

36777

Rural Growth and Development Revisited Study

**RURAL INFRASTRUCTURE DEVELOPMENT AND
SUSTAINABILITY**

by

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Introduction

1. Introduction

1.1 Rural Infrastructure in General

Rural transportation infrastructure is an essential factor in spurring the growth of agricultural production through the reduction of marketing costs through improved market access, contribute to poverty alleviation and growth, and accommodate the mobility of society in general. In an archipelagic configuration such as the Philippines, rural transport involves both land and sea transport networks, and to a limited extent, air transportation. Increasing rural road length and density has been identified as a major factor in promoting poverty reduction and local development and growth in several country growth and poverty reduction studies. The rural road network is therefore of primary interest, but updated and reliable statistics on quality and condition is almost non-existent. Its provision has been devolved to the Local Government Units (LGUs) as mandated by the Local Government Code of 1991, a responsibility it is ill-equipped and ill-manned to undertake coupled with the lack of technical expertise in roads planning. Equally frustrating is the lack of reliable and updated data/information on the availability of rural transport services, such as the land and sea modes. The bulk of transport services availed of by the rural farmers and traders are either used for both people and goods, used in production, the carriage of goods and people or purely for goods carriage. Unfortunately, other than the annual vehicle registration statistics released by the Land Transportation Office, it is extremely difficult to accurately determine the capacity of rural transport modes in the carriage of agriculture products.

Irrigation investments have also been identified as one of the drivers of agricultural growth. Even the provision of this basic of rural infrastructure is in a state of disarray as the provision of communal irrigation systems have been devolved to the Local Government Units (LGUs). Largely without any technical expertise in the planning, implementation and operation of irrigation systems and a local engineering office that is inadequately staffed, funded and focused on other various local infrastructure projects, LGUs have been complacent in funding and undertaking communal irrigation systems, leaving the national government with no recourse but to reassume responsibility, albeit discretely, of this devolved function. Various irrigation management structures exist for both the national and communal systems but their relative efficiency in financially and technically sustaining such systems is questionable. In fact, the almost widespread failure of the irrigators' associations all over the country has now even threatened the institutional survival of the National Irrigation Administration, the agency charged with planning, providing and maintaining national irrigation systems and the planning and provision of communal irrigation systems.

Other rural infrastructure such as electricity, communication facilities (telephones (landline and cellular), radio and television, etc.) piped water, and their quality/prevalence/availability are also important to rural welfare. However, these may be outside the scope of this Study.

1.2 Objectives of the Study

This Study seeks to undertake the following:

- a) Review available documentation on rural infrastructure, particularly rural transport facilities and irrigation, and
- b) Assess the growth, income, productivity, and employment impacts of rural roads (transport) and irrigation on the rural agricultural economy.

The aforementioned tasks are intended to achieve the following objectives:

- a) Identify the constraints, such as technical skills, administrative/institutional, policies, or other factors, to incremental investments, operation, and maintenance of rural infrastructures;.)
- b) Identify the requirements for strengthening LGUs and other providers of rural infrastructure to enable them to overcome the identified constraints; and
- c) Recommend priority initiatives to improve the implementation capacity and efficiency of institutional providers in sustaining rural infrastructure.

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The Current Situation of Rural Infrastructure

2.1 Rural Roads Network

2.1.1 Coverage

2.1.1.1 Local Road Length and Type

The administration of the road system is distributed between the national and local governments, depending on the road classification, with local roads supposedly classified depending on who has administrative responsibility over its construction, repair and maintenance. Table 2.1-1 and 2.1-2 give the estimated length and road type of the network, (See Appendix A) but its accuracy has often been questioned since the conduct of road inventories are usually based on the sampling of the network and not of the whole. The World Bank-funded National Roads Improvement Project being implemented by the DPWH seeks to more accurately determine the length, type and condition of the whole national road network under the administration of DPWH. For roads under the administrative supervision of LGUs, the data given are very rough estimates as the problem of road inventories are more critical yet ignored at the local level. The ADB-supported (TA 3805) was intended to assist the Department of Interior and Local Government (DILG) to formulate and prepare a Rural Road Development Policy Framework to enable the different Local Government Units (LGUs) to effectively carry out their mandate for local road development and management. It was intended to also assess and test the proposed procedures necessary for the establishment of an overall policy for the development of the rural roads network with Regions V, VI, XI and CAR as the project areas. Unfortunately, the TA did not go beyond the study phase since its intention was to prepare a loan program for rural roads in selected regions/provinces in the country. There are currently no efforts by the national government, the various local government leagues or the Department of the Interior and Local Government (DILG) to improve the conduct of road inventories or establishment of a comprehensive database which would incorporate such information as the exact location of the roads and bridges, geometric and structural conditions, functions, traffic volumes, at the local level.

Table 2.1 – 1
Road Length by Classification

Classification	Length (in km)	% Share
National Roads	29,878	14.8
• National Arterial	16,799	
• National Secondary	13,079	
Local Roads	171,957	85.2
• Provincial	27,136	13.4
• City	7,052	3.5
• Municipal	15,804	7.8
• Barangay	121,965	60.4
TOTAL	201,834	100.0

Source: Sector Study for Road Sector in the Philippines, JBIC, June 2003

Table 2.1 - 2
Local Roads by LGU and Pavement Type*

LGU	Paved (in km.)	Unpaved (in km.)	Total (in km.)	Km/LGU Type
Province	6,000	23,000	29,000	380
City	4,000	2,000	6,000	60
Municipality	5,000	10,000	16,000	11
Barangay	8,000	114,000	122,000	3
ALL	23,000	149,000	172,000	4

* Road kilometers rounded to the nearest thousand.

SOURCE: ADB T.A. No. PHI 3805 - Rural Roads Development Policy Framework – Interim Report, February 2003, DILG.

2.1.1.2 Organizational Responsibilities over Provision and Sustainability

There are basically two organizations responsible for the provision, management and maintenance of the road system: the DPWH for the national roads system and the various LGUs for local roads. With devolution of some of the roads provision, management and maintenance responsibilities of the DPWH to the LGUs, the DPWH had proposed to reclassify the existing national road network and to devolve part of that network, about 35% of the existing length of national roads, to the LGUs. This is opposed by the LGUs for the following reasons:

- a) The existing condition of the roads proposed for transfer, have to be inventoried and put in good condition prior to any such transfer. The LGUs are wary of the cost of rehabilitation/reconstruction of the roads to be transferred;
- b) DPWH and the LGUs must first mutually agree on the roads to be transferred in lieu of what is a unilateral act of the DPWH to just transfer whatever roads they want; and
- c) The national government must transfer the annual appropriations for road maintenance of the transferred roads to the LGUs over and above the Internal Revenue Allotment (IRA) given them on an annual basis.

Table 2.1 - 3
Draft Reclassification of the Existing National Road Network

<u>New Classification</u>	<u>Length (km)</u>
Arterial Primary	5,255
Arterial Secondary	11,030
Tertiary	177
For Transfer to Local Governments	8,804
Total	25,267

Source: Planning Service, DPWH

Thus, while it is recognized that DPWH has over all responsibility over the national roads system, the LGUs have been given the mandate over the provision, management and maintenance of local roads pursuant to the Local Government Code of 1991.

Legal Framework

The Local Government Code of 1991 (LGC) and its Implementing Rules and Regulations enunciates the policy of government towards a “meaningful local autonomy to enable them (LGUs) to attain their fullest development as self-reliant communities and make them more effective partners in the attainment of national goals”. The LGC had amended the previous laws on local government autonomy such as:

- (a) R.A. 2264 – AN ACT AMENDING THE LAWS GOVERNING LOCAL GOVERNMENTS BY INCREASING THEIR AUTONOMY AND REORGANIZING PROVINCIAL GOVERNMENTS approved on 19 June 1959;
- (b) R.A. 5185 – AN ACT GRANTING FURTHER AUTONOMOUS POWERS TO LOCAL GOVERNMENTS approved on 12 September 1967 (Otherwise known as the Decentralization Act of 1967); and
- (c) R.A. 4497 – AN ACT AMENDING SECTION TWO OF REPUBLIC ACT TWENTY-TWO HUNDRED SIXTY-FOUR, OTHERWISE KNOWN AS THE AUTONOMY ACT OF NINETEEN FIFTY-NINE approved 19 June 1965.

With the LGC of 1991, the government provided for “a more responsive and accountable local government structure instituted through a system of decentralization, whereby local government units (LGUs) shall be given more powers, authority, responsibilities and resources.

LGU Responsibility in the Delivery of Basic Services and Facilities

Chapter 2, Section 17 of the LGC defines the responsibility of LGUs in the delivery of basic services and facilities devolved to them and cover those, but not limited to that

summarized in Table 2.1-4 as it pertains to roads and other infrastructures. It is only for barangay roads where the responsibility for construction was not defined. In practice, the national, provincial, city and municipal governments undertake the construction of barangay roads using their own funds.

Table 2.1 - 4
Legal Basis Of LGU Responsibility For Basic Infrastructures
(including Roads) and Its Limits

LGU Type	LGC	Specific Basic Infrastructure Responsibility Devolved
Barangay	Sec. 17 (b) 1 (i) 1 (v) 1 (vi)	Agricultural support services which include planting materials distribution system and operation of farm produce collection and buying stations Maintenance of barangay roads and bridges and water supply systems. Infrastructure facilities such as multipurpose hall, multipurpose pavement, plaza, sports center, and other similar facilities.
Municipality	Sec. 17 (b) 2 (i) 2 (viii)	Extension and on-site research services and facilities related to agriculture and fishery activities which include dispersal of livestock and poultry, fingerlings, and other seeding materials for aquaculture; palay, corn, and vegetable seed farms; medicinal plant gardens; fruit tree, coconut, and other kinds of seedlings nurseries; demonstration farms; quality control of copra and improvement and development of local distribution channels, preferably through cooperatives, inter-barangay irrigation systems; water and soil resources utilization and conservation projects; and enforcement of fishery laws in municipal waters including the conservation of mangroves. Infrastructure facilities intended primarily to service the needs of the residents of the municipality and which are funded out of municipal funds including but not limited to: a. Municipal roads and bridges b. School buildings and other facilities for public elementary and secondary schools c. Health centers and other health facilities d. Communal irrigation e. Small water impounding projects and

LGU Type	LGC	Specific Basic Infrastructure Responsibility Devolved
		other similar projects f. Fish ports g. Artesian wells, spring development, rain water collectors and water supply systems h. Seawalls, dikes, drainage and sewerage and flood control i. Traffic signals and road signs
Province	Sec. 17 (b) 3 (i) 3 (vii)	Agricultural extension and on-site research services and facilities which include the prevention and control of plants and animal pests and diseases; dairy farms, livestock markets, animal breeding stations and artificial insemination centers; and assistance in the organization of farmers and fisherman's cooperatives and other collective organizations as well as the transfer of appropriate technology. Infrastructure facilities intended to service the need of the residents of the province and which are funded out of provincial funds including but not limited to: a. Provincial roads and bridges b. Inter-municipal water works, drainage and sewerage, flood control and irrigation systems; c. Reclamation projects and d. Similar facilities.
Cities	Sec. 17 (b) 4	All services and facilities provided by the municipality and the province and, in addition thereto, the following: (a) Adequate communication and transportation facilities; and (b) Support services and facilities for education, police and fire protection.

Source: R.A. 7160 - Local Government Code of 1991.

There are two (2) pertinent provisions of the LGC that limits the power of LGUs in the provision of basic services and infrastructure, namely:

Sec. 17 (c) wherein “public works and infrastructure projects and other facilities, programs and services funded by the National Government under the annual General Appropriations Act and other special laws, pertinent executive orders, and those wholly or partially funded from foreign sources, are not covered” under Section 17 “except in those cases where the local government unit concerned is duly designated as the implementing agency for such projects, facilities, programs and services.”

Sec. 17 (g) wherein “The basic services and facilities” enumerated in Section 17 (b) “shall be funded from the share of local government units in the proceeds of national taxes and other local revenues and funding support from the National Government, its instrumentalities and government-owned or controlled corporations which are tasked by law to establish and maintain such services or facilities. Any fund or resources available for the use of local government units shall be first allocated for the provision of basic services or facilities enumerated” in section 17 (b) “before applying the same for other purposes, unless otherwise provided in the code.”

Section 17 (c) had been frequently invoked by the national government in undertaking public works and infrastructure projects in the LGUs’ areas of responsibilities.

DPWH had, previous to the LGC of 1991, funded and implemented most road activities at the LGU level, although, in certain cases, the local Engineer’s Office undertook some of the work under close supervision by DPWH’s District Engineer. With the LGC of 1991, DPWH participation in local roads was limited to providing assistance to LGUs or the implementation of nationally funded projects in the LGU. In the case of LGUs implementing DPWH infrastructure projects, Department Order No. 137 Series of 1999 signed 30 June 1999 prescribes the guidelines for the implementation of DPWH projects by LGUs.

In addition to Section 17 of the LGC, Table 2.1-5 gives the relevant Sections that empower LGUs to tap the private sector in the delivery of basic services and facilities.

Table 2.1 – 5
LGU Mandate on Public-Private Sector Partnerships
In the Provision of Infrastructure Projects

LGC	Description of Provisions on Public-Private Sector Partnerships In the Provision of Infrastructure Projects for LGUs
Title 4 Sec. 299	Authorization for LGUs to issue bonds, debentures, securities, collaterals, notes and other obligations to finance self-liquidating, income-producing development or livelihood projects, subject to the rules and regulations of the Central Bank and the Securities and Exchange Commission.
Title 4 Sec. 302	Authorization for LGUs to enter into contracts with any duly prequalified individual contractor for the financing, construction, operation and maintenance of any financially viable infrastructure facilities under the build-operate-and-transfer scheme.

Source: R.A. 7160 - Local Government Code of 1991.

2.1.1.3 Actual Process for Planning up to Implementation of Local Road Projects

Section 106 of the LGC mandates that “each local government shall have a comprehensive multi-sectoral development plan” and this is contained in the Local Development Plan (LDP). The purpose of the LDP is for each LGU to have a plan that is designed, sustained and periodically reviewed and updated and which is aimed at achieving defined objectives over a fixed period of time and with full consideration of its implementation requirements.

Since the roads sector is part of the overall infrastructure development sector, the process of planning up to implementation of specific local road projects would be the same as with all other sectors.

Briefly, the planning process starts of with the needs analysis of the LGU in the various sectors and the basic vision for the LGU at the end of the planning period. The development vision requires the selection of the appropriate and attainable goals of the LGU (Political). This must be interlinked with plans for the investment of locally organized and managed local and externally generated funds. This must then be linked with annually scheduled and financed efforts to support the implementation of the plans (Fiscal). To meet the LGU’s enlarged responsibilities and expanded powers under the LGC, LGUs have to develop as institutions conforming to the participatory environment and obligations contained in the LGC (Institutional).

Based on the above, the comprehensive multi-sectoral Local Development Plan is prepared for the medium term of about 3-6 years. This is sectorally divided according to the sectoral/functional classification of expenditures in the 1994 Budget Operations Manual and include the following:

- General Public Services
- Education, Culture and Sports/Manpower Development
- Health, Nutrition and Population Control
- Labor and Employment
- Housing and Community Development
- Social Security, Social Services and Welfare
- Economic Services
- Special Sectors including land-use/spatial planning and infrastructure planning.

After the preparation of the LDP, the Local Development Investment Programming (LDIP) is the process for planned financing of LGU investments. Each LGU, particularly its Local Development Council (LDC) and Local Finance Committee (LFC) determine how the strategies/goals of the LDP will be financed as specific projects over a defined period of time. The LDIP guides how the financing for capital and non-capital projects drawn from the LDC is to be done.

Every LGU should have a “ comprehensive multisectoral development plan to be initiated by the LDC concerned and approved by its sanggunian. For this purpose, the provincial, city, municipal or barangay development council shall assist the corresponding sanggunian in setting the direction of economic and social

development, and coordinating development efforts within its territorial jurisdiction” (LGC IRR Rule XXIII Art. 182).

The LDCs are composed of the following:

Provincial Development Council

- (a) All mayors of component cities and municipalities
- (b) The chairman of the committee on appropriations of the sangguniang panlalawigan
- (c) The congressman or his representative; and
- (d) Representatives of NGOs operating in the province, who shall constitute not less than one-fourth (1/4) of the members of the fully organized council.

City or Municipal Development Council

- (a) All punong barangays in the city or municipality
- (b) The chairman of the committee on appropriations of the sangguniang panlungsod or sangguniang bayan concerned
- (c) The congressman or his representative; and
- (d) Representatives of NGOs operating in the city or municipality as the case may be, who shall constitute not less than one-fourth (1/4) of the members of the fully organized council

In lieu of a development council, the barangay has an Assembly composed of the actual residents of the barangay for at least 6 months, 15 years of age or over, citizens of the Philippines and duly registered in the list of barangay assembly members. Its powers include (i) initiating legislative processes by recommending to the sangguniang barangay the adoption of measures for the welfare of the barangay and the city or municipality concerned; (ii) deciding on the adoption of initiative as a legal process whereby the registered voters of the barangay may directly propose, enact, or amend any ordinances; and (iii) hear and pass upon the semestral report of the sangguniang barangay concerning its activities and finances.

The functions of the LDCs are as follows:

- (a) Formulate long-term, medium-term and annual socioeconomic development plans and policies;
- (b) Formulate medium-term and annual public investment programs;
- (c) Evaluate and prioritize socioeconomic development programs and projects;
- (d) Formulate local investment incentives to promote the inflow and direction of private investment capital;
- (e) Coordinate, monitor, and evaluate the implementation of development programs and projects; and
- (f) Such other functions as may be provided by law or competent authority.

Once the LDIP has been prepared, this is then translated into an Annual Investment Plan (AIP), which is the tool used by the LGU to annually manage and financially support its LDP and LDIP. It requires the approval of the Sanggunian and subsequently becomes the basis for the capital and non-capital LGU investments that would have to be included in the LGU Annual Budget. The LGU budget approved by their respective sanggunians are subject to review by the appropriate authorities as given in Table 2.1- 6.

**Table 2.1 – 6
Entities Mandated to Review LGU Budget**

LGU	Entity to Conduct Review of LGU Budget
Cities/Municipalities in Metro Manila	Department of Budget and Management (DBM)
Provinces/Highly Urbanized Cities	DBM Regional Offices
Component Cities/ Municipalities	Sanggunian Panlalawigan
Barangays	Sanggunian Panlungsod/Banyan

Source: R.A. 7160 - Local Government Code of 1991.

2.1.1.4 Investments

Only data for National Government road investments are available as given in Table 2.1 - 7. The proposed national government road investments are given in Table 2.1-8. On the other hand, data on LGU road investments cannot be determined given that each LGU has the autonomy to determine its investment level for various infrastructures including roads. There is no single government agency that tracks such investments to determine the overall amount allocated by each LGU and all LGUs taken together for each sector, including roads. This also goes for roads maintenance at the LGU level.

**Table 2.1 – 7
DPWH Budget 1995-2003
In current billion pesos**

Budgetary Items	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Appropriations/1	15.93	40.37	53.82	61.82	37.72	52.37	52.37	47.99	52.95
General Administration/2	3.09	3.47	4.06	4.76	4.25	5.11	4.24	4.65	3.73
Road Investment/3	6.44	15.43	22.72	29.73	24.22	21.47	15.36	15.98	25.86
• Foreign-Assisted	1.13	8.37	8.41	11.80	12.63	12.22	9.76	10.05	14.57
• Locally Funded	5.31	7.06	14.31	17.93	11.59	9.25	5.60	5.93	11.29
Road Maintenance	3.24	3.40	3.59	3.70	3.79	4.34	4.69	4.24	5.27
GNP	1,958.6	2,261.30	2,528.30	2,802.10	3,136.20	3,496.90	3,853.30	4,223.33	4,618.31
Total Road Budget	9.68	18.83	26.31	33.43	28.01	25.81	20.06	20.22	31.13
Percentage of Road Budget to GNP	0.49	0.83	1.04	1.19	0.89	0.74	0.52	0.48	0.67

1/ General Appropriations including all infrastructure projects of DPWH

2/ Includes all Current Operating Expenditures less Road Maintenance Budget

3/ Capital Investments for Roads and Bridges

Source: Sector Study for Road Sector in the Philippines, JBIC, June 2003; DPWH, DBM

Table 2.1 – 8
Proposed Medium Term Roads Infrastructure Program
In billion pesos

	2005	2006	2007	2008	2009	2010	Later Years
Highways	30.94	32.79	37.01	38.15	40.10	43.60	69.22
Foreign-Assisted Projects.	17.27	22.38	24.34	23.23	17.80	20.70	44.82
• On-going	16.89	18.84	16.55	8.74	1.07	-	-
• New/Proposed	0.38	3.54	9.97	14.49	16.72	20.75	44.82
Locally Funded Projects	13.68	10.41	12.69	14.92	22.31	22.91	24.40

Source: DPWH, 2004

2.1.1.5 Users and Impacts

There is limited data available on users of rural roads and the impact of these roads on the agricultural sector. Results monitoring and evaluation (RME) is not institutionalized and no concerted efforts have been exerted by either the national government or LGUs to measure the level of utilization of rural roads, types of users and the effect of these roads on overall agricultural production and productivity. The data available would be the various feasibility studies that have been undertaken for proposed rural road projects including farm-to-market roads, and the impact studies undertaken by the funding institutions of completed rural road projects to determine the impacts being generated by the completed projects as a measure of their success.

2.2 Irrigation Facilities

2.2.1 Coverage

As of end of 2003, total irrigated area in the country is estimated at 1.36 million hectares of which 690 thousand hectares (49%) is served by the national irrigation system; 532 thousand hectares (38%) by communal irrigation systems; and 174 thousand (12.5%) by private irrigation systems. Based on an estimated irrigable area of 3.13 million hectares using the 3% slope criteria, this means that less than half (44.7%) is covered by irrigation.

As of end of 2003, the number of national irrigation systems was 192; 6,702 communal irrigation systems and 4,001 private irrigation systems. For the private irrigation systems, the estimated number of systems and hectareage covered was based on the inventory undertaken in 1998. Table 2.2-1 gives the annual increase in the number of systems developed and the total area covered by irrigation systems of any type.

Table 2.2 – 1
Number of Irrigation Systems and Area Served
By type, in thousand hectares

Region	<u>National Irrigation Systems</u>							
	2000		2001		2002		2003	
	No.	Area	No.	Area	No.	Area	No.	Area

CAR	1	17.6	1	17.6	1	17.6	1	17.6
1	26	55.9	26	55.9	26	55.9	26	55.9
2	20	136.8	20	136.8	20	136.8	19	136.8
3	13	171.8	13	169.3	14	169.8	16	169.8
4	46	52.9	46	52.7	45	52.2	45	52.4
5	14	20.5	14	20.5	14	20.5	15	20.5
6	11	52.2	11	52.2	11	52.2	11	52.2
7	2	5.8	2	5.0	2	5.5	2	5.5
8	16	16.0	16	16.7	16	16.2	16	16.4
9	4	15.2	4	15.2	4	15.2	4	15.2
10	4	20.7	4	20.7	5	25.6	5	25.6
11	15	52.5	15	52.5	9	32.2	9	32.4
12	7	39.2	7	39.6	12	55.0	12	55.0
ARMM	5	10.1	6	16.1	6	16.1	5	16.1
CARAGA	6	18.7	6	18.4	6	18.4	6	18.4
Total	190	685.8	191	689.0	191	689.1	192	689.7

Communal Irrigation Systems

Region	2000		2001		2002		2003	
	No.	Area	No.	Area	No.	Area	No.	Area
CAR	947	32.5	947	32.8	947	32.9	947	33.4
1	1,315	90.8	1,315	91.8	1,315	93.7	1,315	94.7
2	1,566	38.0	1,566	38.6	1,566	40.0	1,566	40.3
3	383	67.5	383	69.4	417	76.1	417	77.1
4	533	53.1	533	54.4	499	50.2	499	51.1
5	669	67.1	669	67.7	669	68.6	669	68.6
6	185	17.7	185	17.8	185	18.1	185	19.1
7	272	18.1	272	18.4	272	19.3	272	19.9
8	222	26.4	222	27.5	222	28.9	222	28.9
9	184	18.1	184	18.1	180	18.4	180	18.6
10	97	16.3	97	16.4	108	20.9	108	21.6
11	104	20.8	104	21.3	63	12.8	63	13.6
12	52	13.9	52	14.2	82	20.6	82	21.0
ARMM	35	5.5	35	5.6	39	6.0	39	6.2
CARAGA	138	15.9	138	16.7	138	17.4	138	18.1
Total	6,702	501.4	6,702	510.6	6,702	523.9	6,702	532.2

Private Irrigation Systems*

Region	2000		2001		2002		2003	
	No.	Area	No.	Area	No.	Area	No.	Area
CAR	1,293	22.9	1,293	22.9	1,293	22.9	1,293	22.9
1	799	27.3	799	27.3	799	27.3	799	27.3
2	344	23.1	344	23.1	344	23.1	344	23.1
3	116	14.9	116	14.9	116	14.9	116	14.9
4	348	23.6	348	23.6	348	23.6	348	23.6

5	507	29.5	507	29.5	507	29.5	507	29.5
6	139	5.5	139	5.5	139	5.5	139	5.5
7	121	2.5	121	2.5	121	2.5	121	2.5
8	90	4.5	90	4.5	90	4.5	90	4.5
9	30	2.0	30	2.0	30	2.0	30	2.0
10	39	2.8	39	2.8	39	2.8	39	2.8
11	53	10.1	53	10.1	53	10.1	53	10.1
12	41	2.0	41	2.0	41	2.0	41	2.0
ARMM	4	0.2	4	0.2	4	0.2	4	0.2
CARAGA	77	3.3	77	3.3	77	3.3	77	3.3
Total	4,001	174.2	4,001	174.2	4,001	174.2	4,001	174.2

* Data on private irrigation systems are based on 1998 inventory and have not been updated.

Source: National Irrigation Administration, 2004

As can be deemed from Table 2.2 – 1, NIA has been able to add only two (2) national irrigation systems from 2000-2003 with an increase in irrigated area of about 3,900 hectares. For the communal irrigation systems, no additional system has been added from 2000-2003, although the total area irrigated has increased by 30,800 hectares. For the private systems, NIA has not conducted any inventory since 1998.

With respect to the quality of the existing irrigation systems, no data was available on the condition of these systems.

Aside from irrigation systems, Small Water Impounding Management (SWIM) Projects and Small Reservoir Impounding Projects (SRIP) have been constructed to provide additional water to farmers. While an inventory of the SWIM and SRIP are available, the condition and area served by these projects are not available.

Table 2.2 –2 and 2.2 –3 gives the location, area and dam height of the various SWIM and SRIP projects.

Table 2.2 - 2
Small Water Impounding Management (SWIM) Projects For Irrigation

	Name Of Project	Region	Location	D.A., km ²	Dam Ht. (m)	Agency
1	Bacnotan SWIP	I	La Union			FSDC
2	Lagunlong SWIM	I	Ilocos Sur	0.55	12.30	BSWM
3	Darapidap SWIP	II	Nueva Vizcaya		12.90	BSWM
4	Caulanan Diversion Dam	III	Pampanga			DPWH
5	Maniniog SWIM	III	Tarlac	2.24	15.00	BSWM
6	Masalipit SWIM	III	Bulacan	2.32	9.40	BSWM
7	Palacol Dam & Reservoir	III	Pampanga		1.50	DPWH
9	San Ramon Dam &	III	Pampanga		13.70	DPWH

	Name Of Project	Region	Location	D.A., km ²	Dam Ht. (m)	Agency
	Reservoir Project					
10	Bulhao SWIM	V	Camarines Norte	0.75	9.48	BSWM
11	Caramoan SWIM	V	Camarines Sur	23.30	13.00	NIA
12	Gabawan SWIM	V	Albay	0.80	6.10	BSWM
13	Potot SWIM	V	Masbate	10.70	18.25	NIA
14	Panlagangan SWIM	VI	Antique	0.42	13.00	BSWM
15	Traciano SWIM	VI	Capiz	0.90	10.65	BSWM
16	Calangganan SWIP Phase I	VII	Bohol		12.50	DPWH
17	Campin SWIM	VII	Bohol	1.15	9.30	BSWM
18	Ilihan SWIP	VII	Bohol		22.00	NIA
20	Nangka SWIM	VII	Negros Oriental	0.61	15.00	BSWM
21	Sto. Niño SWIM	VII	Bohol	1.39	11.00	BSWM
22	Tugas SWIM	VII	Bohol	5.10	22.00	NIA
23	Balibayon SWIM	VIII	Eastern Samar	0.77	13.40	BSWM
24	Inamburakay SWIM	VIII	Leyte	0.80	10.40	BSWM
25	Macagtas SWIM	VIII	Northern Samar	3.60	19.51	DPWH
26	Malinao SWIP	VIII	Southern Leyte		9.00	BSWM
27	Polangi SWIM	VIII	Northern Samar	0.60	6.00	BSWM
28	Sta. Fe SWIM	VIII	Eastern Samar	1.20	8.00	BSWM
29	Lamare I SWIM	IX	Zamboanga del Sur	0.67	11.00	BSWM
30	Woodland SWIM	IX	Zamboanga del Sur	2.82	9.50	BSWM
31	Kitao-tao SWIM	X	Bukidnon	0.96	7.00	BSWM
32	San Nicolas SWIM	XI	Davao del Sur	2.75	11.00	BSWM
33	Sto. Domingo SWIM	XI	Davao del Norte	1.44	10.30	BSWM
34	Florida SWIM	Caraga	Surigao del Norte	1.47	10.00	BSWM
35	Malapong SWIM	Caraga	Agusan del Norte	0.82	9.65	BSWM

Source: National Irrigation Administration

Table 2.2 - 3
Small Reservoir Impounding Projects (SRIP) For Irrigation

	Name Of Project	Region	Province	Res. Area, ha	Dam Ht. (m)
1	Alapasco SRIP	VI	Iloilo	69	21
2	Calango SRIP	VI	Negros Oriental	215	26
3	Cordero SRIP	III	Nueva Ecija	10	10
4	Miral SRIP	XI	Davao del Sur	695	27
5	Lupao SRIP	III	Nueva Ecija	50	27
6	Capayas SRIP	VII	Bohol	-	-
7	Ilaya SRIP	VII	Bohol	48	25

Source: National Irrigation Administration

2.2.2 Organizational Responsibilities over Provision and Sustainability of Irrigation Systems

2.2.2.1 Provision of Irrigation Systems

As had already been shown in Section 2.1.1.2 and Table 2.1.4 above, responsibility over the provision of communal irrigation systems funded out of municipal funds is the mandate of municipalities and that of inter-municipal irrigation systems funded out of provincial funds falls under the mandate of the province. However, irrigation systems funded under the National General Appropriations Act are undertaken by the National Irrigation Administration (NIA) pursuant to its charter and as an exemption to the pertinent provision of the LGC and consistent with Section 17c of said Code.

Inasmuch as LGUs neither have the technical expertise to plan and implement the construction of irrigation systems nor the financial resources required, there has been a relative standstill in the number of communal irrigation systems as shown in Table 2.2.1 above. This problem is further compounded by LGUs giving low priority to agricultural support services and infrastructure.

To respond to the need for irrigation facilities, the National Government has allotted financial resources through the National General Appropriations Act for the provision of communal irrigation systems (municipal and inter-municipal) under the so-called special program referred to as *Balikatan Sagip Patubig*.

Table 2.2-4 below gives some of the government agencies with responsibility for the provision of irrigation systems and water use/resources including the major responsibilities and concerns of these agencies.

Table 2.2 - 4
Selected Government Agencies with Responsibility for Irrigation Systems and Water Use/Resources

Department	Line Bureau Or Attached Agency	Responsibilities / Concerns
1. <u>Department of Public Works and Highways (DPWH)</u>	National Water Resources Board (NWRB)	Coordinates and regulates water activities in the country; supervises and regulates operations of water utilities outside jurisdiction of LWUA and MWSS; formulates and recommends policies on water resources
	PMO-Rural Water Supply (PMO-RWS)	Manages the planning, design, construction, organization and maintenance of foreign-assisted rural water supply projects
	PMO-Small Water Impounding Projects (PMO-SWIM)	Manages the planning, design, construction, organization and maintenance of locally-funded and foreign assisted SWIM projects

Department	Line Bureau Or Attached Agency	Responsibilities / Concerns
2. <u>Department of Agriculture (DA)</u>	National Irrigation Administration (NIA)	Undertakes program-oriented and comprehensive water resources projects for irrigation purposes, as well as concomitant activities such as flood control, drainage, land reclamation, hydropower development, watershed management, etc.
	Bureau of Soils and Water Management (BSWM)	Undertakes assessment, development and conservation of existing and potential soil and water sources for agriculture; undertakes cloud seeding activities
	Bureau of Fisheries and Aquatic Resources (BFAR)	Formulates plans for the proper management, accelerated development and proper utilization of the country's fisheries and aquatic resources
3. <u>Department of Interior and Local Government (DILG)</u>	PMO-Water Supply and Sanitation (PMO-WS)	Supports the provision of WS & S services by local government units (LGUs)
	Provincial Governments	Promote the development of infrastructure including irrigation, water supply, electric power and roads
	Municipal and Barangay Governments	Promote municipal and barangay WS & S, watershed and other programs

2.2.2.3 Investments

Similar to the situation for rural roads, most, if not all, LGUs have no irrigation development plan that should guide the planning, prioritization and implementation and operationalization of local/communal irrigation system within the municipality or between two or more municipalities. LGUs have been content to let the national government undertake the provision of irrigation systems and seem to give the construction of irrigation facilities the lowest priority.

As is therefore evident in the national General Appropriations Act, the national government usually allocates a substantial amount for the construction, repair or rehabilitation of new and existing national and communal irrigation systems. In the 2003 national General Appropriations Act for example, the national government allocated about P1.78 billion for various irrigation activities/projects/programs such as the following:

<u>Budget Item</u>	<u>Amount (in million Pesos)</u>
National Irrigation Administration	1,779.15
<ul style="list-style-type: none"> • Construction/repair/rehabilitation of new/existing national/communal irrigation systems, nationwide • Small reservoir irrigation projects (SRIP), 	<p style="text-align: right;">310.00</p> <p style="text-align: right;">40.00</p>

nationwide	2.72
• Repair/rehabilitation and construction of farm-to-market roads in the national irrigation systems	40.00
• Repair/rehabilitation of groundwater/pump projects	500.00
• Balikatan Sagip Patubig Program	7.00
• Construction/repair/rehabilitation of small scale irrigation systems	879.43
• Others	
Repair/rehabilitation and construction of farm-to-market roads in the designated key production areas (Department of Agriculture)	200.00

The Balikatan Sagip Patubig Program under the Department of Agriculture has existed since 1999 and allocated, for example, P500 million in 2003 alone for irrigation facilities at the LGU level. Table 2.2 – 5 below gives a brief description of the Program.

Table 2.2 – 5
Description of the Balikatan Sagip Patubig Program

Aspect	Description
Features	<ul style="list-style-type: none"> a) Supports food efficiency program via irrigation development b) Promotes participation and complementation of resources for irrigation development among the national government through the Department of Agriculture (DA)/ National Irrigation Administration (NIA), LGUs and farmers with their Irrigators Associations (IA) c) Covered by a Memorandum of Agreement (MOA) approved by DA/NIA, LGU and IA d) Sustains system operation and maintenance e) Nationwide coverage
Scope	<ul style="list-style-type: none"> a) Repair and rehabilitation of communal irrigation systems (CIS) b) Construction of new communal irrigation projects (CIP) c) Priority CIP/CIS: those in areas with LGUs and IAs capable and ready to provide necessary counterpart funds, labor, materials and/or use of LGU-owned equipment d) At least 130% irrigated cropping intensity e) Presence of viable IA f) Willingness and capability of LGUs and IAs to undertake system repair and O&M g) At least 12% estimated internal rate of return

Aspect	Description
	h) Rehabilitation cost less than P45,000 per hectare
Financing Scheme	a) Cost sharing arrangement covers only actual rehabilitation/ construction cost

NIA's Medium-Term Infrastructure Development Program for the 2004-2010 period is given in Table 2.2 – 6 below. For the LGUs' irrigation investment program, there is no government agency, as in rural roads, that consolidates the Annual Investment Programs (AIPs) of all LGUs to determine the specific infrastructure that LGUs have prioritized and programmed for implementation in any year.

Table 2.2 - 6
Medium-Term Infrastructure Development Program For Irrigation Development
National Irrigation Administration 2001 – 2010

Type of Projects	Estimated Project Cost (million pesos)	FUNDING REQUIREMENT (P 000)								TOTAL 2001-2010	
		2001	2004	2005	2006	2007	2008	2009	2010		
A. ON-GOING PROJECTS											
Sub-total, On-going Projects	55,284.76	1,814.19	4,264.54	6,324.67	5,890.22	5,552.58	4,934.42	910.70			39,453.54
B. PIPELINE PROJECTS											
Sub-total, Pipeline Projects	101,831.43	-	2,750.00	5,709.03	6,705.55	6,687.72	8,638.71	9,364.15	9,690.02		50,515.20
C. OTHER PROGRAMS											
Sub-total, Other Programs	48,323.57	318.00	4,606.17	4,916.17	5,251.17	5,608.17	5,993.17	6,407.17	6,853.17		48,323.57
D. AGRARIAN REFORM											
Sub-total, Agrarian Reform	13,503.00	1,240.00	2,398.00								11,687.00
GRAND TOTAL	218,942.76	3,372.19	14,018.71	16,949.87	17,846.95	17,848.48	19,566.32	16,682.02	16,543.19		149,979.31

See Appendix B for details.

Source: National Irrigation Administration, 2004

2.2.3 Users and Impacts

NIA does not monitor the production by farmers using its irrigation facilities and it is difficult to determine the overall impact of irrigation development on the level of farm production and productivity. Inasmuch as agricultural production is affected not only by the availability of rural infrastructures but also other inputs, i.e. quality of seeds, technology, fertilizers, insecticides, etc., we face the ever-present attribution issue, or what the impact of each input is on the overall increase in agricultural production. Availability of irrigation being one such input, its overall contribution to increases in agricultural production is therefore indeterminable.

As with rural roads, it is usually the funding institutions in the case of foreign funded irrigation projects that would normally undertake results monitoring and evaluation to determine and measure the impacts of its projects. However, the “attribution issue” remains a stumbling block to the measurement of irrigation’s impact on agricultural production. As for locally funded projects, measurement of impacts/results is ignored, as its concern seems to be largely on implementation (output oriented) and not on the outcomes/impacts of its projects (results oriented).

However, an ever-present important issue in irrigation is the recurring failure of the irrigators’ associations in three major areas, namely:

- a) The inability of the farmers/irrigators’ associations to pay for their use of the irrigation system, as in the case of the national systems or the amortization payments in the case of communal systems. Based on NIA’s collection efficiency report for irrigation service fees (for users of the national systems), the accumulated receivables from 1972 to 2003 have reached approximately P5.548 billion. In 2003, for current accounts, NIA has recorded a collection efficiency of only 55.4% while for back accounts, the collection efficiency was 2.63%.
- b) The failure of the irrigators’ associations to adequately maintain the communal irrigation systems left to their management. While there is no updated inventory on the current condition of all communal irrigation systems in the country, the perception is that some of these systems may already be dilapidated or inoperative. This may be one reason why the national government allocates at least P810.0 million annually for the construction/repair/rehabilitation of new/existing national/communal irrigation systems.
- c) The non-sustainability of irrigators’ associations is manifested by the constant and annual efforts of the NIA to organize and strengthen these associations. The number of national and communal irrigation systems has not increased significantly from 2000 to 2003, yet NIA’s continuous effort of organizing and strengthening such associations points to the frequent internal organizational strife that occur within these associations.

3

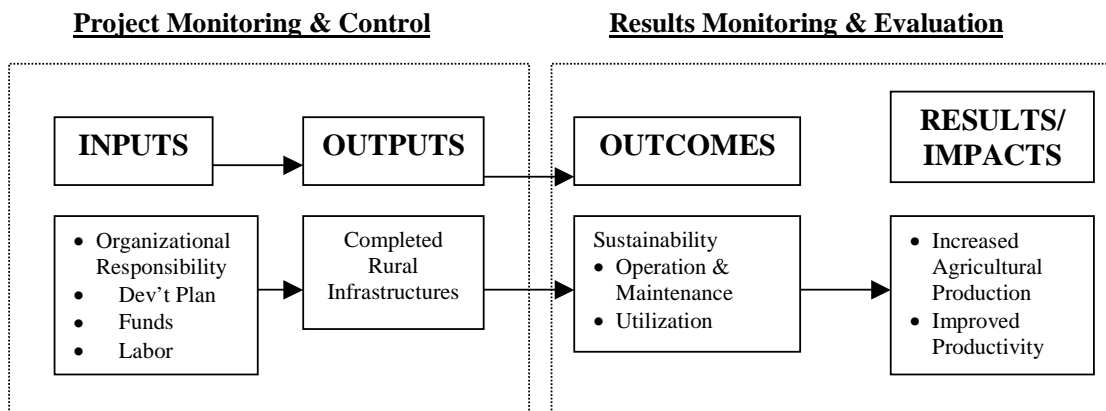
Issues in Rural Infrastructure Investments, Sustainability and Impacts

3.1 Analytical Framework

3.1.1 The Results Chain

The Study uses the “Results Chain” structure to identify the possible sources of bottlenecks that hinder agricultural growth and productivity and the possible initiatives that would help the sector hurdle the different barriers to its growth and development. The “Results Chain” is illustrated in Figure 3.1 - 1 below and tracks the development and sustainability of rural infrastructure through its different stages up to where the intended impacts are supposed to have been achieved.

Figure 3.1 - 11
The “Results Chain”



At the “INPUT” stage, the identified barriers to the provision of rural infrastructures may include policies, organizational mandates/responsibilities, funding issues and priorities, corruption, lack of public participation in the planning/prioritization of rural infrastructures that may result in the development of such infrastructures that are not needed.

At the “OUTPUT” stage, the quality, cost and completion time of the infrastructures are the major concerns.

At the “OUTCOMES” stage, responsibility over the sustainability of the infrastructures is the concern, given that there may again exist organizational issues over who has responsibility over the operation and maintenance of the completed infrastructure, therefore, the financing of these activities.

An important issue at this stage would be whether the projected users of the facilities utilize the facilities properly or for the purpose intended. While rural infrastructures are just a means toward attaining specified ends, providers of the service or users of the facilities are the private traders, farmers, etc.

At the “RESULTS or IMPACT” stage, a poor monitoring and evaluation system (RME) has resulted in a general lack of knowledge as to whether the interventions have generated the desired impacts/results.

3.2 The Identified Issues

3.2.1 Historical Perspective

One of the basic premises in the conduct of the Study was that it should not repeat what has already been determined in previous works on the same topic. Rather, new issues and constraints are identified that hinders the provision and sustainability of rural infrastructure. This assumes the resolution of previously identified problems has already been achieved. Unfortunately, such is not the case, as government inaction on previously identified issues and constraints have not only maintained the status quo but also served to worsen the problems even more. Thus, while the same issues and constraints on the ability of LGUs to perform their devolved responsibilities in the provision of rural infrastructure have cropped up again and again, the severity has worsened and the urgency to find the appropriate solution increased.

Local Roads Study, Final Report April 2000¹

The National Economic and Development Authority (NEDA) requested assistance from the World Bank to help investigate the situation with regards the continuing inadequacy of the local road network in terms of quality and capacity despite government’s enhanced support provided. Funded by the World Bank through the Canadian International Development Agency Fund and undertaken by Dessau Soprin International Inc., Canada, the Study was intended to:

- (a) Draw up strategies for improving maintenance and management of local roads;
- (b) Propose feasible and desirable interventions to achieve the proposed strategies; and
- (c) Promote a debate on the proposals among stakeholders.

The Study team conducted several discussions with representatives of LGUs including governors, mayors and administrative and technical staff which eventually

¹ National Economic and Development Authority, Local Roads Study, Final report, April 2000 – funded by the World Bank through the Canadian International Development Agency Fund, DESSAU SOPRIN International, Inc. Canada.

focused on an almost uniform concern of the municipal and provincial engineers on the following:

- (a) Lack of funds available for road maintenance;
- (b) Lack of consultation from the agencies implementing projects in their areas; and
- (c) Political interference in project planning and execution.

They admitted to the poor condition of local roads. While community representatives explained their attempts to comply with the 20% allocation of the IRA for development projects, pressures to meet other priorities make it unusual that they overspend on roads. In addition, the IRA of cities were said to be too much in proportion to what was given the municipalities and provinces.

The Study identified three (3) major causes to the poor condition of the local roads network, to wit:

- (a) *Inadequate management framework* – Local roads, particularly farm-to-market roads, are managed as part of the broader projects aimed at improving agriculture or irrigation and emphasis, therefore, has been on building new roads with little attention paid to either maintenance or to the overall efficiency of the system. A multiplicity of national government agencies are involved in the management of local roads, with functional overlaps and gaps as well as fragmentation of responsibilities very apparent;
- (b) *Insufficient Funding* – Considerable gap exists between needed and allocated financial resources for road maintenance for LGUs. The estimate was that a 10-year rehabilitation plan for local roads could easily exceed P12 billion annually. However, this estimate could be reduced if an improved road classification system could be formulated and implemented that would identify importance of local roads and improve planning and priority setting processes.
- (c) *Incomplete implementation of the Local Government Code* – The responsibility for maintaining local roads has been devolved to LGUs but the actual poor quality of local roads has revealed the serious difficulties in implementing the devolved function.

The Study recommended the following:

- (a) Development of a national integrated maintenance management framework for local roads to be implemented throughout the country. A dedicated group within the DILG was proposed to be set-up (Local Road Management Group (LRMG) to lead the undertaking and other essential tasks;

- (b) DPWH, together with the DILG and the LGUs, should complete the road classification study started in 1991 to develop a new functional road classification for national and local roads. This implied the transfer of an estimated 6,000 km of national roads to LGUs as recommended in the Better Roads Philippines Study; and
- (c) Improve the efficiency of the IRA funds by paying close attention to local roads on the fairness of the IRA distribution formula.

Strengthening Public Finance and Planning of Local Government Units (TA 3145-PH), Final Report 2000²

The Study had determined that the inadequacy of local resources, including its share of the IRA, has hampered the LGUs capability to fully implement their respective responsibilities under the LGC to make the bureaucracy respond to the needs of their constituencies. While the LGUs are exerting their best effort to respond to their people's needs, a large majority of these LGUs need to have additional financial resources and to be equipped with better capabilities and skills in order to respond to their ever increasing demands for services. This has to be accomplished within the existing national policy of weaning LGUs away from their dependence on national government financial assistance and at the same time improving their access to the private capital market.

Some of the findings and results of the Study were as follows:

- (a) Enactment of the LGC created great expectations not only from the LGUs and the NGAs, but also from the local constituencies;
- (b) The LGC has many loopholes that need to be addressed such as the NGAs continuing to implement "devolved" activities "in pursuant of their mandates" as enumerated under the Administrative Code of 1987;
- (c) The LGC has enjoined the national government to provide or augment the basic services and facilities of LGUs in such cases are not available or, if made available, are inadequate to meet the requirements of its inhabitants;
- (d) The perceived lack of technical capability on the part of LGUs to implement infrastructure projects is being used conveniently for the DPWH and other agencies to implement projects even through sub-contracts. Another is the distribution of the IRA which is biased against poorer LGUs;

² *Strengthening Public Finance and Planning of Local Government Units (TA 3145-PH), Final Report 2000², funded by the Asian Development Bank, Public Administration Service in association with Pacific Rim Innovation and Management Exponent, Inc.*

- (e) There is a compelling need for the national government to assist the poorer LGUs (4th-6th class municipalities) to improve their financial and technical capabilities in order to provide basic services and to develop projects;
- (f) The poorer LGUs for one reason or another, have very limited access or no access at all, to available sources of financing, i.e., the MDFO has quite a limited reach, geographically, since its operation is Manila-based. Also, the LGUs do not have the technical capabilities to handle the “formalities and paper work” required of a bank loan transaction; and
- (g) The majority of the lower class LGUs require technical assistance in planning, financial and fiscal analysis and administration, project identification and development and implementation.

The Study proposed the creation of the Local Government unit development Fund (LGU-DF) as a source of wholesale financing for both grants and loans to LGUs. To promote the principle of equity and transparency, cost-sharing models were recommended on the basis of LGU class and by type of project. A set of performance criteria, evaluation and monitoring system were recommended for use in evaluating LGUs who will access the LGU-DF.

Rural Roads Development Policy Framework – Interim Report 2003³

The technical assistance from the ADB was intended to assist the DILG formulate and prepare a Rural Roads Development Policy Framework that will enable LGUs to effectively carry out their mandate for local road development and management as stipulated in the LGC.

The Study had determined that “all is not well with LGU road administration” although such a situation was not alarming. However, it identified the following problems:

ROAD FUNDING

- (a) Inequality in experiences as some LGU engineering offices are severely handicapped by lack of heavy equipment, whilst others are more than sufficient;

³ Department of the Interior and Local Government, Rural Roads Development Policy Framework Philippines – TA. PHI-3805 – Interim Report February 2003³, Cardno MBK Pty Ltd in association with IDP Consult Inc. Philippines & Angel Lazaro and Associates.

- (b) Administration of local roads is piecemeal, with important roads chopped into sections and administered by different LGUs;
- (c) Planning of local roads is “unscientific” and haphazard, often undertaken without engineering advice and ignoring the “true cost”. Planning is driven politically, new projects preferred over efficiency and proper maintenance; and
- (d) Accounting and budgeting systems result in underestimating the true costs of road construction and maintenance.

LOCAL GOVERNMENT FUNDING

- (a) Majority of the pilot LGUs visited were largely dependent on IRA and generally lack the initiative to improve local tax and real property tax collections;
- (b) As a result of roads improvement with increased valuation of land along or in close proximity to these roads, some LGUs were not able to seize the opportunity for increased tax revenues as many LGUs have not passed local legislation on property taxes due to their inability to conduct/adjust zonal values with the entry of improved or new roads;
- (c) The budgeted amount for road maintenance across LGUs was low and actual amounts were further reduced;
- (d) To source out funding shortfall, LGUs obtain additional funding from congress and from NGA projects with local road components;
- (e) Some LGUs have equipment but these are underutilized because the operating capacity of the equipment is larger than the needs of the municipality;
- (f) General lack of a coherent database that will provide the requirements for investment programming on local roads, particularly on barangay roads;
- (g) Beneficiaries and LGUs prefer concrete roads as they can be used for other purposes (solar dryer of agricultural products such as palay and corn) and the implication on repair and maintenance costs (build and forget); and
- (h) Municipalities and barangays can ill-afford to allocate funds under their IRA for maintenance, much less the rehabilitation or construction of barangay/farm-to-market roads.

The Study proposed a number of solutions to wit:

ROAD FUNDING

- (a) Aggregate roads into large geographic areas and within these areas, manage roads by networks;
- (b) Functionally classify roads and set geometric and maintenance standards by road function;
- (c) Establish accounting systems that properly record all road works costs;
- (d) Ensure sound road planning and budgeting;
- (e) Ensure funding form all roads; and
- (f) Facilitate private sector participation.

LOCAL GOVERNMENT FUNDING

- (a) Need for harmonization and rationalization of financing local roads;
 - ⊙ Institutionalize a coordination mechanism in harmonizing the funding interventions of national government agencies on local roads;
 - ⊙ Prioritize funding of maintenance, rehabilitation and reconstruction of local roads over new construction;
 - ⊙ NGAs must involve LGUs in the identification, prioritization and implementation of local roads to sustain the maintenance requirements of these roads;
 - ⊙ Donor funding of local roads should require firm commitments from LGU beneficiaries in providing the required future maintenance prior to investing in the project;
 - ⊙ Cost sharing for local roads
- (b) Reduce the fragmentation of operating and maintenance funding of local roads across different budgetary channels:
 - ⊙ LGU budgeting must support maintenance of existing assets by earmarking development fund in timely rehabilitation and reconstruction;
 - ⊙ Systematic financial planning based on detailed inventory updating of local systems on their physical conditions and maintenance requirements annually must be undertaken by the LGU to facilitate fund sourcing;
 - ⊙ LGUs and Laces must provide more focused development budget planning and fiscal management and how this is integrated with then overall national development programs, i.e., local road

maintenance budgets must be harmonized with the grant transfers from NGAs on local roads rehabilitation and reconstruction;

① The LDP of the lower LGUs must be integrated in the development plans of higher LGUs.

- (c) LGUs should improve their local revenue generation efforts and be less dependent on IRA
- (d) Need to enhance local governance thru clustering of LGUs in local road maintenance practices and financing; and
- (e) Promotion of public private sector partnerships and commercialization possibilities in road maintenance such as equipment pooling.

Given the learnings from the selected completed studies mentioned above, the analysis of still prevailing issues and constraints on the provision and sustenance of rural infrastructure are given below.

3.2.2 Responsibility over Infrastructure Planning, Financing and Implementation (INPUT-OUTPUT)

The Local Government Code of 1991 had vested on LGUs substantial responsibilities over the provision, operation and maintenance of rural infrastructures, i.e. roads and irrigation. While it had increased the available financial resources to the LGUs through the substantial increase in their share of national revenues through their Internal Revenue Allotments, this seemed to be substantially less than the investment, operating and maintenance costs of devolved services and infrastructures.

For LGUs belonging to the lower income classification (See Appendix C), say from third to sixth class municipalities/provinces, the IRA given is below the level needed to provide and sustain the requisites for good governance, i.e. provision of basic services and infrastructures to constituents. Most LGUs falling under these categories would be those whose economies are dependent on agriculture.

The income classification of LGUs serves as basis for, among others:

- a) Fixing of maximum tax ceilings that could be imposed by the LGU;
- b) Determination of administrative and statutory aids, financial grants and other forms of assistance to local governments;
- c) Formulation and execution of local government budget policies; and
- d) Determination of the financial capability of local government units to undertake development programs and priority projects.

The financial capacity of LGUs is therefore of prime importance for it to be able to adequately provide for the roads and irrigation facilities, among others, to develop and sustain its

agriculture sector. In this regard, its capability to finance the construction, operation and maintenance of say, rural roads and irrigation facilities, are affected by the following:

- a) Inequity in the Scheme for Setting and Distributing LGU Share of National Revenues. LGUs are not given sufficient resources to meet the provision of the minimum basic needs of the local communities in the lower income classes. Devolution did not, after all, result in the transfer of financial resources from national agencies whose functions have been devolved to the LGUs. Also, while there has been the significant increase in IRA, not all LGUs enjoy the resulting “windfall”. This is due to the disparity between the cost of functions absorbed by the individual LGU after the transfer of devolved functions and the incremental IRA accruing to each LGU upon application of the IRA formula.

Table 3.1 – 1
Estimated Total Internal Revenue Allotments for LGUs, 1991-2003
(In billion Pesos)

Year	IRA (in billion Pesos)	Increase (Decrease)		Development Fund (in billion pesos)*
		Amount (in billion Pesos)	Percent (%)	
1991	9.84			1.97
1992	20.31	10.47	106.40	4.06
1993	36.72	16.41	80.80	7.34
1994	46.82	10.10	27.51	9.36
1995	52.04	5.22	11.15	10.41
1996	56.59	4.55	8.74	11.32
1997	71.05	14.46	25.55	14.21
1998	76.94	5.89	8.29	15.39
1999	96.78	19.84	25.79	19.36
2000	111.80	15.02	15.52	22.36
2001	121.80	10	8.94	24.36
2002	134.40	12.6	10.34	26.88
2003	141.00	6.60	4.91	28.20
2004	141.00	0.00	0.00	28.20
2005**	151.62	10.62	7.53	30.32
1991-2004	1,117.09	131.16	22.73	226.74

** Mandated in Sec. 287 of LGC as allotment for development projects.

* Proposed under 2005 National Appropriations Act

Source: Department of Budget and Management, 2004

- b) Continued reliance on IRA by LGUs. The IRA accounts for a sizeable percentage (41.7%) of total LGU resources, and while grossly inadequate specially for lower class LGUs to finance basic services and infrastructure, the LGUs have done little to optimize the use of the IRA or to raise additional resources from means allowed under the LGC. Most LGUs do not prepare medium term development plans (or a roads/irrigation master plan) that would establish the priorities for LGU spending, especially for infrastructures and services. The Comprehensive Land Use Plans (CLUPs) is not a suitable replacement to development plans.
- c) Congressional Funds (Pork Barrel) – The congressional allocations are items in the national Annual Appropriations Law, wherein release of funds is subject to the

concurrence, consultation, and/or approval of the District Representative or Senator. “Pork barrel” is defined as government projects or appropriations yielding rich patronage benefits. This is normally achieved during the legislative deliberation over the proposed annual budget of the national government. Thus, congressmen and senators would propose amendments to the proposed budget of the specific national government agency during its deliberations. Sometimes, the amendments come in the form of budgetary insertions for a congressman/senator’s project, where his concurrence, consultation and/or approval are required prior to implementation of the project. This is usually done for national government agencies implementing infrastructure projects.

Since the “pork barrel” are lump sum appropriations, their utilization, subject to specific guidelines issued by the Department of Budget and Management (DBM), are recommended by congressmen/senators based on an allocation per congressman/senator. It does not conform to any plan or prioritization and may, in fact, conflict with the LGU’s plans and priorities. One such “pork barrel” is the Priority Development Assistance Fund in the General Appropriations Law, although the law itself contains other “pork barrel” items.

Priority Development Assistance Fund (PDAF)
In billion pesos

Year	Amount
2002	5.677
2003	8.327
2004	8.327
2005*	6.100

* *Proposed National Appropriations Act 2005*
Source: *National General Appropriations Law 2002-2004*

- d) Cost-Sharing Scheme between the National and Local Government Units – Consistent with the LGC and the incremental financial resources already allocated the various LGUs, national government assistance to LGUs for the implementation of local projects now requires cost sharing or putting up a counterpart fund (equity contribution) by the LGUs. This has not been favorable to the 3rd-6th class municipalities, whose IRA and other revenue sources are insufficient even to pay for regular personal services and maintenance and operating expenditures of the LGU. For this reason, the lower class LGUs are constrained from accessing national government assistance for implementation of projects.
- e) Low Collection Efficiency – Few LGUs have taken the necessary action, including local legislation to improve their fiscal situation. Few have adopted new revenue ordinances, but have not had the political will to actually impose these new taxing powers.
- f) Poor Expenditure Management Practices – While LGUs have been vociferous in their claim of insufficiency of the IRA to fund devolved services, this is not supported by their expenditure patterns, as prioritization for the use of local funds have been less than ideal. The Local Development Councils (LDCs), which should play a major role in the prioritization, allocation and approval of LGU budgets, have not been operationalized or if operationalized, are assembled to just give their stamp of approval on the LGU budget of which they know little about and did not participate in any deliberation or preparatory activities. Programming of LGU resources is ineffective given the control that the local chief executive has over funds utilization and the loopholes imbedded in the system that

permits the local chief executives to revise the spending priorities identified through the budget. In fact, even the sanggunian (local legislatures) has become the microcosm of congress and now insert their own version of the “pork barrel” for the funding of their pet projects. Even with severe constraints in financing, the budgetary pie is further spread thinly which cannot support an effective infrastructure program.

On the aspect of planning roads development, the municipal engineer is already overburdened with various responsibilities and with only one or two staff (usually a draftsman and a clerk), it could ill-afford to prepare even a basic road development plan. Thus, identification of roads project is left to the initiative of the barangay, who, through their council, usually pass a resolution for the undertaking of various road projects in their area. These resolutions are then indorsed to the Sangguniang Bayan (municipal council) and the mayor for their action. Thus, the annual roads investment program is a hodgepodge of projects without any unifying vision or goal. The LGC had intended for the local development councils to consider such projects and their rationale in their consideration of the local annual investment program. Unfortunately, this has been one of the major deficiencies in the prioritization, programming and budgeting of the LGU’s infrastructure development. This includes the following:

- (a) Inadequacies in Local Development Planning – Absence of a participatory and bottoms-up process in the formulation of local development plans as well as less active involvement of NGOs. Development plans are, most of the time, prepared solely by LGU staff with the approval of the Local Development Council taken as a given.

While its organization is mandated under the LGC, many Local Development Councils (LDCs) exist only in paper while those, which are operational, have operational and technical problems such as failure to muster a quorum, absence of a clear and substantial agenda and limited technical capability of members in local planning.

Despite the recognized need for participatory planning, NGOs and the private sector has been limited to attendance at infrequent public consultations to review plans already formulated by various technical groups.

- (b) Continuing Gap Between Plan Formulation and Implementation – Local Development Plans, if they exist, are often crafted only for compliance to national government requirements. It is not implemented largely due to such factors as lack of political will, institutional weaknesses and technical inadequacies.

In the end, the responsibility for implementing local road projects lies with the Municipal Engineers Office (MEO). With a skeletal staff, no equipment and a miniscule allocation for roads construction, repairs and maintenance, the MEO usually contracts out the implementation of its road projects to local contractors. An oft resorted to option is to borrow equipment from either the Provincial Engineers Office (PEO) or the DPWH District Engineer. These two offices generally assist the LGUs in their engineering requirements and lend their resources (manpower and equipment) to the municipality or barangay provided the LGU shoulders the cost of fuel/oil and allowance of the personnel. It may also be possible that the PEO, upon the governor’s instructions, simply lend the equipment including the personnel at the province’s expense.

- (a) Technical Capability of the Local Engineers Offices - Municipalities and barangays do not have the trained and capable manpower and equipment to undertake the proper construction of their road network and irrigation systems. Thus, the Provincial Engineers Office, DPWH and NIA have to assist the LGUs in the planning and implementation of their rural infrastructures.

Given the aforementioned factors, the provincial and national governments have had no other choice but to intervene in the development of these basic rural infrastructures such as roads and irrigation systems, otherwise the lack or absence of such facilities would render the attainment of national agricultural production and rural income targets as given in the Medium Term Development Plan, 2004-2010 unattainable. Using provincial and national funds, the Provincial Engineers Office (PEO) and national agencies such as DPWH, Department of Land Reform (DLR) and NIA undertake the mandate on rural infrastructure already devolved to LGUs.

3.2.2 Responsibility Over the Sustainability of Rural Infrastructures (OUTCOMES)

Based on the previous discussion (Sec. 3.2.1), it is apparent that LGUs neither have the capability nor the financial resources to maintain/sustain rural infrastructure. Thus, the province has, within its also limited resources, to fill in what municipalities cannot provide. This could be in the form of either undertaking the maintenance of the infrastructures themselves or lending its equipment to the municipalities, with the LGU providing the fuel and allowance for the equipment operator and his assistant.

3.2.2.1 Management and Maintenance of Rural Roads

As part of its mandate under the LGC, LGUs are also tasked to manage and maintain their roads system. The division of responsibilities over the roads system is determined by the administrative classification to which a specific road belongs.

As with the funding and implementation of road projects at the LGU level, either the provincial or national government assist the LGU in the management and maintenance of its roads if it does not have the resources to do so. This is done by either making available to the LGU the free use of roads equipment, with the LGU shouldering the cost of fuel and operator's allowance or outright undertaking of the maintenance work itself using provincial or national funds. While the provincial government has been the main partner of the municipalities in the management and maintenance of local roads, the DPWH also assists the LGUs using its equipment, manpower and even financial resources.

Share of the Motor Vehicle User's Charge

R.A. 8794 – AN ACT IMPOSING A MOTOR VEHICLE USER'S CHARGE ON OWNERS OF ALL TYPES OF MOTOR VEHICLES AND FOR OTHER PURPOSES provided for an LGU share in the disposition of the proceeds of the MVUC in the amount of 5%, which was to be deposited in the Special Local Road

Fund. This fund is under the control of the DPWH and is to be apportioned to provincial and city governments in accordance with the vehicle population and size of the road network in their jurisdictions. The fund is to be used exclusively for maintenance of local roads, traffic management and road safety devices (Sec. 7 of R.A. 8794) and is deposited into a separate trust account of the LGU to be known as the “Road Fund Disbursement Account” (Sec. 9g IRR of RA 8794).

It is unclear whether releases to LGUs from the MVUC proceeds have already been made. One important factor that needs to be resolved is the inequity in the allocation of the Special Local Road Fund based on the definition of local roads. Pursuant to the Implementing Rules and Regulations of R.A. 8794, only provinces and cities are authorized to draw from the road fund, while municipalities and barangays (municipal and barangay roads) are excluded. Given that these LGUs also maintain the largest portion of the local roads system, they should also be entitled to an allocation and use of the fund.

Table 3.2 - 1
Share of LGUs of the Proceeds of the MVUC
2001-November 2002, in current million Pesos

Month	2001		2002	
	Fund 152 Special Local Road Fund (5%)	Total MVUC Proceeds	Fund 152 Special Local Road Fund (5%)	Total MVUC Proceeds
January			21.74	434.83
February	49.55	990.96	22.19	444.04
March			21.47	428.58
April	36.69	733.71	22.02	440.26
May			24.47	489.27
June			21.47	429.42
July	18.36	370.62	21.82	436.77
August	20.44	408.51	22.54	451.16
September	16.64	332.74	23.34	466.45
October	21.45	429.95	22.29	445.78
November	7.99	159.83	8.08	153.10
December			-	-
TOTAL	171.12	3,426.31	231.43	4,619.67

SOURCE: Land Transportation Office (LTO)/Road Board

As with the funding and implementation of the construction of local roads, LGUs have the burden to maintaining its road system, which it is also unable to undertake consistently due to financial, technical capability and equipment resource constraints.

3.2.2.2 Management and Maintenance of Communal Irrigation Systems

For the communal irrigation systems (CIS), once completed, its operation and maintenance is transferred to the Irrigators Associations (IAs) created for the purpose. NIA provides the institutional and capacity building requirements for the IAs to assure system sustainability, both operationally and financially. Accurate and reliable information on the current condition of the 6,702 CIS in existence cannot be determined as these have already been turned over to the different IAs in the service area. What is evident though is that the operating status of these IAs are questionable.

As of 2002, out of 5,661 IAs organized nationwide, covering both national and communal systems, covering an approximate area of 1.1 million hectares and with 696,000 member farmers, their status were as follows:

	Functionality⁴		
	<u>Not</u>	<u>Moderately</u>	<u>Very</u>
a.National Irrigation Systems (NIS)	16%	51%	19%
b.Communal Irrigation Systems (CIS)	22%	30%	48%

SOURCE: National Irrigation Administration, 2004

The aforementioned status of the IAs for NIS could therefore explain the poor collection efficiency of Irrigation Service Fees as reported by the NIA, and could also apply to the CIS. Table 3.2-2 below gives the collection efficiency of the NIA for Irrigation Service Fees from 2000-2003. The poor collection efficiency

Table 3.2 – 2
Collection Efficiency – Irrigation Service Fees for NIS
2000-2003, in percent

Description of Items	2000	2001	2002	2003
(in million pesos) Receivable Beginning Balance				
	5,319.46	5,815.47	6,307.12	5,548.30
Billing – Current Accounts	729.24	748.78	1,038.28	1,035.43
Collections				
a. Current Account (CA)	332.38	391.11	551.66	573.77

⁴ The major criteria used for assessing functionality of IAs are as follows: Irrigation and IA Management Related Indicators covering responsibilities/activities that an IA performs in relation to irrigation and IA management such as: a) Operation and Maintenance – Group of indicators covers O&M planning, O&M implementation and O&M performance; b) Organization – Group of indicators includes IA membership, conduct of meetings, and maintenance/safekeeping of IA records/files; c) Financial Performance – includes indicators on financial planning and budgeting, financial accomplishment, financial control, current ratio and viability index; d) Organizational Discipline – includes indicators covering the holding of meetings, conflict resolutions, imposition of membership discipline/sactions, attendance in meetings and participation in group works. Additional indicators include those for activities or functions beyond the usual irrigation related responsibilities of an IA. The ratings used are as follows: 85 and above – Very functional; 65-84 – Moderately functional; and 64 and below – Non-functional.

Description of Items	2000	2001	2002	2003
b. Back Account (BA)- New	86.73	85.79	105.84	111.98
c. Back Account (BA) -Old	8.81	10.72	17.45	33.04
TOTAL COLLECTIONS	427.92	487.63	674.96	719.79
(in percent)				
Collection Efficiency				
a. CA/CA	45.58	52.23	53.13	55.41
b. BA/BA	1.80	1.66	1.95	2.63
c. Total/CA	58.68	65.12	65.01	69.52

SOURCE: National Irrigation Administration, 2004

Some of the current issues and problems⁵ that affect the performance of the IAs are enumerated as follows:

- a) Low percentage of membership as farmer-beneficiaries don't see the benefits in joining the IA and the voluntary nature of the membership;
- b) The IAs do not comply with their own bylaws, i.e. irregular election/non-election of officers;
- c) Some IAs have become an organization of leaders;
- d) Non-transparent management and operations of the IAs;
- e) Lack of accountability and transparency of IA leaders;
- f) Lack of vision to make the IA a self-reliant organization of irrigation farmers;
- g) No capital build-up program and dependency on government assistance;
- h) Low attendance/participation in IA meetings; and
- i) Plans are not strictly implemented/followed.

3.2.2.3 Management and Maintenance of National Irrigation Systems

National Irrigation Systems (NIS) form part of the rural infrastructures but overall responsibility for its management, operation and maintenance is the mandate of the NIA. As with the CIS, the NIA has financial difficulties in maintaining existing systems given the very low ISF collections. The low ISF collections have resulted in the following:

⁵ Mejia, Avelino M, Water Management and the Farmers: Sharing Local Experience and Knowledge – The NIA Experience. Paper presented at the 12th Seminar for Executives on the Development of Appropriate Technology, JIID-MAFF, Tokyo, Japan, 2-7 February 2004. Mr. Mejia is the Department Manager, Institutional Development Department, NIA.

- a) Inability of the NIA to maintain existing national systems and assure its capacity to provide the water requirements of farmer-beneficiaries within its service areas. In most cases, due to insufficient ISF collection, NIA field offices are unable to pay the remuneration/incentives on time due the various IAs with O&M contracts;
- b) Inability of NIA to compensate its own O&M staff that are displaced with the implementation of the Irrigation Management Transfer (IMT) program wherein NIA and the IAs share the income collected from the ISF effectively further reducing the income of NIA. NIA is still required to pay the salaries and benefits of redundant O&M staff affected by the IMT;
- c) Inability of the NIA to develop other systems to irrigate the still remaining potential irrigable areas estimated at 1.73 million hectares (based on the 3% slope criteria). As a government corporation, NIA relies on its income (ISF) to finance its operations and capital investments. Access to Official Development Assistance (ODA) is affected by its inability to provide the required counterpart funds; and
- d) NIA relies on national government appropriations through the Department of Agriculture for funds to repair/rehabilitate and/or construct new systems. For irrigation projects integrated into other agencies' projects, i.e. ARCDP, ARISP, etc., NIA collects a minimal management/service fee for the supervision and/or other assistance provided.

With regards the ISF, this has been set at:

Wet season cropping: 2 cavans/hectare

Dry season cropping: 3 cavans/hectare

since 1972 and adjusted regularly by subsequent Letter of Instructions issued by the President and now through resolution/memorandum/administrative order issued by the NFA.

The reference base price used for computing the ISF is the prevailing government support price for palay and corn. This is given in Table 3.2-3 below. Evidently, the ISF is not based on the true cost of providing, operating and maintaining the system.

Table 3.2 – 3
Support Price for Palay and Corn – 1972-2004
In pesos per kilogram

PALAY								
	Date	Price		Date	Price		Date	Price
1	12 Jan 72	0.55	10	1 Apr 79	1.30	19	20 Oct 84	2.90
2	25 May 73	0.60	11	1 Jul 80	1.40	20	8 Dec 84	3.35
3	15 Sep 73	0.70	12	21 Oct 80	1.45	21	8 Jun 85	3.50
4	18 Jan 74	0.80	13	17 Jun 81	1.55	22	1 Oct 89	4.50
5	28 Nov 74	1.00	14	22 May	1.70	23	1 Nov 89	5.00

				82				
6	1975	1.00	15	1 Oct 83	1.80	24	1 Oct 90	6.00
7	29 May 76	1.10	16	28 Nov 83	2.10	25	1 Feb 96	8.00
8	1977	1.10	17	26 May 84	2.35	26	1 Feb 99	10.50
9	1978	1.10	18	9 Jun 84	2.65	27	1 Mar 99	10.00
						28	1 Dec 04	10.00

SOURCE: National Food Authority (NFA), 2004

CORN

	Date	Price		Date	Price
1	17 Jan 72	0.285	13	1 Sep 83	1.40
2	Nov 72	0.40	14	1 Dec 83	1.65
3	25 May 73	0.50	15	26 May 84	2.00
4	20 Feb 74	0.62	16	9 Jun 84	2.30
5	15 Oct 74	0.80	17	20 Oct 84	2.50
6	29 May 76	0.90	18	20 Mar 85	2.90
7	1977	0.90	19	1 Oct 89	3.90
8	1978	0.90	20	26 Jul 90	4.00
9	21 Sep 79	1.00	21	17 Sep 90	4.50
10	30 Jul 80	1.10	22	30 Jul 96	6.00
11	29 Dec 80	1.20	23	23 Nov 04	7.00
12	17 Jun 81	1.30			

SOURCE: National Food Authority (NFA), 2004

3.2.3 Performance of Previous Investments (IMPACTS or RESULTS)

3.2.3.1 Performance of the Agriculture Sector – Major Crops

The typical Filipino farmer, as shown in studies, is only 40 percent efficient as the best Filipino farmer. Over the past decade, the average annual yields ranged from a low of 2.7 tons/ha (1998) to a high of 3.19 tons/ha (2001). Seventy-five of every 100 farmers produce less than 4 tons/ha owing to their inability to benefit from high-yielding technologies arising from:

- a) high costs of production (farming inputs) relative to profitability;
- b) uncertainties in production (insect pests, diseases, typhoons, drought
- c) low or fluctuating prices of palay; and;
- d) inaccessible credit facilities.

These factors are aggravated by the inadequacy of irrigation facilities to sustain rice production.

A household survey conducted by the Department of Agriculture-Philippine Rice Research Institute (DA-PhilRice) has shown that production losses during the wet season can reach up to 945 kg/ha, or 29 percent of production. Of this, 358 kg/ha loss is attributed to typhoon or strong wind, 250 kg/ha to pests, 198 kg/ha to drought, and the rest to other causes. Losses are much higher during the dry season, which can add up to 1,298 kg/ha. The highest contributor to this is drought (759 kg/ha), which can best be reduced with improved management of irrigation systems. Damage by typhoons or strong winds is only 253 kg/ha, while by pest, 205 kg/ha.⁶

The volume of agricultural production has continued to grow over the 1998-2003 period for major crops, except for tobacco and abaca, as given in Tables 3.2-4 and 3.2-5 below. From 2000-2003, the irrigated national and communal systems hectareage increased by 3.9 and 31.8 hectares, respectively. While irrigation is assumed to be a major factor in the increase of agricultural production, this does not seem to be the case for the major crops, since the increase in agricultural production has been more substantial proportionate to the increase in irrigated land area.

Table 3.2 – 4
Volume of Production – Major Crops, 1998-2003
(in thousand metric tons)

Crops	1998	1999	2000	2001	2002	2003	Growth Rate (%) 1998-2003
Palay	8,554.83	11,786.63	12,389.42	12,954.87	13,270.66	13,499.89	9.55
Corn	3,823.17	4,584.60	4,511.10	4,525.02	4,319.27	4,615.62	3.84
Coconut	11,597.57	11,118.29	12,994.70	13,207.85	13,682.56	14,059.01	3.92
Sugarcane	17,333.37	22,336.78	24,491.00	28,541.43	27,202.88	24,746.31	7.38
Banana	3,492.58	3,869.17	4,929.56	5,059.35	5,264.47	5,368.97	8.98
Pineapple	1,488.68	1,530.04	1,559.56	1,617.90	1,635.93	1,696.34	2.65
Coffee	109.18	119.15	126.34	130.69	124.22	104.61	-0.85
Mango	865.16	802.81	848.32	879.73	955.89	1,004.34	3.03
Tobacco	61.95	56.27	49.53	48.17	50.17	52.89	-3.11
Abaca	71.22	72.89	77.20	72.86	67.11	78.58	1.99

SOURCE: Bureau of Agricultural Statistics/Department of Agriculture, 2004

Table 3.2 – 5
Average Weighted Farm gate Prices – Major Crops, 1998-2003
(in pesos per kilogram)

Crops	1985	1998	1999	2000	2001	2002	2003	Growth Rate (%) 1998-2003
Palay	3.28	8.08	7.82	8.48	8.13	8.73	8.74	1.58
Corn	2.96	5.62	5.72	6.57	6.81	6.58	7.05	4.64
Coconut	1.52	3.47	3.78	1.99	1.84	2.69	2.74	-4.61
Sugarcane	0.32	0.82	0.84	0.67	0.72	0.79	0.91	2.10
Banana	1.79	4.95	5.90	4.48	4.77	5.48	5.60	2.50

⁶ Department of Agriculture website

Pineapple	1.85	6.92	6.47	6.70	6.03	6.22	6.04	-2.68
Coffee	23.20	55.27	51.91	37.05	29.25	29.75	36.47	-7.98
Mango	7.29	18.12	22.94	18.61	16.63	15.38	14.53	-4.32
Tobacco	15.11	47.53	55.08	39.95	38.56	45.43	45.44	-0.90
Abaca	6.45	18.39	19.79	17.61	15.51	16.50	19.85	1.54

SOURCE: Bureau of Agricultural Statistics/Department of Agriculture, 2004

Unfortunately, the need for Results Monitoring and Evaluation (RME) to determine and measure the impacts of, not only foreign-funded projects, but most especially the locally funded ones is not appreciated and considered a necessity. The Department of Agriculture, Department of Land Reform (DLR), DPWH and NIA do not conduct any results monitoring and evaluation of their various projects. The closest to any RME system is DLR's ARC Level of Development Assessment or ALDA, which monitors the development of ARCs, the interventions that have been implemented in these ARCs and the improvement in such areas as agricultural production and quality of life.

If the national government agencies are not measuring the impacts of their projects, more so the LGUs which neither have the resources nor the technical capacity to undertake RME.

3.3 Shipping Rates

3.3.1 The Issue of High Domestic Shipping Costs

Recently, there has been the revival of an old issue on the high cost of domestic shipping services as compared to those of foreign shipping companies engaged in the carriage of the country's exports and imports. This, however, still needs validation as the comparability of local and foreign freight rates must first be determined.

In 1991, the United States Agency for International Development (USAID) had contracted Nathan Associates Inc., under its technical resources project, the conduct of the Interisland Liner Shipping Rate Rationalization Study. The objectives of the Study were as follows:

- ☐ Examination of the Mindanao grain shipment situation to confirm that liner rates for these shipments have been held too low in the past, with assessment of the economic effects of the inappropriate rates and identification of a desirable strategy to ensure adequate accommodation of Mindanao grain shipments in the future;
- ☐ Examination of the constraints placed on liner shipping accommodation of fruits and vegetables by unrealistically low rates, with assessment of the economic effects of the inappropriate rates and identification of a strategy to ensure sufficient accommodation of fruits and vegetable shipments in the future;
- ☐ Examination of passenger services to determine whether the potential to improve profitability and service standards exists;
- ☐ Investigation of the possibility that passenger and cargo rate regulation has impeded introduction of desirable new liner services and identification of a strategy for ensuring more rapid introduction of desirable services in the future; and
- ☐ Identification of the possible effects of liner shipping rate deregulation, with and without concomitant service liberalization or deregulation, on the degree of liner shipping industry concentration and rate levels and structure and recommendations on the optimal manner and extent of rate deregulation.

Since the old issue on high freight rates had mostly to do with grain shipments from Mindanao, it was decided to focus on this factor since it influences agricultural production and productivity.

With regards the corn trade, the Study determined that:

- ☐ Corn production in the Philippines is much more costly than in the principal corn-exporting countries. It would therefore be better off for the Philippines to buy the corn for significantly less than it can produce it;
- ☐ Corn is best shipped in bulk and the large buyers of corn ship mainly by chartering tramp vessels, often a tug and barge set (two barges) that might carry corn in bulk or in bags;
- ☐ Smaller shippers face some problems:
 - They must buy or rent drying equipment to reduce corn moisture content to levels acceptable to consignees in Manila and Cebu;
 - They must store the grain until it is shipped;
 - If consignment sizes do not warrant chartering a vessel, they must rely on liner shipping to carry the grain;
 - To the extent that liner vessels accommodate corn shipments, these are primarily containerized with advantages including reduction in grain losses due to pilferage and spillage. However, there are not enough containers to accommodate all demand due to the pronounced peaking of small grain shipper demand and the low regulated rates for shipping by liner vessels (tramp vessels which are not regulated usually impose higher charges than are permitted for the liner industry). The problems of the small corn shippers are generally passed on to farmers through lower producer prices.
- ☐ The rapid increase of corn production on the island of Luzon limits the amount of Mindanao corn that can be sold in Manila at the current level of efficiency of interisland shipping.

The cost of shipping grains therefore is dependent on such factors as:

- ☐ The type of shipping services utilized (whether liner or tramp, with trampers presumably being more expensive);
- ☐ The size of the shipment;
- ☐ If liner service is used, containerization is the most beneficial modality but due to seasonality of grains shipment, container availability is a major constraint; and
- ☐ The cost of shipping operations.

With respect to the last bullet statement, cost of shipping operations⁷ is affected by the following:

⁷ Emerson M. Lorenzo, *The Domestic Shipping Industry of the Philippines: A Situation Report*, Domestic Shipping Office, Maritime Industry Authority, 2000.

- ⊖ High fuel cost, with vessels consuming largely diesel and special fuel oil for their operations. Based on comparisons on the fuel prices in other countries, it would appear that in 1998 for example, domestic vessels pay 8.7%-51.3% more for fuel oil and 23.7%-40.2% more for diesel oil compared to their foreign vessel counterparts;
- ⊖ High interest rates, which revolves around the interest rates shouldered by ship owners/operators arising from needed capitalization. Thus, ship owners/operators may pay 43.5%-173.5% more in terms of interest rates compared to their Asian counterparts;
- ⊖ High insurance premium, which are the payments for insurance premium relative to protection and indemnity (P&I) and hull and machinery insurance of vessels. This accounts for about 2.4% of ship owner's total operating costs. While no data are available, it is general acceded that domestic vessels pay higher cost of insurance premiums compared to their Asian counterparts in international trade;
- ⊖ Lower port efficiency and productivity, wherein the lower cargo handling productivity to which our domestic vessels are confronted places them at a disadvantage compared to their foreign counterparts;
- ⊖ Higher taxes for domestic shipping operations, wherein domestic shipping operators are subjected to 34% income tax, 10% value added tax (VAT) and 3% common carriers' tax among others compared to the 2.5% tax on gross income for foreign shipping lines; and
- ⊖ Higher cost in domestic liner operations to subsidize passenger carriage and services in less profitable routes. The typical revenue profile of domestic liner vessels is 65% of total revenue is accounted for by freight and 35% by passengers. Considering that passenger-carrying vessels are required to allocate 50% of their passenger capacity to 3rd class accommodations (except for those accredited by the Department of Tourism), the rate of which is regulated and prescribed by government, freight rates of domestic liner vessels are designed not only to recover cargo carriage cost but likewise provide subsidization to passenger carriage operations. Given the low airfares brought about by liberalization in the air industry, shipping operators are constrained from increasing current passage rates for 1st and 2nd class accommodations less they lose patronage to the airlines.

3.4 National Transport Policies

The groundbreaking study on the Philippines' National Transport Policies was undertaken in 1996 through a technical assistance funded by the Asian Development Bank (ADB) and implemented by Halcrow Fox. The Philippine Transport Strategy Study⁸ identified the need for improving the government process in the various sub-sectors in transport. It viewed existing institutions as ineffective given that:

- ⊖ Government had no clear transport policy or strategy;
- ⊖ Too few projects have been prepared for implementation;
- ⊖ Little effective monitoring of sector performance has taken place;
- ⊖ Consultants are used ineffectively and the results of major studies ignored; and

⁸ Halcrow Fox in association with Halcrow, Halcrow-Transmark, DCCD and SGV, Philippine Transport Strategy Study, funded through a Technical Assistance of the Asian Development Bank to the Government of the Philippines, 1996.

- ③ There is little linkage between the planning process and what is implemented.

Government therefore has to:

- (1) Determine policy and strategy by defining the major development priorities to provide the basis for targeting public resources and identifying the core infrastructure projects to act as the catalyst for promoting its development;
- (2) Create the framework for private sector participation by determining a clear policy for participation, establishing the necessary regulatory framework (economic, technical and legal) and preparing implementable and fundable projects; and
- (3) Re-engineer the government bureaucracy to perform in the new market-led environment.

For Roads, PTSS recommended the implementation of the recommendation of the Philippine Road Classification Study (PRCS), which up to now has not been implemented, to reduce the national road network from 27,000 km to 20,000 km. This signals a fundamental shift in responsibility for roads and require increased funding for cities and municipalities who will take over responsibility for maintenance and capital expenditure on 25% of national roads and 33% of provincial roads.

The first priority for road investment should be the maintenance of existing assets, followed by rehabilitation, then improvements, as funds would allow. New roads should be last in priority, with development roads receiving priority over other “missing links” in the main road network.

For Ports, PTSS recommended the restructuring/reallocation of the existing functions of the Philippine Ports Authority (PPA) and change tariffs.

- ③ PPA to be financially accountable, set national port priorities and prepare priority projects for implementation;
- ③ PPA’s regulatory functions to be vested in an independent ports regulator which should allow port tariffs to be progressively changed, removing distortions and increasing tariffs so that users pay the full costs of the services provided; and
- ③ PPA to cease operating ports after a transition period, and transfer this to the private sector.

4

Proposed Reform Agenda for Rural Infrastructure

4.1 Long-term Reform Agenda

4.1.1 Amending the Local Government Code of 1991

Section 521 of the LGC mandates the mandatory review by Congress of the code “at least once every five (5) years and as often as it may deem necessary with the primary objective of providing a more responsive and accountable local government structure”. Almost fourteen (14) years after the passage of the law, no such review has been made. Apparently, the various issues that have cropped up from 1991-2004 can no longer be ignored and the measures that have been implemented to resolve such issues have served only to worsen the problems.

More specifically, the most compelling of issues concern the inequitable distribution of resources through the IRA, where those LGUs most in need get the least. This refers to the 3rd-6th class LGUs particularly, whose share of the IRA seems to be insufficient even in sustaining its administrative operations, particularly the salaries of employees. Given its mandate to provide the basic rural infrastructure, such as rural roads and irrigation systems among others, these have been left unserved with the provincial and national governments taking up the cudgels for these impoverished LGUs in providing said infrastructures. The compelling argument for such intervention is that, if left unprovided, national targets for increased agricultural production and improvement in the quality of life of the rural poor, will never be attained.

A. Strategic Thrust

Amendment of the Local Government Code of 1991 to rationalize the mandate of Local Government Units (LGUs), specifically municipalities classified from 3rd-6th class, consistent with their financial and technical capacity to provide rural infrastructures.

A1. Key Lever

Transfer those functions, which the LGUs neither have the financial nor technical capacity to implement, to the province (higher LGU).

A1.1 Proposed Action

Review of Section 17 of the LGC with the objective of determining, which among its mandated responsibilities for the provision of basic services and facilities, the LGU is capable of undertaking and those which should henceforth be assumed by the province (higher LGU).

A1.1.1 Time Frame

2005-2010

A1.2 Proposed Action

Review of Section 7 of the LGC with the objective of setting the basic criteria for the creation and conversion of LGUs to include not only income, population and land area, but also such other factors as the cost of governance, potential to generate revenues internally and the economics of implementing/providing basic services and infrastructures.

A1.2.1 Time Frame

2005-2006

B. Strategic Thrust

Enhanced capacity of LGUs to implement mandates through a more responsible system of governance and through a technically competent bureaucracy.

B1. Key Lever

Strategic and participatory planning and prioritization of investments for the optimum utilization of the LGUs financial resources.

B1.1 Proposed Action

Development and implementation of a LGU performance monitoring and evaluation system with the corresponding rewards/penalty system.

B1.1.1 Time Frame

2005-2006

B1.2 Proposed Action

Institutional strengthening and capacity building of the local planning institutions and planning staff including members of the local development councils, respectively, not only in the intricacies of plan preparation but also in monitoring and evaluation of plans, programs and projects.

B1.2.2 Time Frame

2005 - Continuing

C. Strategic Thrust

Development and Implementation of Minimum/Recommended Standards for Various Rural Infrastructures.

C1. Key Lever

Develop appropriate standards for rural infrastructures

C.1.1 Proposed Action

Review of various infrastructure standards (roads/irrigation) to determine the most appropriate and implementable minimum standards considering the type and volume of traffic to be carried, topographic and climatologic condition of the area and affordability (cost of the facility).

C.1.1.1 Time Frame

2005 - 2006

C1.2 Proposed Action

Enhance the capability of the LGUs in the implementation of rural infrastructure through the regular training of its municipal engineers and advisory assistance by DPWH and NIA in the planning, implementation and maintenance of rural infrastructures by contract.

C1.2.1 Time Frame

2005 - Continuing

D. Strategic Thrust

Establishment of an Updated LGU Infrastructure Database

D1 Key Lever

Improved supervision of LGUs by the Department of the Interior and Local Government (DILG) including the monitoring of the utilization of the 20% development fund and the LGU general fund for infrastructure and other projects.

D1.1 Proposed Action

Review of Section 25 of the LGC on the establishment of a clear and coherent system for supervising the LGUs particularly in the preparation and implementation of multi-year local socio-economic development plans and investment programs, and the ensuing annual investment programs.

D.1.1.1 Time Frame

2005 - 2007

D.1.2 Proposed Action

Development, implementation and annual updating of a LGU database that would contain up-to-date and relevant information on the inventory of rural infrastructures, quality and description of these provided by the LGUs and national government and the projects being undertaken in the LGUs by type and fund source.

D.1.2.1 Time Frame

2005 - 2007

4.2 Enhancing the Capability of the Provinces in Developing and Sustaining Rural Roads

The current system for the classification of roads by administrative responsibility does not consider the existing capacities of LGUs, specifically municipalities, in providing for and maintaining their road systems. While the LGC specifically mandates each LGU type responsibility for providing and maintaining its road system, this seems to be essentially a carry-over of the existing method for road classification.

At the LGU level, it would seem that it is only the province (cities excluded), which have the financial and technical capability for roads planning, construction and maintenance. In fact, the provincial engineers office oftentimes is better equipped with road construction and maintenance equipment than the District Engineer of the DPWH. For some provinces, which have an extensive inventory of roads equipment, this has been treated as an economic enterprise from which the province is supposed to earn revenues.

A. Strategic Thrust

Enhanced capability of the provinces in providing and maintaining rural roads in support of agricultural development through improved market access for farmers.

A1. Key Lever

Integration of the function for the provision and maintenance of rural roads (excluding city roads) under the province.

A1.1 Proposed Action

Amendment of Section 17 of the LGC by integrating overall responsibility for roads construction and maintenance under the province.

A1.1.1 Time Frame

2005 - 2010

A1.2 Proposed Action

Increase in the provinces' IRA to provide for adequate compensation for the additional responsibility over all rural roads within their areas (except cities) by amending Section 285 of the LGC.

A1.2.1 Time Frame

2005 - 2010

A1.3 Proposed Action

Based on the review of the existing road classification system, a new classification system should be finalized using clear, equitable and accountable criteria, including the enabling legislation. The roads proposed for transferred to the LGUs based on the implementation of the “new” road classification should first be repaired to an appropriate level before transfer and the financial measures provided to mitigate the financial burden of such transfers on the LGUs, i.e. increase in IRA of the provinces to compensate for the cost of sustaining the devolved roads, if any.

A1.3.1 Time Frame

2005 - 2007

A2. Key Lever

Institutional strengthening and capacity building for the provincial engineers office to undertake additional responsibilities over the provision and maintenance of rural roads.

A2.1 Proposed Action

Training of the technical staff and advisory assistance to the provincial engineers office for the planning, implementation and maintenance of rural roads including the preparation of detailed Road Construction and Maintenance Manuals to promote sound road construction and maintenance practices. This should also include detailed costing procedures so as to draw awareness to the true cost of road construction and maintenance.

The requisites for a Performance-Based Road Maintenance System includes the following: (1) Proper road construction based on accepted technical standards; (2) Strict regulation of overloaded trucks; (3) Minimal damage from calamities; and (4) Sufficient technical know-how of contractors in order to properly assess maintenance requirements.

A2.1.1 Time Frame

2005 - Continuing

4.3 Rationalizing the Provision of Rural Infrastructures to LGUs by the National Government

Section 17f of the LGC allows for the provision or augmentation of the basic services and facilities by higher level LGUs or the national government if these are not made available by the affected LGU. At the national government level, such interventions normally come in the form of the congressional “pork barrel” and other lump sum provisions in the National Appropriations Act intended for providing for LGU-based infrastructures. In addition, the national agencies negotiate for and implement foreign-assisted projects in the LGUs, oftentimes without advance firm commitment from the affected LGUs to participate in such programs or consideration of the consistency of such programs/projects with the LGU’s priorities/development plans.

In addition, LGUs are often required to provide equity in these foreign-assisted projects without considering the financial condition of the LGUs or their ability to put up such equity.

A. Strategic Thrust

Effective allocation and use of national government assistance to LGUs through the proper coordination of such assistance and consistency with local priorities/development plans/investment programs.

A1. Key Lever

Availability of regularly updated local development plans/investment programs endorsed by an operational local development council and approved by the LGU Sanggunian

A1.1 Proposed Action

Same as Section 4.1 B1.2.

A1.1.1 Time Frame

2005 - Continuing

A1.2 Proposed Action

Same as Section 4.1 B1.1

A1.2.1 Time Frame

2005 - 2007

A2. Key Lever

Consistent national government policies on the access of LGUs to national government financial assistance including use of the congressional “pork barrel” and other lump sum appropriations that require coordination with district representatives in its use.

A2.1 Proposed Action

Formulation of consistent national government policies/guidelines on financial assistance arrangements for LGUs by class.

A2.1.1 Time Frame

2005 - 2006

4.4 Institutionalization of Results Monitoring and Evaluation

National and local governments seems primarily concerned on the outputs produced by various foreign and locally-funded projects, but as the Results Chain adequately shows, outputs are the means/precondition towards attaining outcomes and results/impacts. Thus, there is a substantial gap with regards knowledge on whether said projects achieve their purposes/objectives and goals, i.e.

quantification of irrigation or roads in the increase in agricultural production and/or productivity. While current methodologies for measuring outcomes and impacts/results tend to be overly complicated, there is need to develop simplified techniques that would allow the measurement of project outcomes and impacts/results at the least cost and shortest possible time.

Or RME could be undertaken for a significant sample of both foreign and locally-funded projects to determine whether indeed the targeted or desired level of results have been achieved.

A more important reason for the conduct of Monitoring and Evaluation and RME in particular is that the learning from project implementation and operation would substantially improve the quality of future project designs, as these would already incorporate changes that would avoid the recurrence of past mistakes.

A. Strategic Thrust

Institutionalization of the M&E function, especially RME, and the regular conduct of Impact Analysis of projects throughout their life cycles.

A1. Key Lever

National government agencies and LGUs effectively undertake M&E of their projects and use the results to improve subsequent project designs.

A1.1 Proposed Action

Development of the institutions and capacity building of the technical staff in the conduct of M&E, especially RME.

A1.1.1 Time Frame

2005 - Continuing

A1.2 Proposed Action

Allocation of annual budgets for M&E units for the regular conduct of RME.

A1.2.1 Time Frame

2005 - Continuing

4.5 Constraints to Implementing a Reform Agenda for Rural Infrastructure

4.5.1 Implementability of Proposed Reforms

There have already been significant clamor for the amendment of the Local Government Code of 1991 from various sectors, including the LGUs themselves who have had to tackle the numerous issues that have been brought to light once the LGC was implemented. While the LGC itself mandates a regular review every five (5) years by congress intended to identify the LGC's weaknesses and to further strengthen the Code through the introduction of amendments to correct identified deficiencies. However, no such review has been undertaken.

Thus, as the LGC remains unchanged, the critical issues that requires resolution through the revision/amendment of the Code, will remain unresolved. Various sectors have attempted to identify ways of resolving the identified issues short of amending the code, but these are merely stop-gap measures. In the end, the LGC has to be amended and without that amendment, the gap between what the LGU is mandated to do and what it is capable of doing will widen further. This may eventually lead to the growing lack of rural infrastructures that are essential for meeting national targets in agricultural production, productivity and quality of life improvement at the rural level.

The circuitous process in which the national government assists the LGU have only lead to the national government itself assuming the devolved functions, i.e. NIA providing for and rehabilitating communal irrigation systems using national funds (using lump sum appropriations for CIS and congressional “pork barrel”) or foreign-loans/assistance guaranteed by the national government with minimal LGU equity as counterpart. For rural roads, the higher level LGUs, the province in this case, and the national government through the DPWH, have had to implement roads projects at the local level. Thus, this multiple track for providing rural infrastructures frequently leads to multiple allocation of funds for the same project or the implementation of roads projects outside of the LGU’s priority.

The LGU, despite the declared policy of a meaningful and genuine local autonomy, has not reached the level of maturity envisioned and continues to depend on national government assistance for the provision of rural infrastructure, specially for the 3rd-6th class LGUs.

The prerequisite for the reform agenda for rural infrastructure is the amendment of the Local Government Code of 1991. Any action short of the proposed amendment will only result in the further worsening of the inability of LGUs to implement its mandate with respect the provision of rural infrastructure.

APPENDIX A: Road Length by Road Type, By Region and Province, in kms.

Region	Province	Road Length (in kms.)				Land Area (sq.km)	Road Density (km./sq.km)
		Paved	Gravel	Earth	Total		
I	Ilocos Norte	82.5	426.9	97.8	607.3	3,399.3	0.18
	Ilocos Sur	60.8	258.2	0.0	319.0	2,579.6	0.12
	La Union	78.3	176.8	2.1	257.2	1,493.1	0.17
	Pangasinan	293.9	560.9	0.0	854.8	5,368.2	0.16
	Sub-Total	515.5	1,422.8	99.9	2,038.2	12,840.2	0.16
II	Batanes	15.4	42.9	13.0	71.3	209.3	0.34
	Cagayan	96.7	414.2	16.8	527.7	9,002.7	0.06
	Isabela	34.6	545.7	0.0	580.2	10,664.5	0.05
	Nueva Vizcaya	45.2	355.8	41.6	442.6	3,903.9	0.11
	Quirino				0.0	3,057.2	-
	Sub-Total	191.9	1,358.6	71.4	1,621.9	26,837.6	0.06
CAR	Abra	68.6	166.0	228.2	462.9	3,975.6	0.12
	Apayao	13.2	96.4	55.8	165.3		-
	Benguet	38.9	163.6	136.5	339.0	2,655.4	0.13
	Ifugao	26.7	89.9	65.2	181.8	2,517.8	0.07
	Kalinga	15.3	81.2	6.5	102.9		-
	Mt. Province	15.3	171.5	139.1	325.9	2,097.3	0.16
	Sub-Total	178.0	768.5	631.3	1,577.9	18,293.7	0.09
III	Bataan	163.2	141.8	0.0	305.1	1,373.0	0.22
	Bulacan	200.7	166.9	0.0	367.6	2,625.0	0.14
	Nueva Ecija	166.5	531.0	0.0	697.5	5,284.3	0.13
	Pampanga	178.3	57.9	93.9	330.1	2,180.7	0.15
	Tarlac				0.0	3,053.4	-
	Zambales	134.0	81.0	0.0	215.0	3,714.4	0.06
	Sub-Total	842.7	978.6	93.9	1,915.2	18,230.8	0.11
IV	Aurora	8.2	161.5	0.0	169.7	3,239.5	0.05
	Batangas	250.9	355.3	30.8	636.9	3,165.8	0.20
	Cavite				0.0	1,287.6	-
	Laguna	225.6	26.7	0.0	252.3	1,759.7	0.14
	Marinduque	28.2	145.2	0.0	173.4	959.2	0.18
	Occidental Mindoro	6.7	80.7	0.0	87.4	5,879.8	0.02
	Oriental Mindoro	9.5	725.2	0.0	734.7	4,364.7	0.17
	Palawan	37.7	893.6	0.0	931.3	14,896.3	0.06
	Quezon	52.8	446.4	0.0	499.2	8,706.6	0.06
Rizal	16.2	3.3	0.0	19.5	1,308.9	0.02	
Romblon	30.2	158.9	73.6	262.8	1,355.9	0.19	

Region	Province	Road Length (in kms.)				Land Area (sq.km)	Road Density (km./sq.km)
		Paved	Gravel	Earth	Total		
	Sub-Total	666.0	2,996.8	104.4	3,767.1	46,924.0	0.08
V	Albay	148.6	201.7	69.8	420.0	2,552.6	0.17
	Camarines Norte	95.4	51.2	0.0	146.6	2,112.5	0.07
	Camarines Sur	258.0	689.5	192.0	1,139.5	5,266.8	0.22
	Catanduanes	18.7	204.8	0.0	223.5	1,511.5	0.15
	Masbate	5.8	62.0	50.0	117.8	4,047.7	0.03
	Sorsogon	41.6	137.6	45.0	224.2	2,141.4	0.11
	Sub-Total	568.0	1,346.8	356.8	2,271.6	17,632.5	0.13
VI	Aklan	49.4	222.7	6.0	278.1	1,817.9	0.15
	Antique	9.7	192.7	0.0	202.4	2,522.0	0.08
	Capiz	8.7	370.9	23.3	402.9	2,633.2	0.15
	Guimaras	1.6	100.6	20.0	122.2		-
	Iloilo	55.5	627.4	0.0	682.9	5,324.0	0.13
	Negros Occidental	233.1	554.6	0.0	787.7	7,926.1	0.10
	Sub-Total	358.0	2,068.9	49.3	2,476.1	20,223.2	0.12
VII	Bohol	28.3	841.3	42.8	912.4	4,117.3	0.22
	Cebu				0.0	5,088.4	-
	Negros Oriental	66.2	337.8	129.8	533.9	5,402.3	0.10
	Siquijor	10.2	179.1	0.0	189.3	343.5	0.55
	Sub-Total	104.8	1,358.2	172.6	1,635.6	14,951.5	0.11
VIII	Biliran	1.9	52.2	2.6	56.7		-
	Eastern Samar	14.6	272.1	17.7	304.5	4,339.6	0.07
	Leyte	114.7	477.1	0.0	591.8	6,268.3	0.09
	Northern Samar	16.5	82.0	17.5	116.1	3,498.0	0.03
	Samar	8.6	141.4	0.0	150.0	5,591.0	0.03
	Southern Leyte	30.4	254.2	37.6	322.2	1,734.8	0.19
	Sub-Total	186.8	1,279.0	75.4	1,541.2	21,431.7	0.07
IX	Basilan	4.9	120.6	103.7	229.2	1,327.2	0.17
	Zamboanga del Norte	25.5	754.6	12.1	792.2	6,618.1	0.12
	Zamboanga del Sur*	65.8	700.2	44.7	810.7	8,052.0	0.10
	Sub-Total	96.2	1,575.4	160.4	1,832.0	15,997.0	0.12
X	Bukidnon	24.6	634.6	30.9	690.1	8,293.8	0.08
	Camiguin	14.6	41.8	39.1	95.6	229.8	0.42
	Misamis Occidental	13.1	463.9	38.4	515.4	1,939.3	0.27
	Misamis Oriental	33.6	299.7	168.2	501.5	3,570.1	0.14
	Sub-Total	85.9	1,440.1	276.6	1,802.5	14,033.0	0.13

Region	Province	Road Length (in kms.)				Land Area (sq.km)	Road Density (km./sq.km)
		Paved	Gravel	Earth	Total		
XI	Compostela Valley	5.2	723.1	50.0	778.3		-
	Davao del Norte	12.1	982.8	0.0	994.9	8,129.8	0.12
	Davao del Sur	54.8	385.7	0.0	440.4	6,377.6	0.07
	Davao Oriental	4.4	90.3	424.6	519.2	5,164.5	0.10
	Sarangani				0.0		-
	South Cotabato	48.4	590.9	0.0	639.3	7,468.8	0.09
	Sub-Total	124.8	2,772.7	474.6	3,372.1	27,140.7	0.12
XII	Cotabato	1.7	315.9	130.3	447.9	6,565.9	0.07
	Lanao del Norte	6.8	276.2	0.0	283.0	3,092.0	0.09
	Sultan Kudarat	5.5	404.0	205.1	614.6	4,714.8	0.13
	Sub-Total	14.0	996.1	335.5	1,345.5		-
XIII	Agusan del Norte	36.7	203.0	3.4	243.1	2,590.3	0.09
(CARAGA)	Agusan del Sur	7.4	259.5	42.5	309.4	8,965.5	0.05
	Surigao del Norte	16.1	271.9	72.8	360.8	2,739.0	0.13
	Surigao del Sur	8.9	271.2	0.0	280.1	4,552.2	0.06
	Sub-Total	69.0	1,005.6	118.8	1,193.4	18,847.0	0.06
ARMM	Lanao del Sur	1.4	113.5	301.8	416.6	3,850.3	0.11
	Maguindanao	0.6	55.2	286.0	341.8	4,871.6	0.07
	Sulu	81.6	0.0	227.5	309.2	1,600.4	0.19
	Tawi-Tawi	33.2	87.3	337.8	458.4	1,087.4	0.42
	Sub-Total	116.8	256.0	1,153.1	1,525.9	11,409.7	0.13
TOTAL		4,118.3	21,624.1	4,174.0	29,916.4	300,000.0	0.10

* Zamboanga del Sur has recently been divided into two (2) provinces, Zamboanga del Sur and Sibugay.

Source: Department of Public Works and Highways

APPENDIX B: On-Going and Proposed Projects of the National Irrigation Administration, 2004-2010

	NAME OF PROJECT	ESTIMATED PROJECT COST (in million P)	FUNDING REQUIREMENT (P 000,000)								TOTAL 2001-2010
			2001	2004	2005	2006	2007	2008	2009	2010	
A.	ON-GOING PROJECTS										
1	Malitubog-Maridagao Irrigation	2,500.00	111.6								641,218
2	Kabulnan Irrigation & Area Development	1,998.54	25.0								25,000
3	Pampanga Delta Development	3,407.69	157.9								1,039,042
4	Lower Agusan Development	2,263.58	75,488								684,327
5	Casecnan Multipurpose Irrigation & Power - I	3,495.93	155,048	787,509							2,217,801
6	Tarlac Groundwater Irrigation System Reactivation	632.60	102,450								362,300
7	Water Resources Development Project	2,418.22	245,993								780,363
8	Southern Philippines Irrigation Sector	4,065.36	160,732	1,247,033							2,945,787
9	Bohol Irrigation Project II	2,384.00	80,000	500,000	713,770						2,314,000
10	San Roque Multipurpose	8,634.04		700,000	1,860,900	1,900,000	1,800,000	1,610,040			8,634,040
11	Balog-Balog Multipurpose	12,028.36	100,000	600,000	2,500,000	2,500,000	2,350,000	2,024,389			10,850,000
12	Apayao-Abulog Irrigation System Improvement	850.00	200,000								303,222
13	Addalam River Irrigation	993.99									754,008

	NAME OF PROJECT	ESTIMATED PROJECT COST (in million P)	FUNDING REQUIREMENT (P 000,000)								TOTAL 2001-2010
			2001	2004	2005	2006	2007	2008	2009	2010	
			175,000								
14	Itbayat Integrated Agric'l Development	132.62	17,000								41,907
15	Basey Irrigation	700.50		130,000	250,000	118,314					618,314
16	Bubunawan Irrigation	500.00	100,000								255,752
17	Aulo Irrigation	294.20	30,000								233,961
18	Small Reservoir Irrigation Project	7,985.10	78,000	300,000	1,000,000	1,371,912	1,402,589	1,300,000	910,700		6,752,501
	Sub-total, On-going Projects	55,284.76	1,814,197	4,264,542	6,324,670	5,890,226	5,552,589	4,934,429	910,700		39,453,543
B.	PIPELINE PROJECTS										
1	Angat Afterbay Regulatory Dam	590.20									40,000
2	Balingasag Irrigation	150.00									150,000
3	Rizal (Aliog) Irrigation	465.70		100,000	190,700	125,000					465,700
4	Malitubog-Libungan Transbasin Irrigation	1,351.20		200,000	300,000	300,000	282,600	218,600			1,351,200
5	Participatory Irrigation Development Project	9,826.90		300,000	1,215,640	885,700	867,610	1,744,300	1,143,740	689,650	6,896,640
6	Irrigation Management Improvement Project	4,130.00		1,250,000	1,200,000	1,200,000					4,130,000
7	Bicol River Basin Flood Control and Irrigation Dev.	3,876.00		300,000	388,000	536,000	720,000	904,000	878,000		3,876,000

	NAME OF PROJECT	ESTIMATED PROJECT COST (in million P)	FUNDING REQUIREMENT (P 000,000)								TOTAL 2001-2010
			2001	2004	2005	2006	2007	2008	2009	2010	
8	Irrigation Sector Development Program, Package II	5,000.00		400,000	500,000	900,000	1,200,000	1,100,000	900,000		5,000,000
9	Saug Reservoir	1,960.61		50,000	325,000	450,000	500,000	375,000	260,610		1,960,610
10	Kadingilan Irrigation	1,423.10		50,000	450,000	550,000	373,100				1,423,100
11	Tumauini Reservoir	2,349.00		50,000	375,000	500,000	600,000	450,000	374,000		2,349,000
12	Malitubog-Maridagao Irrigation Project II	2,803.37		50,000	184,000	310,000	456,000	545,000	694,000	564,370	2,803,370
13	North Lawis Irrigation	190.50			90,500	100,000					190,500
14	Quipot Irrigation Project, Phases I & II	750.00			100,000	150,000	250,000	250,000			750,000
15	Ilocos Norte Irrigation Project (Palsiguan) Phase II	14,994.00			145,194	209,194	569,318	1,289,318	1,960,000	2,270,000	6,443,024
16	Talakag Irrigation	339.66			75,000	139,661	125,000				339,661
17	Mibolo-Tipanoy Irrigation	70.00			70,000						70,000
18	Infanta Impounding Irrigation	250.00			100,000	150,000					250,000
19	Tineg River Irrigation	592.30				50,000	100,000	250,000	192,300		592,300
20	Mapanuepe Lake Irrigation***	160,095				70,000	90,095				160,095
21	Muleta Reservoir Irrigation	1,550,000				80,000	248,000	285,000	369,000	344,000	1,326,000

	NAME OF PROJECT	ESTIMATED PROJECT COST (in million P)	FUNDING REQUIREMENT (P 000,000)								TOTAL 2001-2010
			2001	2004	2005	2006	2007	2008	2009	2010	
22	Mabini Irrigation	6,164,000					206,000	520,000	880,000	1,200,000	2,806,000
23	Titay Valley Irrigation	1,100,000					100,000	200,000	300,000	500,000	1,100,000
24	Pagalungan RIS Rehabilitation Project	699,000						200,000	200,000	299,000	699,000
25	Ilocos Sur Transbasin	2,000,000						144,000	268,000	436,000	848,000
26	Maganoy Dam No. 3 Development	1,500,000						163,500	260,000	369,000	792,500
27	Adgaoan-Umayan Irrigation	1,853,306							136,500	258,000	394,500
28	Balintongan Reservoir	5,083,000							253,000	450,000	703,000
29	Asue Irrigation	4,061,000							134,000	586,000	720,000
30	Lake Mainit Integrated Area Dev.	2,456,250							161,000	306,000	467,000
31	Gumain Reservoir	7,590,000								134,000	134,000
32	Matuno Irrigation	461,160								310,000	310,000
33	Jalaur Alternative Scheme	6,000,000								226,000	226,000
34	Chico-Mallig Irrigation and Dam	4,680,000								468,000	468,000
35	Salug Multipurpose Irrigation	5,000,000								100,000	100,000

	NAME OF PROJECT	ESTIMATED PROJECT COST (in million P)	FUNDING REQUIREMENT (P 000,000)								TOTAL 2001-2010
			2001	2004	2005	2006	2007	2008	2009	2010	
36	Dibuluan Irrigation	191,000								100,000	100,000
37	Kulaman River Basin	170,000								80,000	80,000
	Sub-total, Pipeline Projects	101,831,432	-	2,750,000	5,709,034	6,705,555	6,687,723	8,638,718	9,364,150	9,690,020	50,515,200
C.	OTHER PROGRAMS										
1	San Roque Multipurpose Project (SRMP-MOA)	5,818,575	318,000	611,175	611,175	611,175	611,175	611,175	611,175	611,175	5,818,575
2	Casecnan Multipurpose Irrigation and Power Project-BOT (Water Delivery)	42,505,000		3,995,000	4,305,000	4,640,000	4,997,000	5,382,000	5,796,000	6,242,000	42,505,000
	Sub-total, Other Programs	48,323,575	318,000	4,606,175	4,916,175	5,251,175	5,608,175	5,993,175	6,407,175	6,853,175	48,323,575
D.	AGRARIAN REFORM										
1	CARP-Irrigation Component II	8,500,000	213,000	1,810,000							7,455,000
2	Agrarian Reform Infrastructure Support	2,865,000	593,000	241,000							2,619,000
3	Agrarian Reform Communities Development Project	1,189,000	377,000								664,000
4	Mindanao Settlement Area Development	949,000	57,000	347,000							949,000

SOURCE: National Irrigation Administration, 2004

APPENDIX C: Classification System for Local Government Units

LGU	Class	Definition
Provinces and Cities	First	Average annual income of thirty million pesos (P30.0 million) or more
	Second	Average annual income of twenty million pesos (P20.0 million) or more but less than thirty million pesos (P30.0 million).
	Third	Average annual income of fifteen million pesos (P15.0 million) or more but less than twenty million pesos (P20.0 million).
	Fourth	Average annual income of ten million pesos (P10.0 million) or more but less than fifteen million pesos (P15.0 million).
	Fifth	Average annual income of five million pesos (P5.0 million) or more but less than ten million pesos (P10.0 million).
	Sixth	Average annual income of less than five million pesos (P5.0 million) .
Municipalities	First	Average annual income of fifteen million pesos (P15.0 million) or more
	Second	Average annual income of ten million pesos (P10.0 million) or more but less than fifteen million pesos (P15.0 million).
	Third	Average annual income of five million pesos (P5.0 million) or more but less than ten million pesos (P10.0 million).
	Fourth	Average annual income of three million pesos (P3.0 million) or more but less than five million pesos (P5.0 million).
	Fifth	Average annual income of one million pesos (P1.0 million) or more but less than three million pesos (P3.0 million).
	Sixth	Average annual income of less than one million pesos (P1.0 million) .

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