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**Working Paper**

## Investing in Local Roads for Economic Growth

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Philippine Institute for Development Studies  
*Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas*

## Investing in Local Roads for Economic Growth

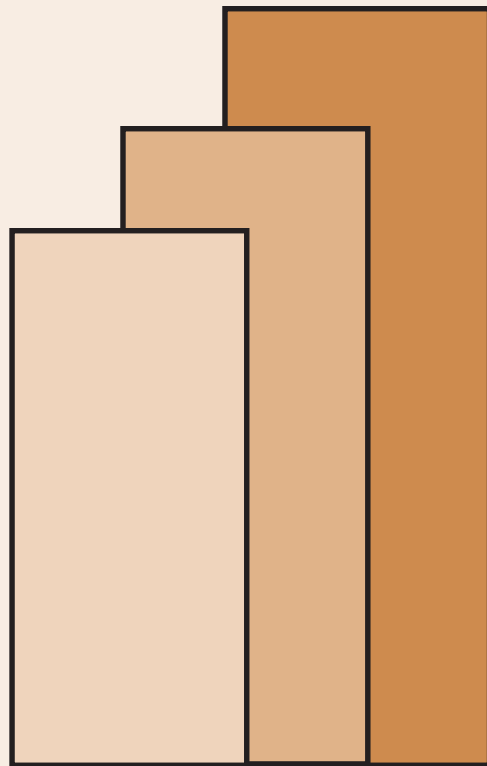
*Gilberto M. Llanto*

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**Abstract**

Local road investments work for growth and poverty reduction in local areas. The paper highlights the importance of investing in local roads and directs attention to the critical role of local government units (LGUs) in improving the local road network. Raising additional monies to fund local roads is only partly a solution. Much more will depend on the quality and strength of governance and adherence to good planning, budgeting, and procurement practices in the national government and local government units. This paper identifies what local government units can do to improve local road networks.

Key words: road network, transport infrastructure, logistics, fiscal capacity, local governments

# Investing in Local Roads for Economic Growth

Gilberto M. Llanto<sup>1</sup>

## Introduction

Recent literature has documented the critical role played by efficient transport and logistics in trade facilitation and growth.<sup>2</sup> The World Bank (2010) stresses that efficient transport and logistics performance is essential for countries to compete in the global marketplace as traders need to be able to move goods and services across borders on time and with low transaction costs. The ability of countries to participate in global and regional production and distribution networks depends a great deal on efficient transport and logistics infrastructure.

In the Philippines Kimura and Maeda (2005) regard unreliable and inadequate infrastructure to be a major impediment for economic growth. While neighboring countries have made substantial investments in transport infrastructure and logistics services to become significant players in global markets, the Philippines has lagged behind. Kimura and Maeda pointed out that poor road condition in the Philippines is one of the major concerns in order to effectively utilizing globalization forces for economic development<sup>3</sup>. For example, major transport and logistical bottlenecks have hampered the export of agricultural commodities from Mindanao,<sup>4</sup> namely:

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<sup>1</sup> Senior Research Fellow, Philippine Institute for Development Studies. The author thanks Lorraine Zafe, PIDS for her invaluable research assistance on data and figures reported in the paper. The usual disclaimer applies: the views expressed in the paper are solely the responsibility of the author.

<sup>2</sup> X. Clark, D. Dollar, and A. Micco, Port Efficiency, Maritime Transport Costs, and Bilateral Trade, NBER Working Paper 10353 (Cambridge: National Bureau of Economic Research, 2004).

<sup>3</sup> Kimura, Fukunari and Mitsuhiko Maeda (2005), "Transport Development in Japan and Korea: Drawing Lessons for the Philippines," November <http://www.bnm.gov.my/microsites/rcicc/papers/s5.kimura.pdf> (date accessed November 10, 2011)

<sup>4</sup> J. Arnold and T. Villareal, *Philippines Logistics Study* (World Bank, 2002).

- Limited market information available to farmers and traders, arising from poor telecommunications facilities;
- Limited transport services in rural areas, where locally manufactured 'jeepneys' and animal-drawn carts carry produce over bad rural roads;
- Inefficient shipping; and
- Onerous government regulations and public monopolies that increase the cost of interisland transport.

Exporting countries, which have been able to effectively address both border (e.g., tariffs) and behind border issues (e.g., transport and logistics), have been able to exploit new and bigger markets opened by globalization and trade liberalization. New opportunities in the global markets require an intensified focus on making transport and logistics much more efficient.

The Philippines has recently made a relatively significant improvement in transport and logistics performance as shown in **Table 1**. It is currently ranked 44th out of 155 countries in logistics performance, which is an improvement over its 65th rank in 2007. While this performance is certainly an achievement, it pales, however, in comparison with those of neighboring ASEAN countries such as Malaysia and Thailand. If the Philippines wants to exploit opportunities in global markets, it has to do better and continue to improve transport and logistics infrastructure.

**Table 1. Comparative logistics performance index, East Asia, 2007 and 2010**

Country	2010 LPI Rank	2010 LPI Score	2007 LPI Rank	2007 LPI Score
Singapore	2	4.09	1	4.19
Japan	7	3.97	6	4.02
China	27	3.49	30	3.32
Malaysia	29	3.44	27	3.48
Thailand	35	3.29	31	3.31
<b>Philippines</b>	<b>44</b>	<b>3.14</b>	<b>65</b>	<b>2.69</b>
Vietnam	53	2.96	53	2.89
Indonesia	75	2.76	43	3.01
	Germany:		Singapore:	
Memo Item	rank 1	4.11	rank 1	4.19

Source: World Bank (2010)

An important dimension of transport infrastructure is the network of roads that provide a physical link to various communities in urban and rural areas with outside markets. A good network of roads at the local level is indispensable in the timely movement of people and transport of goods with low transaction costs. Good local road infrastructure is correlated not only with local economic growth but also instrumental with poverty reduction as shown by several studies. In a study of road infrastructure in Europe and Central Asia, Shepherd and Wilson (2006) found that improved road network quality is robustly associated with higher intraregional trade flows. Their simulations using a gravity model suggest that an ambitious but feasible road upgrade could increase trade by 50% over baseline<sup>5</sup>. In a study of a rural fishing community in the Philippines characterized by poor transport conditions and poor accessibility to major markets, Olsson (2008) demonstrated that the improvement of road accessibility leads to considerable benefits to the community<sup>6</sup>.

This paper highlights the importance of investing in local roads and directs attention to the critical role of local government units (LGUs) in improving the local road network. The importance of investing in local roads cannot be underemphasized and the 1991 Local Government Code has given local government units that task of improving road service delivery. This paper identifies what local government units can do to improve local road networks.

### **The present situation of local roads**

Infrastructure is a driver of sustained growth. Recent studies find that infrastructure has a positive and significant effect on growth in regional incomes, and regions with better infrastructure have had higher growth rates.<sup>7</sup> An ADB study has

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<sup>5</sup> Shepherd, Ben and John Wilson (2004). "Road Infrastructure in Europe and Central Asia: Does Network Quality Affect Trade?" World Bank Policy Research Working Paper 4104, December

<sup>6</sup> Olsson, J., (2008) "Improved road accessibility and indirect development effects: evidence from rural Philippines," *Journal of Transport Geography*, doi:10.1016/j.jtrangeo.2008.09.001

<sup>7</sup> G. Llanto, *Infrastructure Development: Experience and Policy Options for the Future* (Makati City: Philippine Institute for Development Studies, 2004); L. Basilio and D. Gundaya, *The Impact of Collective Public Infrastructure on Regional Income Disparities*, unpublished undergraduate thesis (Quezon City: University of the Philippines, School of Economics, 1997).

identified the inadequacy of infrastructure as a binding constraint to Philippine growth.<sup>8</sup> Those studies found that expensive and unreliable electric supply and inefficient transport network are the two of most critical constraints economic growth.

Local road investments work for growth and poverty reduction in local areas. An empirical study finds that investing in road improvements and the construction of high-quality roads at the regional (local) level, particularly in provinces, municipalities, and barangays could be more beneficial to the region than investments in the national road network alone.<sup>9</sup> The integration of peripheral areas with the rapidly growing urban nodes such as San Fernando City (Pampanga), Cabanatuan City (Nueva Ecija), Metro Cebu, Metro Iloilo, Davao, and General Santos cities, among others, fundamentally depends on an efficient road network. The link provides rural economic agents with access to urban markets, technologies, and modern inputs.

Local roads are an important element of the transport network. **Table 2** shows roads divided into national and local roads. There are 29,000 kilometers of national roads and 172,000 kilometers of local roads based on latest data (2005) made available by the Department of Public Works and Highways. The bulk of Philippine roads consists of barangay roads of around 100,000 to 122, 000 kilometers of total local roads and these are mostly unpaved roads in poor or bad condition. Barangays especially those in the remote rural and upland areas do not simply have the resources to improve road surface and condition. Funding for barangay roads come practically from congressional pork or insertions made by legislators to the General Appropriations Act, taking advantage of the legislative basis for such insertions, Sections 17 (c) and (f) of the 1991 Local Government Code.

Section 17 (c) allows central government agencies to continue to implement devolved public works and infrastructure projects and other facilities, programs, and

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<sup>8</sup> Asian Development Bank (ADB), Philippines: Critical Development Constraints, Country Diagnostic Studies (Mandaluyong City: ADB, 2007); G. Llanto, Infrastructure, Chapter 6 in *Diagnosing the Philippine Economy: Toward Inclusive Growth*, edited by D. Canlas, M.E. Khan, and J. Zhuang (London: Anthem Press, 2009); G. Llanto, Infrastructure and Regional Growth, Chapter 10 in *The Dynamics of Regional Development: the Philippines in East Asia*, edited by A. Balisacan and H. Hill (Cheltenham, UK: Edward Elgar, 2007).

<sup>9</sup> Llanto (2007) *ibid*. The national government takes care of constructing national roads while local government units (provinces, cities, and municipalities) are in charge of local roads.

services provided these are "funded by the national government under the annual General Appropriations Act, other special laws, pertinent executive orders, and those wholly or partially funded from foreign sources." On the other hand, Section 17 (f), allows the national government or the next higher level of local government unit to "provide or augment the basic services and facilities assigned to a lower level of local government unit when such services or facilities are not made available or, if made available, are inadequate to meet the requirements of its inhabitants."<sup>10</sup>

In terms of road density the National Capital Region (NCR) has 7.3 kilometers of roads per square kilometer of land area whereas Northern Mindanao, the region with the second highest road density, has only 1.2 kilometers. Caraga has the lowest road density per square kilometer. Higher income local government units are better able to provide the road network needed in the local areas. Poor local government units cannot simply provide the necessary road network of sufficient quality and capacity in their respective areas. It is a question of both lack of adequate resources to fund road construction, rehabilitation and maintenance and weak technical and administrative capacity for road planning, programming and budgeting.

**Table 2** shows the road classification system followed in the country. It shows the assignment of road service delivery before and after the passage into law of the 1991 Local Government Code (LGC).

**Table 2: Classification of Philippine Roads**

Road Class	Road Definition	Road Responsibility	
		Before the 1991 LGC	Under 1991 LGC
National roads	Main trunk line system that connects major urban areas and provincial capitals and/or leads to national ports and airports	National Government	National Government
Provincial roads	Roads that interconnect municipalities and link them to a public wharf or railway station; and any other road designated by	Provincial Government	Provincial Government

<sup>10</sup> Manasan, Rosario (2005), "Local Public Finance in the Philippines: Lessons in Autonomy and Accountability," *Philippine Journal of Development* Number 60, Second Semester 2005, Volume XXXII, No. 2, pp. 31-102.



	the <i>Sangguniang Panlalawigan</i>		
City roads	Roads within the urban areas of cities designated by the <i>Sangguniang Panlungsod</i>	City Government	City Government
Municipal roads	Roads in the center of municipalities or <i>poblacion</i> (where the municipal hall, plaza, church, etc. are usually located) designated by the <i>Sangguniang Bayan</i>	Municipal Government	Municipal Government
Barangay roads	Roads outside the urban, industrial, commercial or residential areas of cities and municipalities, and link farms to markets	National Government (primarily DPWH)	Barangays for their maintenance  Unclear responsibility for their construction and improvement
National Aid roads	Local roads with full or partial funding from the national government	National Government and/or Local Government	None (abolished in 1992)

Source: DPWH

To have an efficient road network, there is a need to invest in good quality local roads. In terms of road quality, 69 percent of national roads are paved in contrast to 14 percent of paved local roads. Almost all (98 percent) roads in the NCR are paved while only 35 percent of roads in Central Luzon, the next best-off region based on road quality are paved. The Autonomous Region of Muslim Mindanao (ARMM) has the lowest paved road ratio<sup>11</sup>. The situation on road quality is shown in **Figure 1**, and **Tables 3** and **4**.

Among local governments, available data indicate that cities consistently have better quality roads than provinces. This may be due to the fact that cities have much more revenue sources (IRA and local own source taxes) than provinces and are thus, better able to repair, rehabilitate and maintain the quality of their roads. **Table 5** classifies local roads according to surface type (paved vs. unpaved) and condition (good, fair, poor, bad). Local city roads are mostly paved and in fair condition while provinces

<sup>11</sup> The table provided by DILG shows that in 2010, around 98 percent of NCR roads are on “unknown” quality, that is, it is not known whether these are paved or not paved. I think this is a clerical error. What the table wants to report perhaps is that around 98 percent of NCR roads are paved roads. Please see my comment below on the need for a good road inventory database.

have more unpaved roads which are reported to be in fair condition. It seems contradictory to say that unpaved roads are in fair condition because by international standards, unpaved roads are of poor quality and easily deteriorate, which increases the transaction costs of economic agents.

Based on limited available data the general conclusion one can make is that local roads are generally of poor quality and condition. This is indicative of the inability of local government units to maintain local roads, which hampers local growth and development. A severe underinvestment in good quality roads has certainly contributed to the high cost of doing business in the country.

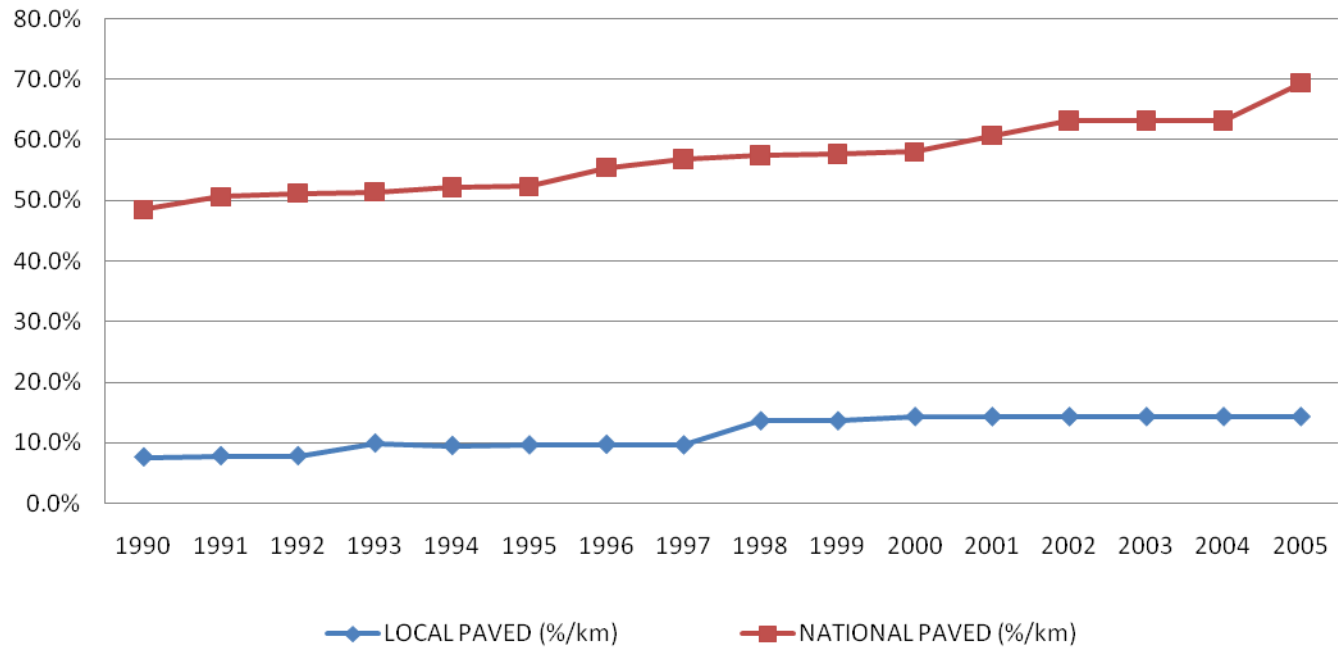
**Table 3. Local and National Roads of the Philippines, 1990-2005**

YEAR	LOCAL ROADS				NATIONAL ROADS			
	LENGTH (km)	PAVED (%/km)	UNPAVED (%/km)	TOTAL	LENGTH (km)	PAVED (%/km)	UNPAVED (%/km)	TOTAL
2005	171,889	14.3%	85.7%	100%	28,952	69.4%	30.6%	100%
2004	171,771	14.3%	85.7%	100%	30,030	63.1%	36.9%	100%
2003	171,771	14.3%	85.7%	100%	30,030	63.1%	36.9%	100%
2002	171,771	14.3%	85.7%	100%	30,030	63.1%	36.9%	100%
2001	171,889	14.3%	85.7%	100%	29,878	60.7%	39.3%	100%
2000	171,981	14.3%	85.7%	100%	29,734	58.0%	42.0%	100%
1999	170,509	13.6%	86.4%	100%	29,247	57.6%	42.4%	100%
1998	171,788	13.6%	86.4%	100%	27,895	57.5%	42.5%	100%
1997	133,663	9.6%	90.4%	100%	27,650	56.8%	43.2%	100%
1996	132,746	9.7%	90.3%	100%	27,369	55.4%	44.6%	100%
1995	134,250	9.6%	90.4%	100%	26,720	52.3%	47.7%	100%
1994	132,745	9.5%	90.5%	100%	26,154	52.2%	47.8%	100%
1993	130,378	9.9%	90.1%	100%	26,594	51.4%	48.6%	100%
1992	128,647	7.8%	92.2%	100%	26,554	51.2%	48.8%	100%
1991	128,647	7.8%	92.2%	100%	26,422	50.6%	49.4%	100%
1990	131,743	7.6%	92.4%	100%	26,272	48.5%	51.5%	100%

Source: Department of Public Works and Highways

\*Local roads include provincial, city, municipal and barangay roads

Figure 1 Local Paved Roads vs. National Paved Roads



**Table 4. Provincial and City Roads by Region, 2006**

	CITY ROADS					PROVINCIAL ROADS					GRDP (million)	POVERTY INCIDENCE
	LENGTH (km)	PAVED (%/km)	UNPAVED (%/km)	UNKNOWN (%/km)	TOTAL	LENGTH (km)	PAVED (%/km)	UNPAVED (%/km)	UNKNOWN (%/km)	TOTAL		
<b>PHILIPPINES</b>	<b>11,306.9</b>	<b>29.9%</b>	<b>24.9%</b>	<b>45.2%</b>	<b>100.0%</b>	<b>30,491.7</b>	<b>24.3%</b>	<b>61.0%</b>	<b>14.7%</b>	<b>100.0%</b>	<b>5,980,007</b>	<b>26.4</b>
NCR	3,495.8	9.1%	0.2%	90.8%	100.0%					0.0%	2,244,863	5.4
CAR	142.7	100.0%	0.0%	0.0%	100.0%	1,631.8	19.3%	79.2%	1.6%	100.0%	128,695	23.0
ARMM	28.1	0.0%	0.0%	100.0%	100.0%	1,497.2	24.3%	61.0%	14.8%	100.0%	52,901	42.8
REGION I	443.0	27.3%	23.2%	49.5%	100.0%	1,562.0	65.0%	35.0%	0.0%	100.0%	171,988	26.6
REGION II	207.2	29.5%	4.1%	66.4%	100.0%	1,722.5	20.6%	76.1%	3.3%	100.0%	106,101	20.0
REGION III	803.8	54.7%	19.4%	25.9%	100.0%	2,647.6	58.2%	33.5%	8.3%	100.0%	464,295	15.2
REGION IV-A	282.7	38.2%	0.8%	60.9%	100.0%	1,589.6	67.2%	32.6%	0.2%	100.0%	693,876	12.3
REGION IV-B	254.7	48.8%	51.2%	0.0%	100.0%	2,585.5	18.0%	73.2%	8.8%	100.0%	123,584	42.2
REGION V	225.5	47.5%	14.5%	38.0%	100.0%	1,734.5	45.9%	50.8%	3.3%	100.0%	148,019	45.2
REGION VI	1,839.8	47.4%	51.9%	0.7%	100.0%	2,044.0	15.1%	65.5%	19.4%	100.0%	396,370	28.6
REGION VII	551.8	66.3%	26.8%	6.9%	100.0%	2,822.1	24.7%	73.6%	1.7%	100.0%	416,917	38.8
REGION VIII	490.1	34.7%	62.2%	3.1%	100.0%	1,566.8	17.1%	46.0%	36.9%	100.0%	137,380	39.0
REGION IX	180.3	28.5%	54.0%	17.5%	100.0%	1,516.3	7.2%	83.9%	9.0%	100.0%	134,892	39.8
REGION X	834.5	15.3%	9.0%	75.7%	100.0%	1,742.3	8.6%	91.5%	0.0%	100.1%	277,011	39.7
REGION XI	706.6	18.1%	57.3%	24.6%	100.0%	2,695.9	3.9%	67.3%	28.9%	100.0%	263,710	31.7
REGION XII	671.1	25.2%	52.2%	22.6%	100.0%	1,967.8	0.9%	42.4%	56.8%	100.0%	195,534	33.1
REGION XIII	149.3	54.0%	26.4%	19.6%	100.0%	1,165.9	10.6%	88.8%	0.5%	100.0%	76,773	44.0

Source: Department of Interior and Local Government

**Table 5. Provincial and City Roads by Surface Type and Condition: 2006-2010 (%)**

	2010		2009		2008		2007		2006		2005	
	CITY	PROVINCIAL	CITY	PROVINCIAL	CITY	PROVINCIAL	CITY	PROVINCIAL	CITY	PROVINCIAL	CITY	PROVINCIAL
<b>LENGTH (kms.)</b>	13,325.2	30,962.9	14,810.4	30,924.8	14,778.4	31,198.1	14,778.4	31,198.1	11,306.9	30,491.7	10,093.7	30,483.6
<b>ROAD DENSITY</b>	0.487	0.108	0.518	0.107	0.599	0.108	0.683	0.11		0.11		0.11
<b>SURFACE TYPE</b>												
<b>PAVED</b>	62.0%	28.8%	61.7%	30.2%	60.7%	28.4%	60.4%	28.4%	29.9%	24.3%	18.0%	20.9%
<b>UNPAVED</b>	35.0%	70.9%	35.8%	69.4%	36.8%	70.1%	37.2%	70.1%	24.9%	60.9%	15.0%	56.4%
<b>UNKNOWN</b>	3.0%	0.4%	2.5%	0.4%	2.5%	1.5%	2.5%	1.5%	45.2%	14.7%	67.0%	22.6%
<b>TOTAL</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>SURFACE CONDITION</b>												
<b>GOOD</b>	23.6%	16.5%	22.0%	16.4%	20.9%	18.4%	20.9%	18.4%	11.8%	13.2%	9.5%	12.0%
<b>FAIR</b>	30.9%	49.3%	32.6%	47.3%	32.4%	46.1%	32.4%	46.1%	16.5%	41.6%	9.2%	40.9%
<b>POOR</b>	10.1%	14.6%	10.0%	15.3%	10.2%	16.3%	10.2%	16.3%	7.3%	13.5%	3.9%	11.4%
<b>BAD</b>	6.6%	5.2%	6.1%	5.7%	6.4%	5.0%	6.4%	5.0%	3.9%	4.3%	2.5%	5.5%
<b>NO ASSESSMENT</b>	28.8%	14.3%	29.3%	15.3%	30.2%	14.3%	30.2%	14.3%	60.6%	27.4%	74.8%	30.2%
<b>TOTAL</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Department of Interior and Local Government

## An acute underinvestment in good quality local roads

There has been an acute underinvestment in good quality local roads. Compared with investments in other devolved activities and sectors, local government investments in infrastructure have remained insignificant. Local governments allocate the biggest portion of their budgets to general public services. General public services are basically for general administration needed for the daily routine of running a local government. It can be safely assumed that most of local expenditure goes to pay for the wages and salaries of local government officials and personnel. Expenditure for economic services follows as the second biggest item of expense. There is a need to review local public expenditure management for more efficient allocation of resources. It seems that there is a relatively low spending for investment in human capital (education, health and nutrition) and infrastructure, including local roads, relative to other expenditure items<sup>12</sup>. **Table 6** disaggregates total expenditure of local government units based on the latest available data. A finer breakdown of the different expenditure items reported in the table is not available although one may probably be able to further disaggregate those items if one has access to data with the Department of Budget and Management.

**Table 6. Distribution of Total Expenditure, All LGUs, 2001-2009**

	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>EXPENDITURES</b>	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
General Public Services	40.51	41.34	40.41	40.02	39.63	40.36	41.74	44.14	53.91
Education, Culture & Sports/ Manpower Development	7.09	6.53	6.85	6.61	6.95	6.86	6.53	5.94	6.11
Health, Nutrition & Population Control	11.50	11.72	10.85	10.97	10.18	9.80	9.78	9.76	11.35
Labor and Employment	0.16	0.15	0.12	0.06	0.07	0.07	0.07	0.06	0.07
Housing and Community Development	4.38	4.42	2.40	2.05	2.18	2.05	2.01	2.13	3.28
Social Security /Social Services & Welfare	3.02	2.83	2.57	2.39	2.39	2.35	2.45	2.41	5.16
Economic Services	18.55	16.74	15.76	15.76	15.75	15.04	15.22	15.09	18.55
Debt Service	2.41	2.39	2.87	2.73	3.27	3.21	3.23	3.29	1.59

<sup>12</sup> Llanto (2011)

Both national government and LGUs cannot ignore this fact of underinvestment in maintenance and construction of good quality local roads. Poor road quality, according to the World Bank, results in intercity freight rates that are 50 percent higher than in Thailand or Vietnam,<sup>13</sup> which is due to the low proportion of paved roads, the low proportion of roads in good or fair condition, and how they function as a network.<sup>14</sup>

### **What explains the underinvestment in local roads?**

Several factors may help understand why there has been an underinvestment in quality local roads.

- *Weak local capacity for planning and budgeting.* Under the Local Government Code, local government units have full responsibility for road service delivery. This means developing and maintaining local roads, which are not easy tasks in view of technical and managerial limitations in many local government units. Planning, programming, financing and implementing local road projects, which compete with other local development initiatives for technical and financial resources, are not easy tasks. However, it is generally noted that many local government units do not have the capacity to plan and implement a local roads construction, rehabilitation and maintenance program. Such a program requires technical and managerial capacity for developing a local road network plan, local roads design standards, local roads maintenance schedule and cost standards, and mechanisms for allocating resources and prioritizing road maintenance projects, etc. This may not be a problem with highly urbanized cities or high-income class local government units but it will be a

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<sup>13</sup> World Bank, Philippines Transport for Growth: an Institutional Assessment of Transport Infrastructure, Report No. 47281-PH (2009).

<sup>14</sup> See World Bank (2009), *ibid.*, which states that the key questions in transport infrastructure are not about the number of facilities but their effective capacity, the quality of services they can provide, their location, and how they work as a network (p.11).



significant issue for many provinces and municipalities belonging to the lower income category.

- *Lack of a good local road inventory.* Sound planning depends on a good database<sup>15</sup>. There is need for a first-rate, good quality road data base but there is no updated and accurate database on road surface and condition, road function, traffic volume, reports of road accidents, geometric and structural standards, and other related information, which weakens planning of local road projects. ADB (2003) indicates that geometric standards for roads will vary depending on the nature of the terrain through which the road is constructed and also on the types of materials used in the construction of road embankments and/or cuttings. The standards currently used for roads in the Philippines are those given under the DPWH Design Guidelines Criteria and Standards for Public Works and Highways<sup>16</sup>. Incorporating information such as this and other information in a comprehensive road inventory database is a massive task for many local governments that lack technical and financial resources.

The present data base of DILG has information on road surface and condition only for cities and provinces, which constitute only roughly one fourth of total local roads. In 2006, DILG reported that around 45 percent of city roads and 15 percent of provincial roads are of “unknown” quality. There seems to be better information in 2010 when it was reported that only 3 percent of city roads and 0.4 percent of provincial roads were of unknown quality. Doing surveys of rural road conditions need not necessarily be expensive for local government units if there is good coordination with DPWH and DILG. The Department of Public Works and Highway (DPWH) and the Department of the Interior and Local Government (DILG) must work with local government units in building a good data base of all roads in the country, national and local for efficient planning, programming and budgeting purposes. Because of limited resources, coordination and cooperation among these agencies and local government units will be essential.

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<sup>15</sup> Asian Development Bank (2003). “Rural Roads Development Policy Framework Philippines-T.A. 3805,” Final Report, November.

<sup>16</sup> ADB (2003), page 8.

- *Weak local fiscal capacity.* Local government units can draw from local own-source revenues, intergovernmental fiscal transfer, basically the Internal Revenue Allotment (IRA), and the Road Fund to fund local roads. Cities are better off than provinces and municipalities because they effectively have a bigger share of the IRA, and more importantly, they can levy more productive taxes and have more buoyant tax bases than provinces and cities do have. The majority of local government units that is, provinces and municipalities have narrower tax bases and thus, do not raise proportionately as much in own-source revenues. Cities derived about 52 percent of their revenues from own sources in 2009, compared with only about 20 percent for municipalities and provinces. The latter have remained dependent on fiscal transfers, principally the internal revenue allotment (IRA), for funding local development activities<sup>17</sup>. Weak local fiscal capacity has hamstrung the provision of good quality roads. **Table 7** disaggregates total annual revenue income by level of local government.

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<sup>17</sup> Llanto, Gilberto M. (2011). "Fiscal Decentralization in the Philippines: Status and Emerging Policy Issues" UN-HABITAT, Nairobi, Kenya, October

**Table 7. Distribution of Total Income, by Province, Cities and Municipalities, 2001-2009**

	2001			2002			2003			2004			2005		
	PROV	CITIES	MUNIS	PROV	CITIES	MUNIS	PROV	CITIES	MUNIS	PROV	CITIES	MUNIS	PROV	CITIES	MUNIS
<b>INCOME</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>LOCAL SOURCES</b>	<b>16.2</b>	<b>52.2</b>	<b>20.6</b>	<b>13.8</b>	<b>52.2</b>	<b>19.6</b>	<b>13.4</b>	<b>52.6</b>	<b>19.2</b>	<b>15.3</b>	<b>53.8</b>	<b>20.3</b>	<b>16.6</b>	<b>55.9</b>	<b>20.8</b>
<b>TAX REVENUE</b>	<b>10.0</b>	<b>43.0</b>	<b>13.1</b>	<b>8.9</b>	<b>43.7</b>	<b>12.8</b>	<b>8.5</b>	<b>43.2</b>	<b>12.2</b>	<b>8.9</b>	<b>44.0</b>	<b>12.8</b>	<b>10.0</b>	<b>45.2</b>	<b>12.7</b>
Real Property Tax	7.6	21.0	6.4	7.3	20.6	6.4	7.0	21.1	6.4	7.3	20.2	6.4	8.1	21.8	6.3
Business Tax	1.4	19.5	5.8	0.8	20.7	5.6	0.8	19.7	5.1	1.0	21.6	5.6	1.0	21.0	5.8
Other Taxes	1.0	2.6	1.0	0.7	2.4	0.8	0.7	2.3	0.7	0.6	2.3	0.8	0.8	2.5	0.6
<b>NON TAX REVENUE</b>	<b>6.1</b>	<b>9.2</b>	<b>7.5</b>	<b>5.0</b>	<b>8.5</b>	<b>6.8</b>	<b>4.9</b>	<b>9.5</b>	<b>7.0</b>	<b>6.4</b>	<b>9.8</b>	<b>7.5</b>	<b>6.6</b>	<b>10.6</b>	<b>8.0</b>
Regulatory Fees	0.3	3.1	1.9	0.1	2.9	1.7	0.4	3.0	1.8	0.5	2.8	1.8	0.4	2.8	1.9
Service/ User Charges	1.4	1.4	0.7	0.4	1.2	0.7	0.4	1.4	0.8	0.8	1.5	0.9	1.2	1.9	1.0
Receipts from Economic Enterprise	1.2	2.8	3.4	2.2	2.9	3.3	2.6	3.8	3.5	2.6	3.9	3.9	3.3	4.3	4.1
Toll Fees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1
Other Receipts	3.2	2.0	1.5	2.2	1.5	1.1	1.5	1.3	1.0	2.3	1.6	0.9	1.6	1.7	1.0
<b>SHARES FROM</b>	<b>82.3</b>	<b>46.7</b>	<b>78.3</b>	<b>85.5</b>	<b>47.2</b>	<b>79.6</b>	<b>84.5</b>	<b>45.7</b>	<b>79.9</b>	<b>83.0</b>	<b>44.8</b>	<b>78.8</b>	<b>81.8</b>	<b>42.3</b>	<b>78.3</b>

**NATIONAL TAX**

Internal Revenue Allotment	81.1	46.4	77.1	84.8	47.2	79.3	82.3	44.8	78.2	81.9	44.0	76.8	80.1	41.7	75.2
Other Shares	1.2	0.3	1.3	0.7	0.1	0.4	2.2	0.9	1.7	1.1	0.8	2.1	1.7	0.6	3.0
<b>EXTRAORDINARY RECEIPTS/AIDS</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.4</b>	<b>1.7</b>	<b>0.7</b>	<b>0.9</b>	<b>0.3</b>	<b>0.7</b>	<b>0.5</b>	<b>0.7</b>	<b>0.8</b>
<b>INTERLOCAL TRANSFERS</b>	<b>0.7</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.2</b>	<b>1.7</b>	<b>0.0</b>	<b>0.2</b>	<b>0.8</b>	<b>1.2</b>	<b>0.2</b>	<b>1.1</b>	<b>1.1</b>	<b>0.2</b>

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Source: BLGF

**(Cont..) Table 7. Distribution of Total Income, by Province, Cities and Municipalities, 2001-2009**

	2006			2007			2008			2009		
	PROV	CITIES	MUNIS	PROV	CITIES	MUNIS	PROV	CITIES	MUNIS	PROV	CITIES	MUNIS
<b>INCOME</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>LOCAL SOURCES</b>	<b>15.3</b>	<b>56.6</b>	<b>19.9</b>	<b>16.4</b>	<b>56.0</b>	<b>19.5</b>	<b>15.4</b>	<b>55.4</b>	<b>18.4</b>	<b>14.9</b>	<b>51.8</b>	<b>17.9</b>
<b>TAX REVENUE</b>	<b>8.5</b>	<b>44.5</b>	<b>12.1</b>	<b>9.0</b>	<b>43.5</b>	<b>11.6</b>	<b>8.7</b>	<b>41.7</b>	<b>10.9</b>	<b>7.7</b>	<b>39.8</b>	<b>10.1</b>
Real Property Tax	6.8	20.8	5.7	7.0	19.8	5.3	6.4	18.5	5.1	6.0	17.0	4.8
Business Tax	1.1	21.3	5.7	1.3	21.3	5.7	1.1	20.6	5.2	0.9	20.7	4.7
Other Taxes	0.7	2.5	0.7	0.7	2.5	0.6	1.2	2.5	0.6	0.7	2.1	0.6
<b>NON TAX REVENUE</b>	<b>6.8</b>	<b>12.0</b>	<b>7.9</b>	<b>7.4</b>	<b>12.5</b>	<b>7.8</b>	<b>6.7</b>	<b>13.7</b>	<b>7.6</b>	<b>7.2</b>	<b>12.0</b>	<b>7.8</b>
Regulatory Fees	0.3	3.1	1.9	0.4	3.3	1.9	0.3	3.1	1.8	0.3	3.0	1.9
Service/ User Charges	1.4	2.1	0.9	1.2	2.1	1.0	1.5	2.1	0.9	2.1	2.0	1.2
Receipts from Economic Enterprise	3.2	4.3	3.8	4.1	4.7	3.9	3.3	4.2	3.7	3.3	4.6	3.7
Toll Fees	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Other Receipts	1.8	2.4	1.2	1.6	2.4	1.0	1.5	4.2	1.0	1.5	2.4	1.0

<b>SHARES FROM NATIONAL TAX</b>	<b>82.8</b>	<b>42.1</b>	<b>78.8</b>	<b>82.3</b>	<b>43.2</b>	<b>79.4</b>	<b>81.8</b>	<b>43.8</b>	<b>80.4</b>	<b>80.0</b>	<b>45.1</b>	<b>80.3</b>
Internal Revenue Allotment	81.5	41.4	75.9	81.5	42.5	77.1	78.6	43.2	78.4	79.3	44.5	78.5
Other Shares	1.3	0.7	2.9	0.7	0.7	2.3	3.3	0.7	2.0	0.7	0.6	1.9
<b>EXTRAORDINARY RECEIPTS/AIDS</b>	<b>1.3</b>	<b>0.4</b>	<b>1.0</b>	<b>0.8</b>	<b>0.6</b>	<b>1.0</b>	<b>1.3</b>	<b>0.7</b>	<b>1.0</b>	<b>2.7</b>	<b>0.3</b>	<b>1.4</b>
<b>INTERLOCAL TRANSFERS</b>	<b>0.5</b>	<b>1.0</b>	<b>0.2</b>	<b>0.6</b>	<b>0.2</b>	<b>0.1</b>	<b>1.5</b>	<b>0.1</b>	<b>0.2</b>	<b>2.5</b>	<b>2.8</b>	<b>0.4</b>

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Source: BLGF

A related issue is the use of the LGU share, called the Special Local Road Fund in the Road Fund generated under the Motor Vehicles User's Charge Act of 2000 (Republic Act 8794). This law was enacted in order to ensure funding for the adequate maintenance of national and local roads. The Special Local Road Fund is a component of the Road Fund, whose major part is the Special Road Support Fund to be used for the maintenance of national roads. The Special Local Road Fund is also to be used for local road maintenance. In 2009, the collection of Motor Vehicles User's Charge including penalties totaled Pesos 9.03 billion. In 2010, the collection and penalties amounted to Pesos 9.58 billion. Total collection from 2001 to 2010 has amounted to Pesos 70.39 billion<sup>18</sup>.

The Special Local Road Fund is "to be apportioned to provincial and city governments in accordance with the vehicle population and size of the road network under their respective jurisdictions, and shall be used exclusively for maintenance of local roads, traffic management, and road safety devices" (Republic Act 8794). Based on the audit done by the Commission on Audit in 2009 and 2010, there seems to be a serious problem with the management, release and utilization of the Road Fund (**Box 1**). Policy makers have to conduct a serious financial and management audit of the Road Fund in order to ensure that funds are properly used for the intended purpose of ensuring adequate maintenance of national and local roads. It seems that weak governance has resulted in the misallocation of MVUC funds, among others.

**Box 1 Some of the critical findings of COA audit of the Road Fund, 2009, 2010**

1. Increased risk of misallocation of MVUC funds and maintenance of non-priority roads because SAROs totaling Pesos 1.12 billion were issued without a request from the Road Board Secretariat, and without the specific names of projects to be implemented; and were released to legislative districts instead of the implementing offices of DPWH (2010);
2. Funds totaling Pesos 110 million were released for the implementation of

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<sup>18</sup> Commission on Audit, 2010

projects not approved by the Road Board nor evaluated by the DPWH-RPO (2010);

3. The distribution/allocation of MVUC funds totaling Pesos 3,84 billion for the implementation of projects approved by the Road Board was not in accordance with the Road Board Operating Procedures Manual (RBOPM) and the IRR of RA 8794 (2010)
4. The distribution/allocation and release of the Special Road Support Fund totaling Pesos 5.49 billion was not in accordance with the RBOPM; the amount of Pesos 28.29 million allocated and released to the provinces of Quezon and Rizal under the SLRF was based on a request of a government official, and not on the vehicle population and size of the road network as provided under Section 7 of RA 8794 (2009);
5. Of the 39 prior year's (2008) audit recommendations for nineteen observations, six were fully implemented, 21 were partially implemented, and 12 were not implemented (2009);
6. Expenditures totaling Pesos 84.29 million were irregular and contrary to Section 7 of RA 8794 . . . and expenditures totaling Pesos 40.60 million were not related to road maintenance and improvement of road drainage (2009);
7. MVUC funds totaling Pesos 360 million were released for 41 preventive maintenance projects, which were not approved by the Road Board nor evaluated by the DPWH-RPO contrary to Section 9 of RA 8794 (2009).

Source: Commission on Audit, 2009 and 2010.

### **Concluding remarks**

Investing in quality local road networks requires not only monies but also importantly strong political will at the national and local levels. Raising additional monies to fund local roads is only partly a solution. Much more will depend on the quality and strength of governance and adherence to good planning, budgeting, and procurement practices in the national government and local government units. There are constraints to overcome to have good quality roads but they can be hurdled. In this light, the following recommendations are submitted:



- *Raise more local revenues.* Local governments should therefore launch a vigorous revenue mobilization campaign, which may involve plugging tax leakages, explaining to the public the cost of local development, e.g., local roads, and raising local taxes. In particular, the collection efficiency of the real property tax should be improved starting from a review and adjustment of assessment levels. Real property taxation is an underutilized source of local revenue in the country in contrast to its being a mainstay of local finances in more developed countries.

Apart from improving the tax administration machinery, e.g. improve local property tax collection, there is a need to revisit the taxing powers given to local government units under the Local Government Code and review the formula for intergovernmental fiscal transfers.

- *Use local revenues to produce local public goods that serve the people, not a few vested groups.* People will be convinced to support government efforts to raise revenues once they experience an improvement in public services, e.g., police protection, good traffic management, and quality local roads that do not function as parking spaces for errant jeepneys. However, weak governance and corruption erode the credibility of local governments, which may face strong resistance to attempts to increase the level of local taxation. A good example of a serious neglect committed by a local government is its failure to rid a recently widened street in Quezon City of illegal parking by jeepneys and tricycles. Local citizens did not pay for said road's improvement only to have it used by some groups exclusively for their parking needs. The irony is that the traffic violation is done in full view of supposedly city traffic "enforcers." It has also been noted that the proliferation of informal settlers who illegally occupy both private and government lands cannot happen without the implicit tolerance by corrupt local government officials.

- *Improve procurement for local roads.* National government and local governments should coordinate in providing local governments with the capacity for project identification and development, and improving road construction through competitive procurement practices.

- *Ensure that local roads form part of an efficient road network.* Key to having an efficient road network is the planning and coordination of the maintenance and

improvement of road networks among concerned government agencies. However, nothing will come out from the planning and coordination if, as already mentioned, local governments tolerate the conversion of roads into parking spaces, or when portions of the road are used as location for micro-businesses (e.g., vulcanizing shops, small restaurants ) and amusement (e.g., basketball courts right in the middle of several streets in Metro Manila). Roads should serve the purpose for which they were built—to ensure on-time and low-transaction costs movement of people, cargo, and general commerce.

- *Conduct an audit of past utilization of the Road Funds for more effective and efficient use.* Introduced in 2001, the Motor Vehicle User's Charge (MVUC) was to be used for road maintenance, safety, and vehicle pollution control. In the last four years, the MVUC special fund for national road maintenance has amounted to around Pesos 4 to Pesos 6 billion a year. Going by the high frequency of road accidents in the country, very poor road maintenance, and the air pollution contributed by thousands of dilapidated smoke-belching jeepneys and buses that ply the main thoroughfares of Metro Manila, conducting an *honest and intensive audit* of the Road Fund is therefore an important first step toward having good quality roads and transport in the country.<sup>19</sup>

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<sup>19</sup> By law, all public and private vehicles have to pass an emissions test conducted by the Land Transportation Office prior to registration. However, air pollution in Metro Manila, especially EDSA, Taft Avenue, and España Street in Manila is among the worst in the region courtesy of thousands of smoke-belching jeepneys and buses, which should not have been allowed on the streets.

## References

Arnold, J. and T. Villareal (2002) *Philippines Logistics Study*, Washington D.C., The World Bank

Asian Development Bank (2007), *Philippines: Critical Development Constraints*, Country Diagnostic Studies, Mandaluyong City: Asian Development Bank

Asian Development Bank (2003). "Rural Roads Development Policy Framework Philippines- T.A. 3805," Final Report, November.

Basilio, L. and D. Gundaya (1997) "The Impact of Collective Public Infrastructure on Regional Income Disparities", unpublished undergraduate thesis, Quezon City: University of the Philippines, School of Economics

Clark, X., D. Dollar, and A. Micco (2004) "Port Efficiency, Maritime Transport Costs, and Bilateral Trade," NBER Working Paper 10353, Cambridge: National Bureau of Economic Research

Kimura, Fukunari and Mitsuhiro Maeda (2005), "Transport Development in Japan and Korea: Drawing Lessons for the Philippines," November <http://www.bnm.gov.my/microsites/rcicc/papers/s5.kimura.pdf> (date accessed November 10, 2011)

Llanto, Gilberto M. (2011). "Fiscal Decentralization in the Philippines: Status and Emerging Policy Issues" UN-HABITAT, Nairobi, Kenya, October

Llanto, Gilberto M. (2009) "Infrastructure", Chapter 6 in *Diagnosing the Philippine Economy: Toward Inclusive Growth*, edited by D. Canlas, M.E. Khan, and J. Zhuang, London: Anthem Press

Llanto, Gilberto M. (2007), "Infrastructure and Regional Growth", Chapter 10 in *The Dynamics of Regional Development: the Philippines in East Asia*, edited by A. Balisacan and H. Hill, Cheltenham, UK: Edward Elgar

Llanto, Gilberto M. (2007) *Infrastructure Development: Experience and Policy Options for the Future*, Makati City: Philippine Institute for Development Studies

Manasan, Rosario (2005), "Local Public Finance in the Philippines: Lessons in Autonomy and Accountability," *Philippine Journal of Development* Number 60, Second Semester 2005, Volume XXXII, No. 2, pp. 31-102.

Olsson, J., (2008) "Improved Road Accessibility and Indirect Development Effects: Evidence from Rural Philippines," *Journal of Transport Geography*, doi:10.1016/j.jtrangeo.2008.09.001

Shepherd, Ben and John Wilson (2004). "Road Infrastructure in Europe and Central Asia: Does Network Quality Affect Trade?" World Bank Policy Research Working Paper 4104, December

World Bank (2009) *Philippines Transport for Growth: an Institutional Assessment of Transport Infrastructure*, Report No. 47281-PH, Washington D.C.: The World Bank