00	44,687,115.00	55,000,000.00
	Talaingod	9,435,335.00	10,342,841.49	11,045,163.60	14,277,735.00	14,222,180.00

Sources: Provincial Treasurer's Office

Notes: 1/ The ₱90,567,248 will be transferred to Compostela Valley. The 1998 figure for Davao del Norte is purely estimate for June-December revised budget.

1998 figure shows the estimated amount considered in the approved Annual Budget.

Based on the income statement of the province, available funds of the province are mainly spent to cover personnel salaries, benefits, the MOOE and capital expenditures. The provincial government's combined income from IRA and its tax, and non-tax revenues are just sufficient for its operating, capital and non-office expenses. Thus, there is little surplus income that can be tapped for additional capital expenditures.

For the planned capital expenditures of the province, 20% Development Fund (DF) of the IRA are appropriated. The percentages allotted as the DF are the minimum requirement that should be arranged for capital projects as stated in the memorandum circulars of the DILG.

Table 6.2.3 presents allotted funds for capital expenditures (20% DF) between 1994 and 1998. Referring to the amount of actual expenditures from 1995 to 1998 in use of 20% DF of the

province, the allotted DFs were sufficient to cover the actual expenditures only in 1996 and 1998 (as projected). In 1995 and 1997, the allotted amounts were not sufficient to cover the capital expenditures. In 1998, it is projected that the 20% DF may be adequate to cover the capital expenditures of the province, since the projected figure is much higher (at ₱50.0 million) than what was so far disbursed as of the second quarter of the year which is only ₱3.2 million or 6.4% of the 20% DF for capital outlays. There were no loans incurred in 1994 and 1995, and the province has not received any grants. (Refer to Table 6.2.1).

Table 6.2.3 Allotted Funds for Capital Expenditures (20% DF), 1995-1998

Unit: Pesos

Year	IRA of the Province (a)	Planned 20% DF (b)	Expenditures on 20% DF (c)	Surplus/(Deficit)
1995	239,106,194.80	47,821,238.96	64,781,640.91	(16,960,401.95)
1996	257,812,817.78	51,562,563.54	34,130,392.47	17,432,171.07
1997	325,892,402.58	65,178,480.50	111,616,832.06	(46,438,351.50)
1998 *	326,386,510.00	50,061,435.80	3,227,077.68	46,834,358.12

Source: Provincial Treasurer's Office and Provincial Accountant's Office.
Note: * (a) Actual (Jan-May) ₱135,940,705.00 plus estimates (June-Dec) ₱99,878,556.75
(b) Actual - 27,188,141.00 plus estimates - 19,975,711.35
(c) Actual - ₱1,367,077.68 plus estimates - ₱1,860,000.00
Surplus(Deficit) = (actual of ₱25,821,063.32 plus estimates of ₱18,115,711.35

6.2.3 Financial Indicators

In order to determine the debt servicing capability of the province, the formula used by the Bureau of Local Government Finance (BLGF) under the Department of Finance (DF) was employed. It takes into account the regular income of the LGU referring to revenues (real property and business taxes), receipts from economic enterprises, and fees and charges that are collected regularly. Receipts from borrowings, grants and inter-fund transfers are not considered as regular income.

The following is the formula adopted by BLGF in computing the debt servicing capacity, where the average annual growth rate to be used should not exceed 15%, according to the MDF Policy Governing Board Resolution 4-95.

DSC =[{RINC 1 (1+AGR) + RINC 1} + IRA 2] x 20% - AMORT
Where:
DSC = debt servicing capacity of the LGU
RINC = regular income
AGR = average growth rate
IRA = internal revenue allotment
20% = debt servicing ceiling percentage imposed by the Local Government Code of 1991 under Section 324 (b).

AMORT = amortization of the LGU's outstanding loan
1 =current year
2 =preceding year

Based on the above formula, the amount of the debt servicing capacity of the provincial government was computed to be ₱80.5 million for the year 1998. This amount reflects the maximum loan that can be availed of from MDF. It is reported that there exists a loan amortization at present. The IRA of the province is projected at ₱326.386 million, however portion of this amount will be transferred to Compostela Valley. A reduction in the projected income is also notice.

6.3 Past Public Investment and Present Plans

6.3.1 Past and Current Annual Investment Plans

The past and recent development of the water supply and sanitation sector in the province was undertaken by the provincial government, Water Districts, DAR, DSWD, DILG and DPWH. The fund from the CDF (Countrywide Development Fund) was also availed of. Water supply sector obtained ₱ 59.39 million during the period 1995-1998 from various agencies, while the sanitation sector had only ₱187,540.00. Thus, actual amount of public investments to the WATSAN sector amounted to ₱59.57 million. (refer to Table 6.3.1). The largest investment registered so far is those for Level II water supply with an aggregate amount of ₱23.25 million during the said period, followed by Level I and Level III water supply with ₱ 22.26 million and ₱ 13.87 million, respectively.

Table 6.3.1 Actual Amount of Sector Investment to the Province by Concerned Agencies

Unit: Pesos

Funding Category		1995-1998				
Agency	Funds	Level I	Level II	Level III	Sub-Total	Sanitation
DWSD/CIDSS		350,000	-	-	350,000	
DILG – PAF		447,510	-	-	447,510	
DPWH	Foreign Fund	60,000	-	-	60,000	
	Local	949,000	6,050,018	9,342,116	16,341,134	
LWUA				301,316	301,316	
DOH	Foreign Fund Local	n.a.	n.a.	n.a.	n.a.	
DILG/ DAR		1,114,000	8,423,000		9,537,000	
PROVINCE		16,328,942	8,779,270	4,231,644	29,339,856	
MUNICIPALITY		3,013,000	-	-	3,013,000	187,540
TOTAL		22,262,452	23,252,288	13,875,076	59,389,816	187,540

Source: Provincial Government and Agencies
Note: There is no available breakdown by agency. Figures are combined funds from DPWH (Foreign/Local), Province, Municipalities and CDF.

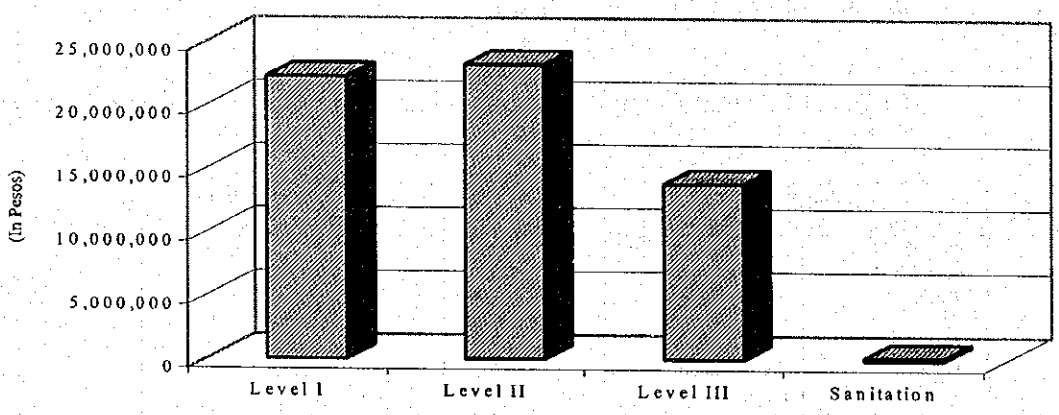
Table 6.3.2 Annual Investment Plan, 1995 – 1998

Unit: '000 Pesos

Item	1995	1996	1997	1998	Total	% Share
Construction (DW, SW, Spring Box, Reservoir, Tank)	3,162.57	11,694.50	5,313.88	2,036.10	22,207.05	36.90
Various Foreign Assisted (OECF)	60.00	-	83.51	364.00	507.51	0.84
Various Foreign-National Assisted (DSWD/DAR-WB)	350.00	-	-	1,114.00	1,464.00	2.43
National (/DPWH/CDF/DILG/PAF2)		250.00	588.51	558.10	1,396.61	2.32
Various Local Funding (Prov / Mun.)	2,752.57	11,444.50	4,641.864		18,838.93	31.30
Construction of Rain Collectors/Water Tanks			303.00	200.00	503.00	0.84
Various Local Funding			303.00	200.00	503.00	0.84
Spring Development with L2 / Supply of pipes	3,352.21	1,508.27	8,758.37	1,189.42	14,808.27	24.61
National (DPWH)		990.00	3,893.82	1,165.20	6,049.02	10.05
Various Local Funding (Prov./Mun.)	3,352.21	518.275	4,864.551	24.22	8,759.26	14.56
Spring Development with L3	2,404.51	1,257.76	9,182.85	9,815.82	22,660.94	37.66
Various Foreign Assisted (DAR/WB)				8,423.00	8,423.00	14.00
National (DPWH/CDF)		1,062.30	7,338.82	1,242.82	9,643.94	16.03
Various Local Funding (Prov./Mun.)	2,354.51	80.00	1,679.03	100.00	4,213.54	7.00
Water Disinfection/Chlorination of Water Sources (Prov)	50.00	50.00	50.00	50.00	200.00	0.33
Const. of School/Public Toilet (Prov)		65.46	115.00		180.46	0.30
Total	8,919.29	14,460.53	23,558.10	13,241.34	60,179.26	100.00

Source: Provincial Government and Agencies.
Note: There is no available breakdown by agency. Figures are combined funds from DPWH (Foreign/Local), Province, Municipalities and CDF.

Figure 6.3.1
Actual Amount of Sector Investment to the Province
by Concerned Agencies, 1995-1998



(1) Budgetary Allocation to the Sector

The Budget Office of the province consolidates the budget proposal submitted by all offices of the Provincial Government. While, the DBM issues a Local Budget Memorandum every October of the preceding budget year to guide the provinces in their budget preparation. The sector obtains allotment from the 20% DF allocation by the Provincial Development Council (PDC).

Once, the budgetary arrangement is completed, the local chief executive (Governor) endorses it to the SP for approval and appropriation. The SP usually approves the budget, ideally before January of the budget year. In case the budget is not approved, the province operates on a re-enacted budget, which is based on the last year's budget, until the budget for the current year is approved.

(2) Capital Expenditures in the Sector

The projects programmed for implementation in the province by sector, by funding source, and by implementing agency are consolidated and presented by the PPDO in the Provincial Annual Investment Plan (AIP). The AIP is based on the planned investment of the province, as well as on the submission to the PPDO from the municipalities on their planned investments for the coming year. The AIPs of Davao del Norte for the Sector from 1995 to 1998 are summarized in Tables 6.3.2 and 6.3.3.

Table 6.3.2 shows the annual planned activities in the water supply sector; the corresponding funding sources and the amount of investment from 1995 to 1998, while Table 6.3.3 summarizes annual sector investments by service level. Levels II & III had the largest fund allocation, particularly in 1996 with the amount of around ₱10.17 million. During the period 1995 to 1998, a cumulative amount of ₱50.11 million was planned to be mainly invested for water supply, while only ₱387,540 was planned for sanitation.

In the AIP of the province, a total investment cost of ₱50.497 million was planned both for water supply and sanitation sector during the period of 1995-1998. But the actual expenditures for the sector out of the 20% DF of the province were very small with ₱18.036 million or only 35.7% of the planned sector investments. (refer to Table 6.3.4).

The AIP of the province for the years between 1995 and 1998 included the repair and maintenance items of water supply facilities. However, no such items were included in 1996. It is important to consider the budget for repair and maintenance of the facilities.

6.3.2 Past and Current Breakdown of 20% Development Fund

The allocation of the 20% DF is guided by DILG Memorandum Circular No.95-215 as amended by Memorandum Circular No. 96-263 issuing 'the Policies and Guidelines on the Utilization of the DF and other related matters'.

As presented in Table 6.3.4, among the sectors, the infrastructure sector obtained the largest share of actual disbursements, 60.7% and 71.5% of the 20% DF in 1997 and 1998 respectively. (e.g. ₱35.78 million out of ₱50.06 million in 1998). However, the water supply and sanitation sector's share was very minimal with only 8.0% of the 20% DF in the annual average from 1995 to 1998. Refer to Figure 6.3.4. In 1998, actual disbursements to the WATSAN sector are very low, which is only ₱44,244. Such low amount of disbursements may have been due to delays in processing of documentary requirements and project implementation caused by bureaucratic procedures.

Table 6.3.3 Sector Allocation in the Annual Investment Plan, 1995-1998

Unit: '000 Pesos

Item	1995	1996	1997	1998	Total
Level I					
Local	200.00	7,635.00	2,835.00	538.00	11,208.00
Level 2/3					
Local	1,250.00	10,173.72	5,152.53	6,926.00	23,502.25
Other					
Loan-DPB/LBP/Equipt: Rotary Drilling Mach.	15,000.00				15,000.00
Repair/Maintenance	100.00		200.00	100.00	400.00
Sub-Total Water Supply	16,550.00	17,808.92	8,187.53	7,564.00	50,110.45
Health Center	159.54		110.00	118.00	387.54
Sub- Total Sanitation Health	159.54		110.00	118.00	387.54
Grand Total	16,709.54	17,808.92	8,297.53	7,682.00	50,497.79

Source: Provincial Planning and Development Office.

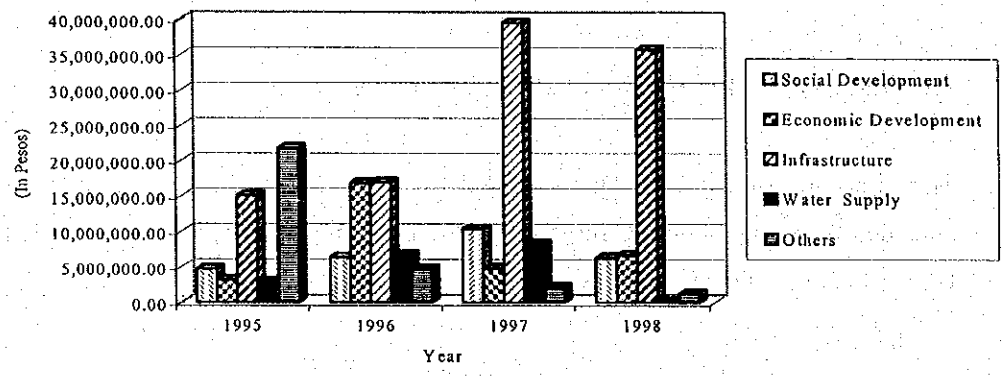
Table 6.3.4 Allocation of the 20% Development Fund, 1995-1998

Unit: Pesos

Year	Actual 20% Dev't. Fund	Actual Expenditures						
		Social Development	Economic Development	Infrastructure	Water Supply	Others	Sub-Total	% of Water Supply to 20% DF
1995	47,821,238.96	4,750,000.00	3,195,671.00	15,090,000.00	3,000,000.00	21,785,567.96	47,821,238.96	6.27
1996	51,562,563.54	6,400,000.00	16,842,000.00	16,944,663.46	6,700,000.00	4,675,900.00	51,562,563.46	12.99
1997	65,178,480.50	10,375,000.00	4,830,000.00	39,581,700.00	8,292,698.00	2,099,082.50	65,178,480.50	12.72
1998	50,061,435.52	6,316,083.52	6,716,950.96	35,784,710.48	44,224.24	1,199,466.60	50,061,435.80	0.09

Source: Provincial Planning and Development Office.

Figure 6.3.4
Actual Expenditures for Allocation of the 20% Development Fund, 1995 - 1998



6.3.3 Existing Plans of the LGUs for the Sector

The Provincial Government has been undertaking various programs for the water supply and sanitation sector, and there are specific projects to be implemented at present. The following are the items to be budgetary arranged.

(a) Logistic support with required funding

The LGUs through the course of project implementation shall ensure provision of adequate logistic supports with financial arrangements. The LGUs have not given priority to the requirements under the budgetary constraint. The AIP needs to include the plan for the logistic support entailing manpower and vehicle allocation.

The PPDO has been following up the loan repayments by the different BWP units (under the Barangay Water Program) since the program completion in 1986. In 1998, this function was transferred to the Provincial Cooperative Development Office (PCDO). However, these BWP units will have to be reorganized as cooperatives in order for the PCDO to extend assistance and technical supervision. Less attention has been given by RWSAs for loan repayments. As of September, 1998 a total of ₱ 9.6 M is recorded as RWSA unpaid obligation.

There is no WATSAN Center established yet for water supply and sanitation. However, a section for water supply was established under the PEO to implement WATSAN projects.

(b) Raising funds and provision of subsidies to support capital development.

The province provides the subsidies to support capital development at the municipal and barangay levels through its 20% DF. However, barangays and municipalities that request funding must be prompt in submitting the necessary documents to PPDO for processing. Out of the 20% DF, the province may provide logistics for manpower requirement for devolved functions.

(c) O & M Assistance

It is the policy in the WATSAN sector, that whatever amount of O&M expenses incurred on major repairs will have to be shouldered by the beneficiaries. However, the provincial government assistance is also sought by LGUs.

6.4 LGUs' Present Financing Sources and Management Participation in the Sector

6.4.1 Cost Sharing Arrangements / Counterpart Funding

The implementation of water supply projects in the province was previously undertaken by DPWH (construction through OECF loan assistance up to 1995) and DILG (BWP - institutional building) and RWDC and Tulungan sa Tubigan Foundation. The DPWH, through its DEOs, still receive requests for assistance from barangay people. This is due to lack of awareness on the part of people regarding the new institutional arrangement and this proved the DEOs' technical ability. The requests, however, are granted on a case-to-case basis, usually if the manpower and budget are available.

The new cost-sharing scheme was authorized in 1998 in accordance with the policy on national government grants. It is stated that "this scheme shall be applied to all new ODA-assisted projects that are currently being packaged in support of LGUs". Programs of central government agencies that involve devolved functions, particularly those that have social and/or environmental objectives are implemented through a cost-sharing arrangement between the central government agency and LGUs. For any central government grants that are provided for the development of Level I water supply systems and sanitation facilities to the limited classes of municipalities, the LGUs and beneficiaries concerned shall share the capital cost required. No subsidies from the central government will be provided for the construction of Level II and III water supply systems.

6.4.2 ODA Assisted Projects and Grant Aid

There have been no ODA funded projects and grants in the province for water supply projects. Other water districts in the province availed of funding through loans that are directly obtained from LWUA.

As of now, there was no NGO counterpart funding experienced by the Province.

(1) Arrangement through Conduits

1) Municipal Development Fund (MDF)

The MDF is a revolving fund created under Presidential Decree No. 1914 to provide LGUs access to foreign loans, assistance or grants. Operations of the MDF, as well as the evaluation and control of local government transactions of the fund, are guided

by the financial policies defined in the Joint Circular No. 6-87 of the DOF, COA and DBM. The policies include, among others, the following:

- On-lending terms for local governments or government corporations to be in accordance with the terms and conditions of the international agreements with foreign financial institutions;
- Loan repayments to conform with the terms and conditions of the corresponding Loan and Project Agreements;
- Annual debt service liabilities to all creditors to be at least 120 per cent of total net annual revenues from all sources after operating costs, unless otherwise provided in a mutual agreement among all parties concerned;
- Repayment to MDF to take precedence over all subsequent borrowings incurred;
- Payment of additional interest, charges and fees on amounts to be relent to local governments may be required by the Secretary of Finance in consultation or agreement with foreign lending institutions and LGUs/Project Cities to cover foreign exchange risks, commitment charges and front-end fees applied on foreign borrowings by lending institutions; and
- Internal revenue/specific tax allotments to be withheld by the DOF in case of default or arrearages for more than three (3) months.

The Policy on accessing loans through the MDF is currently under review by the central government to make the terms and conditions more concessional towards the LGUs.

2) Governmental Financing Institutions (GFI)

In the past, the LGUs could not access financing institutions for direct assistance. But with the devolution of the sector to the LGUs, the LGUs could now access direct financing from banks and other financing institutions.

Among the GFIs through which LGUs can access ODA loans are the Land Bank of the Philippines (LBP) and the Development Bank of the Philippines (DBP). For the LGU to enter into a loan, the respective legislative council (SP for the Province, Sangguniang Panlunsod; SP for the City and Sangguniang Bayan; SB for the Municipality) will authorize the Chief Executive Officer (Governor or Mayor, as the case may be). The collateral that the LGU may use in order to avail of loans from the bank could be any of the following: deposit hold out, public land and assignment of IRA.

In a deposit hold out loan, loanable amount is based on the amount in the time deposit account of the LGU in the bank. The LGU is allowed a maximum loanable amount of up to 90 per cent of the total amount of its time deposit account in the bank. One of the terms for this kind of loan includes deduction of amount due from the LGU's IRA deposited in that bank.

Another condition that the bank usually imposes on the loan is the signing of a MOA between the LGU and the bank, where the LGU guarantees that the loan will be honored despite a change in administration in the next election. Interest rate is not fixed.

Other collaterals accepted by the bank are: public land and assignment of IRA. Interest rate is not fixed but fluctuating depending on the current interest rates prevailing during repayment. Penalty charges are imposed whenever the IRA of the province is delayed.

3) Foreign Lending Agencies

There was no external assistance to the Sector in the province which comes from foreign assisted projects.

6.4.3 LGU-Financed and Managed Waterworks/Water District.

(1) Past Financial Performance of WDs and RWSAs/BWSAs

Five (5) WDs are currently managed in the province, which are the water districts of Tagum, Panabo, New Corella, Carmen and Samal. Tables 6.4.1 and 6.4.2 show the financial indicators and loan status of WDs in 1998, respectively. The WDs adopted progressive charge method and have achieved relatively low efficiency of water charge collection, which range from 55% to 70%. The average monthly consumption per connection/household is 21 cu.m.

Shown in Table 6.4.2, is the status of existing loans of provincial/ municipal waterworks. Tagum WD had the highest loan amount availed to be paid in 25 years. Principal and interest amortization amounts to ₱159,907.00 per month. These WDs have not encountered any delays in repayment.

Table 6.4.1 Financial Indicators of Provincial/Municipal Waterworks in the Province (as of June 1998)

Waterworks	Description						
	No. of Metered Connections	No. of Flat Rate Connections	Average Monthly Rate	Average Consumption per HH	Average Expenditures	Average Revenue	Collection Efficiency
	Nos.	Nos.	Pesos/cu.m.	Cu.m./mo	Pesos/yr.	Pesos/yr.	Percent (%)
Tagum Water District	13,354	-	54.00	277,754	38,200,341	41,609,800	60%
Panabo Water District	398	-	95.75	-	3,090,326	3,090,399	55%
New Corella Water Dist.	439	-	70.00	6,823	746,465	897,728	70%
Carmen Water District 2/	241	-	70.00	-	-	-	-
Samal Water District	-	350	25.00	-	35,000	36,000	60%
Visayan Village Waterworks	590	-	50.00	-	616,576	715,193	80%
Madaum Waterworks	226	-	35.00	4,525	164,564	175,044	60%
La Filipina Waterworks	441	-	48.00	6,500	326,440	369,761	60-70%
Makabayan Village Waterworks	224	-	40.00	-	82,400	90,000	85%
San Miguel Waterworks	312	-	45.00	5,289	280,008	439,884	75%
Floraville Homes Subd.WW	-	100	55.00	-	41,600	42,000	85%
Limbaan Waterworks	-	168	20.00	-	16,800	17,080	39%
Masaoy Waterworks	-	21	10.00	-	32,220	57,000	45%
Magatos Waterworks	97	-	45.00	1,184	51,972	59,959	65%
Maniki Waterworks	357	-	50.00	9,800	526,937	533,548	-
Kapalong LGU Waterworks	106	-	40.00	2,289	107,500	110,000	65%
Gabuyan Waterworks	68	-	30.00	915	14,000	16,000	50%
Narra Waterworks	105	-	30.00	-	36,000	36,000	60%
Kimamon Waterworks	130	-	30.00	-	132,000	132,988	65%
Tibal-og Waterworks	2,569	-	45.00	40,315	2,796,427	3,041,927	85%
Bobongon Waterworks 4/				-	-	-	-
Balagunan Waterworks 4/				-	-	-	-
Marscon Waterworks	339	-	35.00	-	206,600	250,000	80%
Magsaysay Waterworks	84	-	50.00	1,004	43,400	46,124	50%
Minda Waterworks 3/	176	-	Free	-	-	-	-
Toril Waterworks	70	-	10.00	-	10,000	12,000	80%
Cogon Waterworks	60	5	10.00	-	7,500	8,000	60%
San Antonio Waterworks 5/	-	15	Free	-	-	-	-
Libuak Waterworks	-	3	Free	-	-	-	-
Anonang Waterworks	-	18	5.00	-	8,000	8,400	50%
Pangubatan Waterworks	-	13	5.00	-	4,000	4,806	50%
Adecor Waterworks	-	28	5.00	-	1,600	1,600	80%
Del Monte Waterworks	-	10	25.00	-	26,000	28,000	85%
Guilon Waterworks	-		-	-	8,500	10,000	85%
Tagbitan-ag Waterworks	-		-	-	8,500	9,200	70%
Tagbay Waterworks	-		-	-	7,000	7,200	70%
Sion Waterworks	-	7	5.00	-	5,000	5,000	60%
Kaputian Pob. (South) Ww	-	130	5.00	-	900	900	Voluntary
Kaputian Pob. Ww	-	185	10.00	-	7,000	7,000	30%
Sitio 16, Kaputian Pob Ww	-	12	5.00	-	5,200	7,560	90%
Libertad Waterworks	-	15	5.00	-	4,500	5,000	50%
San Isidro Waterworks	-	6	5.00	-	2,500	2,500	60%
Kanaan Waterworks	9	-	15.00	-	14,000	16,000	65%
Tagbaobo Waterworks	-	13	5.00	-	5,000	5,000	50%
San Remegio Waterworks	-	13	5.00	-	6,000	6,500	60%
Asuncion Waterworks 1/	-	200	30.00	-	120,360	63,000	60%
Sto. Nino Waterworks	-	5	10.00	-	9,000	9,000	65%
Sawata Waterworks	-	10	10.00	-	6,000	6,000	65%
Mabunao/Panabo	-	11	-	-	76,000	108,000	10%
Sindaton/Panabo	-	3	-	-	14,600	16,806	90%
Tibungol (Tadeco) 6/	-	9	-	-	-	-	-

Note: * Just started, completed August 30, 1998.
1/ Subsidized by LGU
2/ Newly created
3/ Subsidized by the government
4/ Newly constructed
5/ Free /Brgy. Council
6/ Banana Plantation

Table 6.4.2 Loan Status of Provincial/Municipal Waterworks (as of June 1998)

Waterworks	Description			
	Total Loan Availed (1,000 Pesos)	Remaining Payment Period Months	Average Monthly Amortization	Current Arrears
New Corella WD	500,000,000	5 years	11,249.00 / mo	-
Carmen WD	7,264,763.34	26 years	65,264.00 / yr.	-
Panabo WD	2,929,767.77		36,602.00 / mo	-
Tagum WD	22,967,303.67	25 years	159,907.00 / mo.	-
Samal WD	Still on the process			-

Source: Water District and other Water Works.

6.5 Existing Practices by the LGU on Cost Recovery

6.5.1 Capital Cost

In the previous arrangements, the capital cost for Level I systems was free to the community, while operation and maintenance was the responsibility of the association. As for Level II systems, the capital cost was shouldered by the RWSA through loan or grants. Water charges collected by each association cover the cost of operation and maintenance and loan amortization. According to the Loan Department of LWUA, the new loan disbursement to RWSAs has been stopped for the last couple of years.

For Level III system, WDs or RWSAs bear the entire capital cost financed by LWUA through loans with concessional terms of 8.5%-12.5% interest rate and repayment period extending up to thirty (30) years. Less capable WDs are granted soft loans that are interest free during the first five (5) years' operation. In the occasion of the first assistance by LWUA, the loan for the full investment required could be provided for the WDs. For the expansion/rehabilitation works of the WDs, 90% of required investment may be granted by a loan and the remaining 10% shall be arranged by the equity of WDs. The cost of amortizing the loan and operation and maintenance of the system is recovered through monthly water bills. In case of LGU's operating Level III systems, the capital cost is managed by the LGU using part of DF and other financial sources (borrowings and aids).

Regarding the sanitation sector, the construction of the superstructure and the depository of household toilets is through self-help.

6.5.2 Operation and Maintenance Cost

The operation and maintenance cost for Level I and II water supply systems is envisioned to be the responsibility of the users. As such, the users shall form an organization (or association) to handle the collection of water charges.

When DPWH had been undertaking the construction of Level I water supply facilities, the DPWH through DEOs assisted to form many BWSAs. However, most of these BWSAs are no longer functioning, due to non-collection of water fees. As a consequence, the users had to go to the LGUs (usually barangay or municipal) to address the problem. In some cases, the users likewise requested the DEOs for assistance.

Although the DPWH had no budget for operation and maintenance, it extended assistance in the form of materials (such as gaskets or joint pipes) from their supplies, if these items are available. Because of this situation, the emphasis was placed on the need of monthly contributions from the users for the O&M.

Based on the group interview survey results, majority of respondents are presently paying for their water supply with 85 % of them or 35 respondents indicated that they were paying below ₱5.00. Only five respondents claimed they pay above ₱ 50.00 while one respondent indicated having paid an amount of about ₱10.00. For respondents who were paying water fees, the majority or 76% (31 respondents) agreed that the fees being collected were enough to operate and maintain the facilities. Only 22% or 21 respondents indicated that the water fees are inadequate since they consider the water fee to be low and also not all water users pay water fees.

Cost recovery for Level III systems, particularly those covered by Water Districts is managed through different systems. The households covered by the Water District can be disconnected in case no payment by the users.

The Tagum and Panabo Water Districts are charging the amounts of ₱5.84 and ₱5.13 per cu.m., respectively. The water rate structure is based on LWUA's guidelines for water rate setting. Water rates are socialized, based on O&M, operating expenses and capital expenditure requirements of the system for the period, and it should not exceed 5% of the low-income group's household income. Water rates are kept minimal since the Water District should be service-oriented and not profit-oriented.

6.6 Affordability of Users

This sub-section presents the affordability of users by sector service level. However, base information for the analysis is limited to that gathered from field survey at selected barangays and from the water districts based in the province.

6.6.1 Capital Cost Contribution

Based on the group interview survey results, majority or 51% of the respondents (21 respondents) participated in the construction of previous WATSAN facilities by providing labor, sites and materials.

For future projects, however, all the respondents indicated that they would participate and/or contribute in all activities such as the formation of BWSA, formulation of water rates, selection of sites, construction of facilities and in the operation and maintenance of water supply facilities. All respondents except one, indicated willingness to contribute in cash or kind for the construction of WATSAN facilities in their respective barangays. The majority or 80% (33 respondents) would be willing to provide free labor, 34% or 14 respondents were willing to provide materials, and 29% or 12 respondents would donate sites.

6.6.2 Operation and Maintenance Cost

About 98% of respondents are presently paying for their water supply. Of those presently paying, 85 % or 35 respondents indicated that they were paying below ₱5.00. Only five respondents claimed they pay above ₱50.00 while one respondent indicated having paid an amount of about ₱10.00. For respondents who were paying water fees, the majority or 76% (31 respondents) agreed that the fees being collected were enough to operate and maintain the facilities. Only 22% or 21 respondents indicated the water fees inadequate since they consider the water fee to be low and also not all water users pay water fees.

About 49 % of the respondents could not determine which group/s in the community shoulder the operation and maintenance of the water supply facilities. About 51% or 21 respondents said it is the barangay council that is responsible. Almost all the respondents expressed willingness to pay/contribute for the operation and maintenance of future facilities.

Of those who are willing to pay, the majority or 69% (28 respondents) claimed they could only pay not more than ₱5.00. About 27% or eleven respondents agreed to pay water fees ranging from ₱ 6.00 to ₱10.00.

In the water districts or Level III waterworks, O&M expenses are basically covered by the user fees depending on the water consumption amount by water user category. The water charge system was established by LWUA to compel water districts to be self-sufficient, financially viable and be able to repay any loans obtained to improve water supply services.

Table 6.6.1 presents the affordability of households by service level. At present, the current water bills in the province seem to be within an affordable range based on experience, although the actual income level varies from municipality to municipality and barangay to barangay (urban barangay population have higher income than those in rural barangays, because of the more diverse economic and commercial activities).

On the other hand, the construction cost of private toilet seems to be expensive as compared with the family income. The estimated cost of flush type toilet facility is about 5.7 times higher than the median monthly family income in the province and since this is the case, subsidy may be provided by the LGU concerned.

Table 6.6.1 Affordability in Water Supply and Sanitation Services

Income/ Level of Service	Amount (Pesos)	% to Monthly Income	Affordable Range (%) [4]
Median of Monthly Income [1]	3,738.42	-	-
Average Level III: Monthly Water Bill [2]	62.95	1.68	5.0 or less
Average Level II: Monthly Water Bill	30.00	0.80	2.0 – 3.0
Mo. Level 1 Expenditures	15.00	0.40	1.0 or less
Private Toilet Construction Cost – Flush Type Toilet [3]	21,300.00	5.70	-

Notes:
[1] 1994 Family Income and Expenditures Survey, NSO. Average income (mean) is P59,584 and median income is P44,861. For Region XI, the median income is P44,861 and mean income is P59,584.
[2] Data from PSPT; It is assumed that 21 cu.m. will be consumed per family.
[3] Current prices estimated in this study
[4] Based on the experiences mainly from LWUA, DPWH and DILG.

Chapter 7

WATER SOURCE DEVELOPMENT

7. WATER SOURCE DEVELOPMENT

7.1 General

The study on water source development covers the entire province in order to come up with water source potential exploitable mainly as domestic water supply. Emphasis is placed on the groundwater availability due to its prevalent use and comparatively conservative development through the future in the jurisdiction of the provincial government. It is also advantageous to utilize groundwater for domestic water supply because of better quality and economical use. Nevertheless, surface water potential of major rivers was studied in terms of quantity (return period flow rate) and quality to provide information for LGU's future use.

A "Groundwater Availability Map" was prepared, which identifies the areas with available potable water sources. The study has two major components: (1) interpretation of existing geological and groundwater conditions and (2) preparation of Groundwater Availability Map to show groundwater potential areas under three categorized areas. Furthermore, standard well specifications by municipality were also established to reflect in the medium-term sector development plan.

The major data used in the study were obtained from concerned agencies (NAMRIA, BMGS, NWRB, LWUA, DPWH and PPDO) and supplemented by the information gathered through questionnaires from relevant local offices in the field (including spring inventories with verifications). The field information directly collected by the Study Team was also used to increase the accuracy of the Map. Among the information, the Geologic Map published by BMGS, the Water Resource Investigation Report and the Well Inventory Database of NWRB are essential for the analysis of geological characteristics, projection of high yielding area and possible area with salt water intrusion, and classification of groundwater potential areas, respectively (details are referred to Table 7.1.2, Data Report).

The Groundwater Availability Map may be used for provincial level master plan and feasibility study at present. However, recommendations on the required investigations were presented for specific areas with scope of survey, as reference for LGUs, to conduct these prior to D/D and construction work. Aside from the requirements, updating the map is a requisite to gain more information on prevailing groundwater conditions using the questionnaires prepared for the study. An annual review and updating of the database will enable the LGUs to implement water source development on a project site basis.

The overview on current groundwater use with the conditions is summarized in Table 7.1.1 (well data collected from each municipality are presented in Table 7.1.1, Water Source Information, Data Report). There are 8,335 shallow wells, 1,452 deep wells and 157 developed springs in the province (functional sources). Majorities of the wells are shallow wells. About 16% of these water sources are public facilities. Of the total existing wells, 95% remains functional at present. In addition to the above sources, 26 untapped springs are accounted.

Table 7.1.1 Existing Groundwater Sources in the Province

Category and Classification	Shallow Well	Deep Well	Spring	Total
1. Water source being availed				
a. Public sources	830	620	138	1,588
b. Privately owned sources	7,505	832	19	8,356
c. Number of water sources	8,335	1,452	157	9,944
d. Profile of different sources	84%	15%	1%	100%
2. Water sources with problems and non-functional wells				
a. Water quality problems*	1,667	0	0	1,667
b. Non-functional	238	296	78	612
3. Spring source information				
a. Undeveloped	-	-	0	0
b. Untapped	-	-	26	26

Note. 1: Number of water sources being availed at present including those with water quality problems.
2: Number of existing water sources with problems: being used, but with water quality problem/abandoned wells.
3: Number of springs availed, but not adequately protected; and those as candidate sources to be developed.
*: Assumed number of sources (unsafe category) based on the study on existing water supply facilities in Chapter 4.
(P): Public spring source.

7.2 Geology

The geologic features of the province generally consist of three districts in terms of groundwater storage and flow types. These districts are Samal and Talikud Islands, the Mindanao Central Cordillera, and lowland hills and alluvial plain located on the central-eastern provincial area.

In the mountainous area of the eastside out cordillera, the volcanic rocks of Late Cretaceous-Paleogene epoch are underlain by Tertiary sediments such as sandstone, siltstone, etc. The structures of this area are dominated by the presence of several and parallel NNW-SSE trending left lateral faults. Samal and Talikud Islands are parts of the piedmont of this cordillera geologically. The plateaus and small hills in those islands are covered by mostly

neritic reef limestone of Plio-Pleistocene epoch with maximum thickness of about 700m.

The chain of active and inactive volcanoes, represented Mt. Hibok-hibok, Mt. Matutum, Mt. Parker, covers the Mindanao Central Cordillera. In this area of the province, the igneous rocks of Late Cretaceous period or younger age are widely underlain by the impervious and tuffaceous sedimentary rocks of Paleogene period. The thrust and normal faults, which are facing the eastside and western slope of this cordillera respectively, are serially distributed from the Gingoog Bay until Mt. Apo.

The lowland hills and central alluvial plain are overlain by unconsolidated deposits such as clay, silt, sand and gravel of Recent age. These formations of lowland hillside area are made by colluvial and terrace in materials from the western mountainous. Alluvial Plain is formed by the Tagum River's erosion and sedimentation, and is considerable the most expectable aquifer in the province. The base depth of recent alluvial formations is more than 90 mbgs.

For the purpose of preparing the Groundwater Availability Map of the province, only rock units significant to groundwater storage and permeability are described briefly. The rock units in the province are classified into three (3) main groups based on the geologic ages. These are, in order to oldest to youngest, the Miocene and Older Systems, the Plio-Pleistocene Series and Recent Deposits. The grouping of rock units is related to their potential as groundwater sources. The younger rocks are considered the most important to groundwater because of their porosity and permeability relative to the older rocks. The distribution of these rock groups is shown in Figure 7.2.1. The Geological Map of the province and their geological features are described below.

(1) Miocene and Older Systems

Late Miocene rock units consist of tuffaceous conglomerate, sandstone and shale. The clastic rocks are porous and moderately indurated with limy clay as main cementing material. The basal conglomerate and sandstone are derived from basaltic. Its terrain is gently rolling, partly cultivated. Early to Middle rock units include siltstone, sandstone, conglomerate with thin bedded limestone, coal and basalt, lava reef limestone and pyroclastic. They are folded and faulted. These rocks are dense and relatively impervious when fresh. They form moderately to very steeply sloping ridges and mountains that are partly forested and partly cultivated. Groundwater occurs in the conglomerate and sandstone, which may become dried-up during droughts.

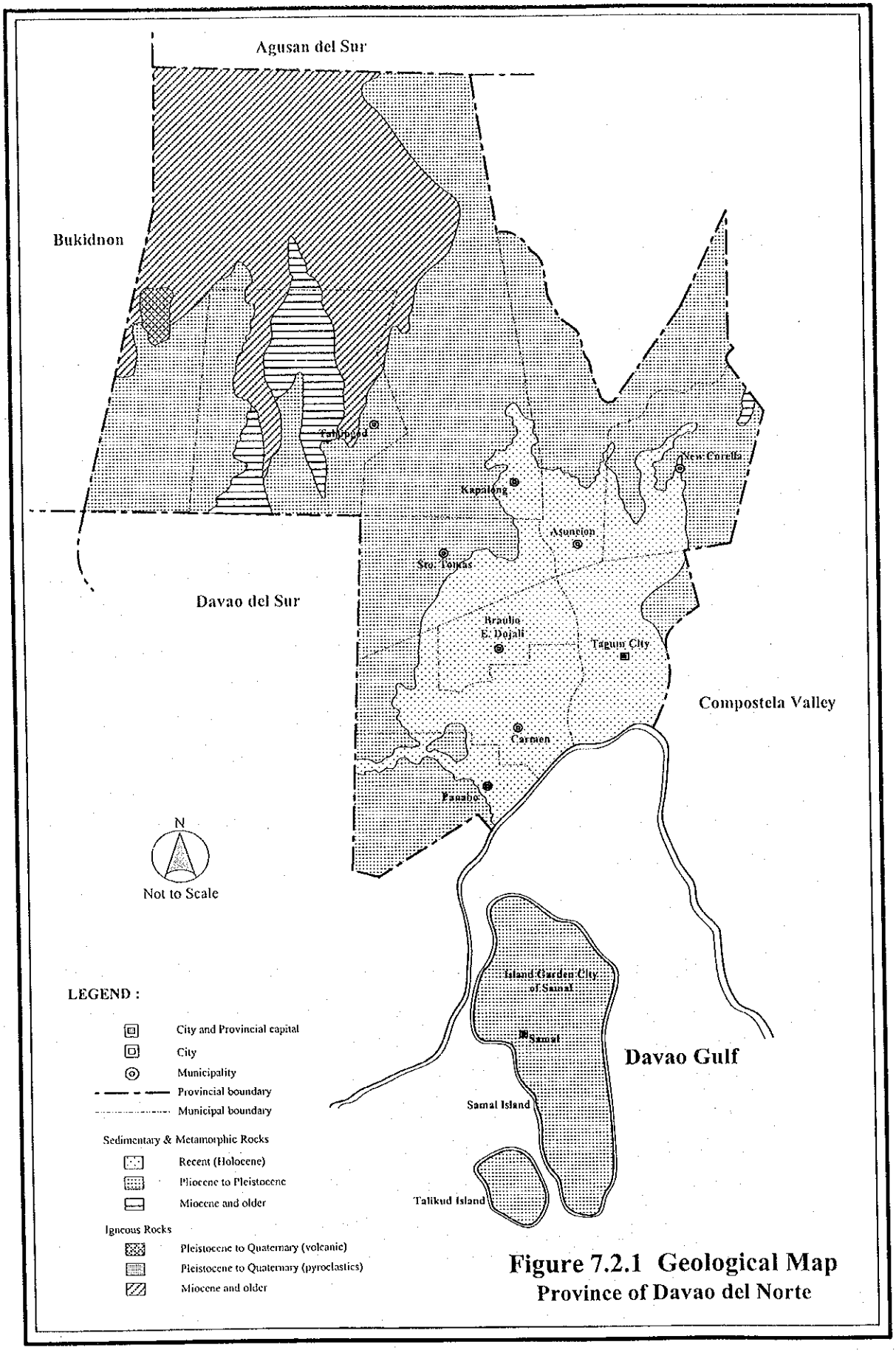


Figure 7.2.1 Geological Map
Province of Davao del Norte

Rock units of Miocene and older systems have impermeability. Most of them are classified as aquicludes. Paleo-Eocene rock units consist of dense, relatively impervious mudstone, sandstone, calcarenite and limestone. It is partly altered and intercalated with basalt-andesite flows and tuffs. It is faulted, folded, and intruded by diorite. It occurs in the rugged forestry mountains. Undifferentiated is intercalated with the Cretaceous to Paleogene lava flows. It contains of dense, relatively impervious tuffaceous mudstone and greywacke that have been partly metamorphosed. It is exposed in the rugged forestry mountain ranges. Pre-Cretaceous-Cretaceous schists are the basement rocks, which consists of piedmontite schists, quartz-chlorite-epidote schists and less commonly, green amphibolite. They were mostly derived from sediments, the latter from basic lavas. Tension fractures and shear breaks occur. Paleocene peridotite is made up of several varieties portions of which are serpentinized. It intrudes the older rocks in the western border. It is faulted and well fractured. It is yellowish dark green, dense consisting of olivine, clinopyroxenes and minor chromite. Potential groundwater is possible in the fractured and/or weathered mantle. It may become dewatering during draughts.

(2) Plio-Pleistocene Series

Sedimentary rocks of this series have various range of the permeability. Pliocene to Pleistocene Limestone is partly marly to coralline limestone that is porous, medium bedded to massive dirty white to creamy, buff and light gray. Its exposure has basal, conglomerate, sandstone, and shale. Samal Island is mostly limestone with maximum thickness of about 700 m and/or as thin as 5 m in some areas. Pliocene to Pleistocene clastic rocks consists of conglomerate, sandstone, shale, tuff and thin limestone. They appear to be greenish gray and underlie the alluvium in Panabo and Tagum. They are exposed as hills and ridges with gentle to moderate slopes. The watersheds are mainly cultivated to the usual food crops partly forestry or open grassland.

(3) Recent Deposits (Holocene Series)

This formation consists of outwash, valley fill, river and coastal deposits of clay, silt, sand, gravel, corals and other marine carbonates. The detritals are derived from older rock formations. These unconsolidated, partly compacted but un-cemented deposits are forms less than 1 to 20 meters thick, possibly thicker in some buried river channel ways.

7.3 Groundwater Sources

7.3.1 Classification of Groundwater Availability

For planning purpose, the provincial area is divided into the following sub-areas in term of

groundwater availability.

(1) Shallow well area

Shallow well area is defined in this study as an area where solo shallow well is available. These areas have water bearing rock formations extending not more than 20 m in depth from the ground surface. Shallow well areas are usually located in alluvial and coastal plains, where recent unconsolidated materials overlie impervious rocks at shallow depth. The extent of completely shallow well area is limited, because most of the recent formations are thick or deposited on the Late Plio-Pleistocene series that usually have multiple aquifers located at greater depths.

(2) Deep well area

In deep well areas, the lower aquifers are located more than 20 m from the ground level. These areas could be found in portions underlain by the Plio-Pleistocene series and Recent formations. Most of these areas have more than one aquifer occurring at various depths. Areas where both shallow and deep wells could be developed are categorized as deep well areas.

(3) Difficult area

These are areas not suitable for well development. The areas under this category largely consist of rock formations older than Miocene epoch. The groundwater availability in the aforesaid rocks is very low and usually released in the opened rock fractures. Springs are the common sources of water supply in these areas.

In addition to the above classification, potential areas to have high yielding deep aquifers are also presented based on NWRB's geo-resistivity survey.

7.3.2 Groundwater Availability in the Province

The Groundwater Availability Map is presented in Figure 7.3.1. The major databases used in the preparation of the map were obtained from BMGS and NWRB. The methodology and study procedures with respective outputs are discussed in 7.3.2, Supporting Report.

Technical information on the wells by municipality is also shown in the Data Report. The groundwater development potential areas in the province through the future are summarized below.

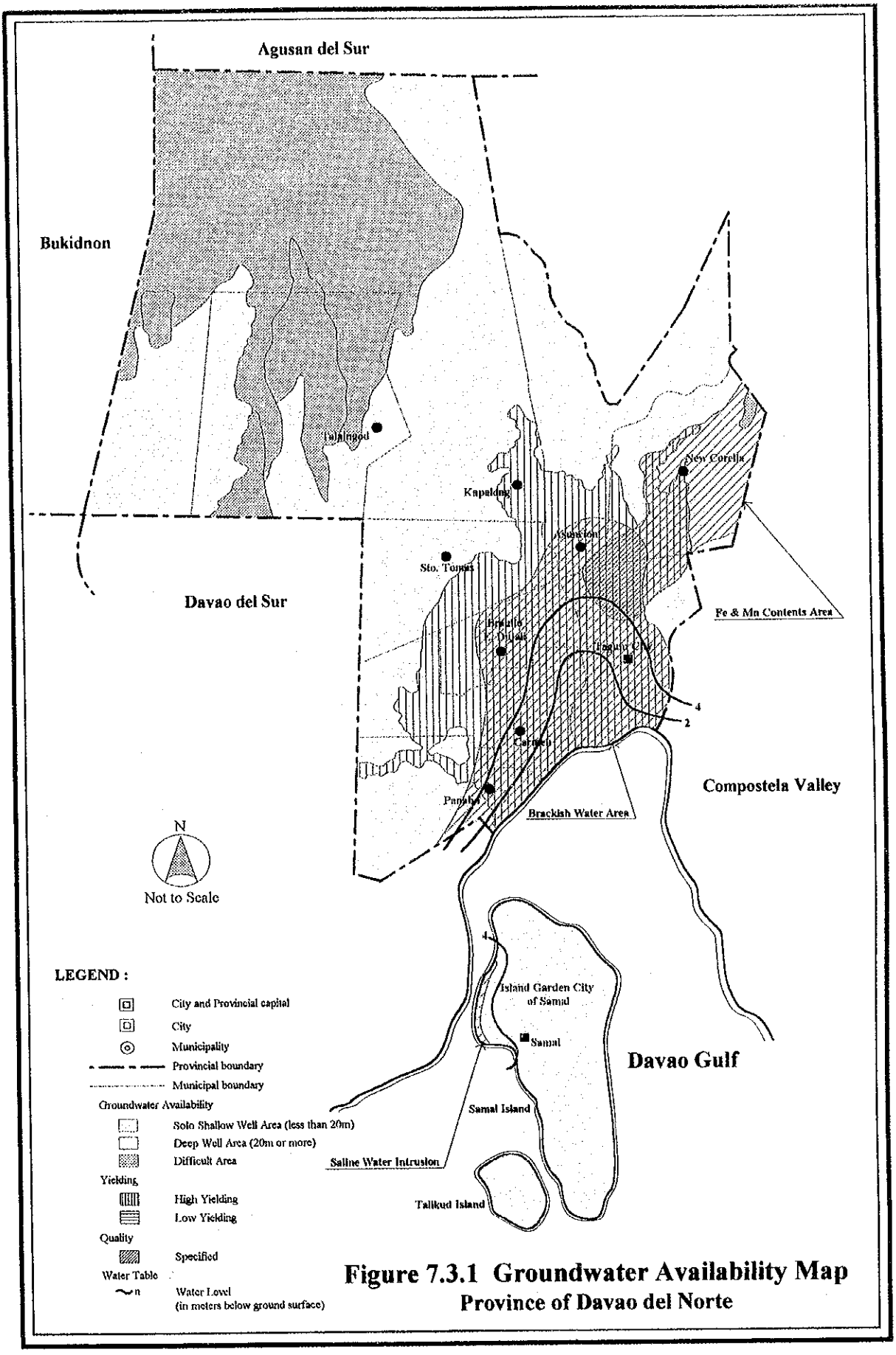


Figure 7.3.1 Groundwater Availability Map
Province of Davao del Norte

(1) Shallow well area

The province has no solo shallow well area. The development of shallow wells is, however, possible in the "Deep Well Area" (recent alluvium and beach deposits), where shallow aquifers usually occur. The shallow wells in the province are driven to an average depth of 14.8 m (8.9 m to 19.5 m). These wells have average static water level of 4.7 mbgs (2.9 m to 6.4 m) and average specific capacity of 0.4 lpsm (0.1 lpsm to 0.9 lpsm).

(2) Deep well Area

The deep well area covers approximately 80% of the province, widely distributed in the river basins of Tagum and Davao Rivers, and in the islands of Samal and Talikad. The deep well area is composed of alluvial plain and lowland hills made of Plio-Pleistocene sediments. The alluvial plain is composed of recent deposits of clay, silt, sand, and gravel, which forms a groundwater storage basin for some aquifers. While, the sedimentary formations of Plio-Pleistocene epoch consist of conglomerates, sandstone, shale, tuff and limestone.

Considering the geological formations, the alluvial plain is categorized as a high potential area for deep well development. In alluvial plain, the average depth of the existing deep wells is about 57 m with average water level of 6.8 mbgs and the average specific capacity is 1.6 lpsm.

In the sediment area made of Plio-Pleistocene series, the average depth of the existing deep wells is 74 m with an average water level of 51.5 mbgs and a specific capacity of 0.5 lpsm.

(3) Difficult area

About 20% of the provincial area is classified as a difficult area to exploit groundwater. Such areas are characterized by mountainous in the northwestern side of the province.

The geology is made up of 1) volcanic lava flow of Cretaceous period to Paleocene epoch, 2) well-compacted tuffaceous sediments of Oligocene to Miocene epoch including sandstone, shale and conglomerate, 3) volcanics as basalt-andesite plug of Pleistocene to Quaternary. These rocks and formations are in dense, massive and consolidated conditions and have impervious characteristics. The groundwater occurs only in fissures or fault fracture zones.