ENABLING URBAN POOR LIVELIHOODS POLICY MAKING: UNDERSTANDING THE ROLE OF ENERGY SERVICES

Country Study Report
PHILIPPINES

APPROTECH ASIA

August 2005

EXECUTIVE SUMMARY

It has been predicted by the UNHCR in 1999 that 61% of the world's population will be living in urban areas by 2025. Organizations involved in meeting the Millennium Development Goals in poverty reduction face the crucial challenge of raising awareness on the role of energy in poverty reduction among the urban poor and how to integrate this fully into development processes.

This project, "*Enabling Urban Poor Livelihood Policy Making: the Role of Energy Services*" intends to provide pertinent data to determine the role of energy utilization in sustainable urban livelihoods, as well as form bases for making policies that address the gender, energy and urban poor issues by validating the following hypotheses:

- Clean and affordable energy services are important for good physical well being and productivity of household members;
- Social networks and relationships facilitate access to energy services;
- Clean and affordable energy services are a key factor in sustainability of livelihoods by increasing viability of existing enterprises and enabling establishment of new ones;
- Energy sector reforms lead to improved access to clean and affordable energy services by enterprises.

The study was conducted in Manila and Marikina, two cities in Metro Manila. The research samples in both cities belong to the urban poor sectors of the two cities. Six districts were represented in Manila while two districts were involved in Marikina through the selected purposive sampling technique. A sample size of 1000 inclusive of households and 100 enterprises was used. The respondents constituted the father, the mother, or one of the matured children of the household, the basic unit.

Participatory Urban Appraisal techniques were employed in obtaining information from the target groups which were household heads or members and on energy issues especially in relation to well- being and productivity of households, social relationships and networks, and policies for sustainability of enterprises. Transect walk was also conducted to validate the data gathered from the questionnaire. However, this was done to only two percent of the total population.

The study validated that clean and affordable energy services are important for good physical well-being and productivity of household members.

Also, the study showed that social networks and relationships do not necessarily facilitate access to clean energy services.

Access to clean and affordable energy services among the urban poor in the cities of Manila and Marikina have allowed those who are engaged in economic enterprises to sustain their businesses and also encouraged establishments of new ones.

Although there are concerns about the increasing cost of electricity, pilferage and other problems regarding distribution, electricity is just one source of energy power, but an important one. There is need for reforms in terms of finding clean and alternative sources to electricity and other energy sector reforms to enhance access for sustainable enterprises among the urban poor, especially those in the food and shoe-making industry.

The research finding led to the notion that urban population is continuously increasing while economic strength of families is decreasing due to energy crisis. A surge in the increase of oil prices and oil products seemed to dictate the considerable increases in the price and consumption for electric and water as well as other basic commodities. The current condition is foreseen to lead to an increasing number of urban poor whose quality of life will depend on many factors including availability of cheap and efficient energy services. This bleak picture of rapidly deteriorating socio-economic conditions of the poor urban livelihoods necessitates a concerted effort among government, non-government organizations and the private sector to develop and implement energy related measures and alternatives to sustain acceptable socio-economic programs for this specific group of people. This condition will contribute to the achievement of the country targets of the Mid-Term Philippine Development Plan and MDG towards poverty reduction.

GLOSSARY OF TERMS

ENERGY SERVICES: Includes lightning, cooking, heating and cooling, pumping, water sterilization, refrigeration, communication and power for productive purposes.

GENDER: A system of socially defined roles, privileges, attributes and relationships between women and men, which are not determined by biology, but by social, cultural, political and economic forces.

GENDER AWARENESS: The ability of persons or policies to understand the implications of a particular program, project or policy for both men and women; and to plan according to the needs of both parties.

GENDER-MAINSTREAMING: Process to realize gender awareness within an organization and/or its policies, programs and projects.

HOUSEHOLD: People who live within physical structure and have common use of resources e.g. kitchen/sanitation, electricity, income, labour, equipment (e. g. iron).

LIVELIHOOD: The capacity (ability and opportunities) to enjoy long, healthy lives in a manner of one's choosing in harmony with one's physical and social environment.

OIL SPILL: An oil spill is any escape of crude oil product into a body of water during offshore drilling, production or transportation operations.

PROVEN RESERVE: Oil or gas that engineering and geological indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions.

PROVED RESERVES: Proved reserves are already- located oil and gas known to be recoverable with existing facilities, present technology, and at current cost and price levels.
They are calculated every year for each field.

FISCAL YEAR
January 1-December 31

WEIGHTS AND MEASURES CONVERSION

1 meter	=	3.28 feet (ft)
1 kilometer	=	0. 62 mile (ml)
1 square meter (m2}	=	0. 39 square mile (sq mi)
1 tonne	=	2.205 pounds (lbs)
1 kilogram (kg)	=	2.20 pounds (lb)
1 barrel	=	42 gallons or 191.1 liters
7.33 barrels	=	1 tone

ACRONYMS AND ABBREVIATIONS

DFID	Department for International Development, UK
DOE	Department of Energy
ENERGIA	International Network for Gender and Sustainable Energy
ERB	Energy Regulatory Board
GDP	Gross Domestic Product
IPPs	Independent Power Producers
KaR	Knowledge and Research
LPG	Liquefied Petroleum Gas
MERALCO	Manila Electric Company
NAWASA	National Water and Sewerage Authority
NGO	Non-Government Organization
NEA	National Electrification Administration
NPC	National Power Corporation
OPEC	Organization of Petroleum Exporting Countries
PMS	Premium Motor Spirit (Petrol)
PPCP	Public-Private Community Partnership
PPPRA	Petroleum Products Prices Regulatory Agency
TDG	Technology and Development Group, University of Twente
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

ACKNOWLEDGEMENT

Funding for this Knowledge and Research project (KaR*), "Enabling Urban Poor Livelihoods Policy Making: Understanding the role of Energy Services"* was provided by the Department for International Development (DfID) of the United Kingdom. Some activities were conducted along with our project activities with ENERGIA, an International Network of Women in Sustainable Energy based in the Netherlands, and the Asia Regional Cookstove Program (ARECOP) based in Indonesia. The Technology and Development Group (TDG) of the University of Twente, Netherlands was the lead consultant of the project. In that capacity, TDG was responsible for the overall project co-ordination among the countries and reporting to DfID. To enable the TDG to undertake the study in the Philippines, Nigeria and Brazil, TDG worked with Approtech Asia, Friends of the Environment (FOTE) and Winrock International as lead organizations for the implementation of the project in their respective countries.

We therefore express our gratitude to DfID, ENERGIA and ARECOP for providing financial and technical assistance required for the completion of this project. We also acknowledge with great appreciation the most important and difficult role played by Dr. Joy Clancy of TDG towards the completion of the project. We would also like to thank Ms. Wendie Klieverik of TDG-UT for her valuable administrative assistance. Our appreciation goes to our colleagues, Ms Joanna Maduka, Ms. Tanya Andrade, Ms. Adriana Alvarez, the study leaders in Nigeria and Brazil, respectively, for their contribution towards the success of this project.

Finally, we will not fail to acknowledge the role played by our international and regional gender, energy and poverty network organizations, local partners and the respondents, who were the source of new knowledge. The Philippine Normal University through Dr. Epifania V. Tabbada; the Nonformal Education Teacher Community Coordinators of the Department of Education – Manila under the leadership of the Nonformal Education Supervisor, Mrs. Adelina Y. Ranga, the City governments of Manila and Marikina that provided professional and technical support during our data collection, the representatives from the Department of Energy, Department of Health and the National Economic Development Authority for their valuable inputs during the workshops and meetings, finally, our dedicated statistician, Mr. Danny B. Pedragosa and the hardworking staff of Approtech Asia, Mr. Ronnie S. Mataga, who worked beyond official working hours and days.

We thank you all.

Feri G. Lumampao

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CHAPTER I

INTRODUCTION: THE SETTING

1.1 The Philippine Economy

As a nation of 86 million as of 2004, the Philippines had struggled in maintaining and balancing environmental, social and economic growth through years of challenges in its leadership and political settings.

Predominantly agricultural, the Philippine economy has grown in the manufacturing sector since the 1960s. During the mid-90's, 46 percent of the work force was comprised of those in agriculture, fishing and forestry. These areas also contributed over 20 percent to the GDP. The service industry comprised almost 40 percent with manufacturing, construction and mining employing 15 percent.

A narrow deficit was shown in the 1997 annual budget with revenue at $16.3 billion and expenditures at $16.6 billion. Growth was expected to slow to approximately 3% GNP in 1998 as a result of continuing effects of the East Asian financial crisis.

During the Asian financial crisis of 1998, the Philippines was less severely affected than its neighbors, aided in part by annual remittances of $7-8 billion from overseas workers and no sustained run up in asset prices or foreign borrowing prior to the crisis. The CIA Factbook has analyzed that from a 0.6% decline in 1998, GDP expanded by 2.4% in 1999, and 4.4% in 2000, but slowed to 3.2% in 2001 in the context of a global economic slowdown, an export slump, and political and security concerns. GDP growth accelerated to 4.3% in 2002, 4.7% in 2003, and about 6% in 2004, reflecting the continued resilience of the service sector, and improved exports and agricultural output. Nonetheless, it will take a higher, sustained growth path to make appreciable progress in poverty alleviation given the Philippines' high annual population growth rate and unequal distribution of income. The Philippines also faces higher oil prices, higher interest rates on its dollar borrowings, and higher inflation. Large unprofitable public enterprises, especially in the energy sector, contribute to the government's debt because of slow progress on privatization.

During the financial crunch in 1998, the informal sector including the underground economy was largely responsible for the survival of the countries economic conditions. From the man in the streets selling newspapers, candies, and bottled waters to the silent entrepreneur vending orchids, buko pie and other non-traditional products among the urban poor came the silent flow of money. At present, these underground economic activists have permeated the urban sectors of the Philippine society, especially Metro Manila. The informal sector has more than doubled in the streets of Manila, especially the micro-micro-entrepreneurs who sell when there is capital and in seasonal basis.

On the side of the government, the present administration has outlined the following agenda that will jumpstart the country’s growth towards sustainable and equitable progress: Balanced budget; Education For All (EFA) children; Automation of the electoral process; Transportation and digital infrastructure to link the archipelago; Terminating hostilities; Healing the wounds of EDSA 1,2 and 3; Electricity and water for all; Opportunities for livelihood; Decongesting Metro Manila and Developing Subic and Clark into the most competitive international service and logistic centers in SE Asia.

These agenda are contained in the 2004-2010 Medium-Term Development Plan as focused policy strategies and programs that will result to solutions and interventions to the country's most pressing problems.

There are also numerous private sector and NGO initiatives that focus on empowering the poor and alleviating hunger and poverty through sustainable environmental development. It is worthwhile looking at the best practices and success stories of community-based and individual projects that sustained the economic activities of families and communities as well as contribute to the strengthening of the environment and social fabric of the community.

1.2 Energy Background

- Electricity

The Philippine power system consists of three major island grids, namely Luzon, Visayas and Mindanao; there are also several small island grids. The Luzon grid is the largest, accounting for 75% of total generation and installed capacity. The Visayas grid comprises the islands of Cebu, Leyte, Negros, Panay, Samar and (soon) Bohol. Together they amount to around 10% of total generation and installed capacity. The Mindanao grid accounts for about 15% of total generation and installed capacity.

Luzon, which includes the capital Manila, has about 75% of national electricity demand. Prices are such that industrial and commercial customers subsidize residential customers, and the Luzon grid subsidizes those of the Visayas and Mindanao.

Prior to 1987, electricity production was solely the responsibility of the government-owned National Power Corporation (NPC). Although the NPC remains the principal generator, a significant portion of generating capacity is now being operated by independent power producers (IPPs). Responsibility for transmission still remains with the NPC. Since 1995, the NPC has allowed "open access" over the high voltage transmission system, allowing IPPs to sell directly to distributors and large industrial customers.

In 1999, IPP installed capacity stood at almost 50% of total generating capacity, accounting for 50% of the total of around 40TWh of electricity produced. As a consequence of the Asian economic crisis in 1997, projected load growth did not materialize. The result was that NPC plants are now under-utilized, with the spare capacity margin being about 50% of demand on average.

By about the end of 2000, grid interconnections between the main Visayas group of islands were expected to be completed. The main island of Luzon is interconnected to the Visayas grid through a double circuit 350 kV DC link which now allows transport of about 480MWe of geothermal energy from the Visayas. Another submarine HVDC link with a capacity of 500MWe is planned to be in place by 2004 between the Visayas and the hydro-dominated Mindanao grid. In addition, there are also small isolated island grids, predominantly located in the Visayas region, which are served by small diesel generators.

Distribution is performed by 27 private and municipality owned utilities, and also by 119 rural electricity cooperatives. The largest privately owned distribution company by far is the Manila Electric Company (MERALCO), which distributes more than 75% of national sales. About 76% of villages are electrified and connected to the main grids, and the government aims to extend electrification to all villages by 2004.

The Philippines has a large gas field some 500 km off-shore from Luzon. Gas-fuelled generating plants are under construction, and a gas pipeline from the Malampaya gas field in Palawan Island is expected to be operational by 2002. By about 2003, good fuel diversity is expected to be achieved between hydro, coal,

gas, oil and other sources (e.g. geothermal, wind, etc.). The Philippines is the world's second largest producer of geothermal power, after the USA.

1.3 The Energy Agenda

The Philippine energy sector is anchored on a two-fold agenda emphasizing on the attainment of energy independence through resource development and conservation and the implementation of market reforms in the power sector to generate industry competitiveness and efficiency.

The Philippine Energy Plan 2005 Update reported an energy supply growth of 2.2 percent from 255.4 MMBFOE in 2002 to 260.9 MMBFOE in 2003 (Tables 1 and 2). The total indigenous energy production in 2003 increased by 8.5 percent reaching 139.1 MMBFOE as compared to its 2002 aggregate of 128.1 MMBFOE. The increase in the indigenous energy production may be due to the improved production of natural gas resulting from the continuous operation of the Malampaya gas field. This led to the increase of the country's energy self sufficiency level of about 3.1 percent, i.e., from 50.2 percent in 2002 to 53.3 percent in 2003.

Although there is a 1.8 percent decline in the country's energy import, the country remains to be dependent on imported energy to sustain its growing energy demand. In 2003, net imports (total imports less international bunkering and stock change) reached 121.8 MMBFOE as compared 127.2 in 2002. Oil imports of 116.7 MMBFOE slightly declined by 0.6 percent in 2003 compared to the previous year's level of 117.32 MMBFOE. Similarly, coal imports went down by 8.0 percent from 23.7 MMBFOE in 2002 to 21.8 MMBFOE in 2003. Such decline was due to the relatively high cost of coal in the world market.

In 2003, the final energy demand reached 195.9 MMBFOE which is about 3.2 percent increase from the previous year of 189.7 MMBFOE. The continuing increase in the consumption of electricity, biomass and coal contributed to the increase in final demand.

Residential Sector

Energy is predominantly being used for cooking and lighting in the residential sector. The sector utilizes both commercial (electricity, LPG and kerosene) and traditional fuels (fuelwood, charcoal, biomass residues) to meet its energy requirements. In 2003, the residential sector consumed 74.7 MMBFOE which is about 38.1 percent of the country's total energy consumption. The steady increase of the sector's contribution to the energy mix is due to the growing share of biomass energy in the total residential consumption especially in the rural areas.

Transport Sector

Diesel remained to be the dominant fuel used in the transport sector constituting 54.2 percent of total oil consumption (30.3 MMBFOE) followed by gasoline which consumed abut 21 MMBFOE in 2003. The total energy demand in the transport sector was estimated to be around 55.9 MMBFOE in 2003 and 54.4 MMBFOE in 2002.

Industrial Sector

The industry sector accounted for 33.5 percent of the overall gross domestic product (GDP) in 2003, with 72.8 percent coming from the manufacturing sub-sector, 4.9 percent from mining and quarrying, 12.6 percent from construction and 9.7 percent from electricity gas and water. Final energy demand of the sector was pegged at 46.8 MMBOFE and 47.7 MMBFOE in 2002 and 2003, respectively. The manufacturing sub-sector took up the biggest share of 96.4 percent, followed by construction at 2.3 percent and mining at 1.2 percent share.

Table 1
Overall Energy Balance, 2002
(In Million Barrels of Fuel Oil Equivalent, MMBFOE)

	Oil and Oil Products	Natural Gas	Coal	Geothermal	Hydropower	Biomass, Solar & Wind	Electricity	Total
Indigenous	5.03	11.20	5.37	17.66	12.13	76.76		**128.15**
Imports (+)	117.34		23.72					**141.06**
Exports	(9.86)		-					**(9.86)**
Bunkering (-)	(5.49)		-					**(5.49)**
Stock Change (+/-)	1.94		(0.42)					**1.52**
Priimary Energy Supply	**108.96**	**11.20**	**28.67**	**17.66**	**12.13**	**76.76**		**255.38**
Refinery (Crude Run)	(9.92)							**(9.92)**
Pow er Generation	(11.30)	(11.20)	(23.24)	(17.66)	(12.13)	-	27.08	**(48.45)**
Transmission/Dist Loss (-)	-						(3.34)	**(3.34)**
Energy Ow n Use	(3.21)		(0.21)				(2.16)	**(5.58)**
Net Domestic Supply	**84.53**		**5.22**			**76.76**	**21.58**	**188.09**
Statistical Difference								**-**
Final Energy Demand	**86.79**		**4.58**			**76.76**	**21.58**	**189.71**
Industry	16.38		4.58			18.26	7.61	**46.83**
Transport	54.37		-			-	0.03	**54.40**
Residential	8.39		-			54.84	8.28	**71.51**
Commercial	5.39		-			3.67	5.62	**14.68**
Agriculture	2.27		-			-	0.03	**2.30**
Self-Sufficiency Level, %								**50.18**

Table 2
Overall Energy Balance, 2003
(In Million Barrels of Fuel Oil Equivalent, MMBFOE)

	Oil and Oil Products	Natural Gas	Coal	Geothermal	Hydropower	Biomass, Solar & Wind	Electricity	Total
Indigenous	4.71	17.06	6.50	16.94	13.57	80.29		**139.07**
Imports (+)	116.66		21.83					**138.49**
Exports	(10.60)		-					**(10.60)**
Bunkering (-)	(5.27)		-					**(5.27)**
Stock Change (+/-)	(0.80)		-					**(0.80)**
Priimary Energy Supply	**104.70**	**17.06**	**28.32**	**16.94**	**13.57**	**80.29**		**260.88**
Refinery (Crude Run)	(6.89)							**(6.89)**
Pow er Generation	(11.23)	(17.06)	(22.06)	(16.94)	(13.57)	-	29.53	**(51.33)**
Transmission/Dist Loss (-)	-						(3.80)	**(3.80)**
Energy Ow n Use	(3.60)		(0.21)				(1.91)	**(5.72)**
Net Domestic Supply	**82.99**		**6.06**			**80.29**	**23.82**	**193.16**
Statistical Difference								**-**
Final Energy Demand	**86.08**		**5.67**			**80.29**	**23.82**	**195.86**
Industry	14.51		5.67			19.08	8.44	**47.70**
Transport	55.85		-			-	0.03	**55.88**
Residential	8.18		-			27.37	9.14	**44.69**
Commercial	5.12		-			3.83	6.17	**15.12**
Agriculture	2.42		-			-	0.04	**2.46**
Self-Sufficiency Level, %								**53.30**

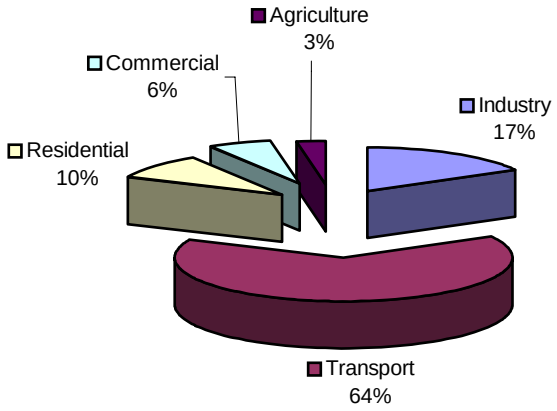
Table 3
Summary: Energy production and consumption
2001-2004

Electricity - production:	52.86 billion kWh (2003)
Electricity - consumption:	46.05 billion kWh (2003)
Electricity - exports:	0 kWh (2003)
Electricity - imports:	0 kWh (2003)
Oil - production:	26,000 bbl/day (2003 est.)
Oil - consumption:	338,000 bbl/day (2003 est.)
Oil - exports:	0 bbl/day (2001)
Oil - imports:	312,000 bbl/day (2003)
Oil - proved reserves:	152 million bbl (1 January 2004)
Natural gas – production:	2.5 million cu m (2004 est.)
Natural gas - consumption:	25 million cu m (2004 est.)
Natural gas - exports:	0 cu m (2004 est.)
Natural gas - imports:	0 cu m (2004 est.)
Natural gas - proved reserves:	07.6 billion cu m (1 January 2004)

Commercial Sector

The commercial sector is composed of trade, transportation, communication, and storage and private services. The sector accounted for 46.7 percent of the country's total GDP in 2003. Its energy consumption grew by 3.1 percent from 14.7 MMBFOE in 2002 to 15.1 MMBFOE in 2003. The electricity consumption of the sector rose by 9.8 percent during the same period from 5.6 MMBFOE in 2002 to 6.2 MMBFOE in 2003. Oil consumption on the other hand, decreased by 5 percent due to the increasing use of grid electricity in the sector.

Figure 1
Final Energy Demand by Sector



Agricultural Sector

The agriculture sector is considered as the least energy sector in the economy with energy consumption of only 2.5 MMBFOE in 2003. Despite its low energy consumption, the sector contributed 19.6 percent of the total GDP in 2003. During the third quarter of the same year, output increases were noted in all agricultural sub-sectors despite the occurrence of typhoons. The improved performance was largely attributed to the fishery sub-sector which grew by 7.4 percent. Other top contributors were livestock, *palay* (rice in husk)

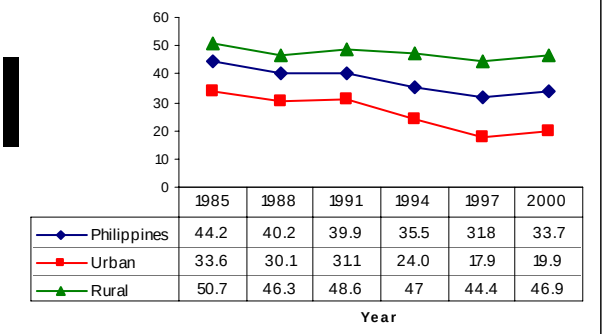
and sugar which jointly resulted in 78.7 percent of the overall agriculture, fishery and forestry growth of 3.7 percent.

1.4 The Philippine Poverty Situation

Overall Economic Situation

The economy posted a gross domestic product (GDP) growth of 4.6 percent in 2002, the highest performance since 1998. The said growth exceeded the Medium-Term Philippine Development Plan (MTPDP) forecast of 4.0 to 4.5 percent. The Gross National Product (GNP) expanded strongly at 5.2 percent, also the highest growth in the post-Asian crisis period.

Figure 2
Poverty Incidence of Famiies



Despite the global economic slowdown and peace and security problems in Mindanao, the country still exhibited an increase in its GDP. All production sectors responded positively to the stable environment as well as sector specific program as they grew at rates close to or slightly higher than the MTPDP forecasts. Industry and services continued to benefit from the implementation of structural reforms. As in previous years, the service sectors contributed the largest share (2.5 percent) to GDP growth. Notwithstanding the El Niño, agriculture, fisheries and forestry had a stable share 0.7 percent. Across all sub-sectors, construction and forestry did not have any significant dent on GDP growth.

Investment in the economy slipped anew in 2002. Investment was sluggish in construction, durable equipment and capital goods. The low level of investment resulted from the unstable political and economic situation, the depreciation of the Philippine peso and high investment costs.

Prices rose about 6 percent in 2002. The unemployment rate, on the other hand, rose from 11.1 percent in 2001 to 11.4 percent in 2002. The country's employment rate was considered among the highest in the region. The increase in domestic and foreign investments will lead to the improvement of job opportunities resulting to reduction in poverty.

The government announced that it would carry out a program of economic reforms, including a reduction in the fiscal deficit and government debt by cutting expenditures and strengthening the tax collection system.

Table 4
Human and Poverty Indicators (UNDP)

Human and Income Poverty Indicators (UNDP)	
Human poverty index (HPI-1) rank	28
Human poverty index (HPI-1) value (%)	14.8
Adult illiteracy rate (% age 15 and above) (2001)	4.9
Population below income poverty line (%)	
$1 a day (1990-2001)	14.6
$2 a day (1990-2001)	46.4
National poverty line (1987-2000)	36.8

The ADB's Asian Development Bank Outlook (ADO) stressed that if the economy is to achieve sustained growth, it must address three structural challenges - poverty reduction, proper environmental management and provision of adequate infrastructure.

1.5 Poverty Thresholds

Individuals are said to be in absolute poverty when they are unable to obtain at least a specified minimum of the food, clothing, and shelter that are considered necessary for continued survival *(U.S. Library of Congress*). Based from that definition, the Philippines established such two minimums to define the poverty line. The poverty line is defined in terms of a least-cost consumption basket of food that provides 2,016 calories and 50 grams of protein per day and of nonfood items consumed by families in the lowest quintile of the population. The Philippine poverty threshold in 2000 was recorded at Php13,823.00 per person per year. On the other hand, poverty threshold in urban areas was estimated at Php15,524.00 per person per year.

From 1985 to 2000, the poverty incidence of families in urban areas fell by 13.7 percent but this progress was negated by very high population growth rates of 2.4 per year. The poverty incidence declined but the actual number of poor people increased substantially (Figures 2 and 3). There were over 700,000 more poor people in 2000 than there were in 1985.

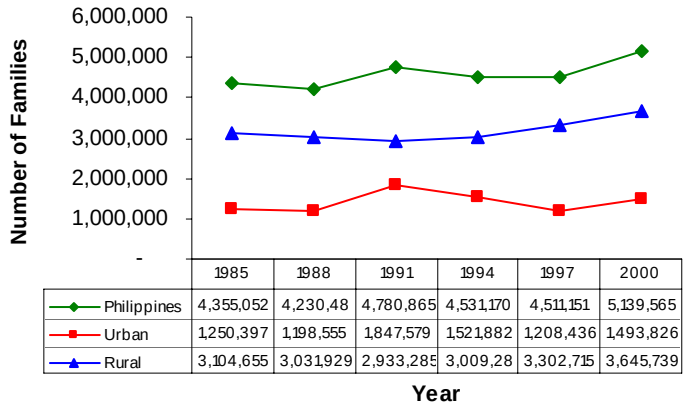
Table 4 shows the human and poverty indicators being used by UNDP. The Philippines rank 28th in the world as far as human poverty index is concerned. From the same source, 36.8 percent of the Filipinos from 1987-2000 were living below the poverty line.

Using the international poverty line of US$1 per day, the proportion of Filipinos living on less than US$1 per day was 14.6 percent from 1990 to 2001. The proportion of the population living on less than US$2 per day was a great deal higher at 46.4 percent during the same period.

1.6 Current Poverty Situation

Recent data indicates that poverty incidence has fallen only slowly over the past decades and that it still remains high, particularly in rural areas (Figure 2). Little progress has been made in increasing living standards for the poorest of the poor. The latter reflects a failure of poverty reduction programs to target effectively the needs of these segments of the population.

Figure 3
Magnitude of Poor Families



	1985	1988	1991	1994	1997	2000
Philippines	4,355,052	4,230,48	4,780,865	4,531,170	4,511,151	5,139,565
Urban	1,250,397	1,198,555	1,847,579	1,521,882	1,208,436	1,493,826
Rural	3,104,655	3,031,929	2,933,285	3,009,28	3,302,715	3,645,739

In 2000, a total of 5,139,565 families have income below the poverty threshold set by the government. More than three million families are located in rural areas while the other 1,493,826 are residing in urban areas (Figure 3).

The proportion of the population below the poverty threshold showed a 24 percent decline from 44.2 percent in 1985 to 33.7 percent in 2000. While the urban areas exhibited a sharp decline of 41 percent, the poverty incidence in the rural areas on the other hand has only gone down to 7 percent during the 15-year period.

The economic turndown in the early 1980s and the economic and political crisis of 1983 had a devastating impact on living standards. The countryside contained a disproportionate share of

the poor. About 71 percent of the poor families lived in rural areas. Urban areas were relatively least affected with only about 29 percent of the families have income below the poverty threshold. However, urban poverty is said to be underestimated since official surveys exclude those without official and permanent residence. The urban poor generally lived in crowded slum areas with no permanent status.

Successive governments accorded poverty reduction as high priority but have had only moderate success in reducing the absolute number of poor Filipinos. For example, President Corazon C. Aquino pledged to destroy the monopolies and structures of privilege aggravated by the Marcos regime. She looked to the private sector to revitalize the economy, create jobs for the masses of Filipinos, and lead the society to a higher standard of living. On the same manner, President Fidel V. Ramos launched the Social Reform Agenda and during his term, the Congress passed the Social Reform and Poverty Alleviation Act in 1997. The Act targeted the disadvantaged groups such as farmers, landless rural workers, fisher folks, indigenous peoples, informal sectors and urban poor. The Estrada Administration, on the other hand, implemented the "*Lingap para sa Mahirap*" program. Priorities were set on five components, namely: ensuring food security, modernizing agriculture and fisheries, providing low-cost housing, protecting the poor against crime and violence and actively involving local government in the program. Currently, President Gloria Macapagal-Arroyo, is implementing the "*Kapit Bisig Laban Sa Kahirapan (KALAHI*) Program focusing on five core strategic thrusts, namely, asset reform, human development services, livelihood and employment opportunities, social protection and security from violence, and participation of the basic poor sectors in policy setting programs.

Despite the noble intentions of the government, the main issues remain – limited budget, governance and the local government unit (LGU) capacity particularly in the context of decentralization. Further, there is a tendency with each new president to disrupt old programs and launch a new ones resulting in duplication of efforts, wasted resources and continuous state of transition.

The 2004-2010 MTPDP contains ambitious poverty reduction targets. The Plan aims to reduce the poverty incidence of families from 28.4 in 2000 to 17.9 in 2010 and to drop the subsistence incidence of families from 13.10 percent in 2000 to 8.98 percent in 2010. However, the MTPDP fails to specify operational links with the poverty programs of the government.

The current poverty situation in the country is a call for action. The country needs a national energy plan focused on the provision of modern clean energy in the areas of agriculture, education, health, water, environment, among others for poverty reduction. Over time, the number of poor Filipinos is increasing and average family incomes are falling despite growth in the country's economy.

1.7 Issues: Energy and Poverty

The Urban Poor

In 2000, the number of families categorized as poor in urban areas is about 1.5 million. The urban poor generally lived in crowded slum areas, often on land or in buildings without permission of the owner; hence, they are referred to as squatters. These settlements often lack basic necessities such as running water, sewerage, and electricity.

The 1995 Household Energy Consumption Survey (HECS), estimated that the monthly income of urban poor households was about Php2,962.00. The majority of the labor force work in the informal sector, generally as vendors or street peddlers. Other activities included service and repair work, construction, transport services, or small livelihood production. Women and children under fifteen years of age are also employed to augment their level of income. Average household size among urban poor household is 5.29 which is smaller than the national average of 5.31.

Although the Philippines experienced a sustained growth in its GDP from 2000-2003, results of the 2003 Family Income and Expenditures Survey indicate a 10 percent drop in real average family incomes. Metro Manila is hard hit which suffered an almost 20 percent drop. The total income accruing to the bottom decile of the population virtually stagnated over the period. The real average income of the bottom 30 percent of the population contracted by about 6 percent from 2000 to 2003.

The measurement of poverty should not focus on income alone. Poverty is a deprivation of vital structures that go beyond income. These structures include components such as, health, education, housing, water and sanitation, access to credit, etc. The following items are some of the vital structures that are apparently lacking in urban areas:

- Water and sanitation. These services must be extended to poor urban areas. Currently, only 70 percent of the poorest households have access to safe drinking water.
- Housing. Government housing assistance has barely reached the poor due to lack of awareness on how to access them and the tedious eligibility requirements that discriminate against the poor. Because of these hindrances, the number of squatters tends to grow in large proportion over time.
- Education. For every 100 children in the Philippines who start Grade I, only 67 will complete elementary schooling.
- Health. Poor quality of public health care. Private health care though available in urban areas is prohibitively expensive for the poor.
- Access to credit. The poor are unable to save so access to credit becomes very difficult.

1.8 Energy Services Among the Urban Poor

The Department of Energy (DOE) conducted household energy consumption survey in 1995 and the data provided in this survey shall be used as basis for the analysis. The National Statistics Office (NSO) in 1994 set the poverty threshold in urban areas as Php9,831.00 per person per year or an equivalent of Php52,104 per family per year (Php4,342.00 per month) using the average household size of 5.3. In the absence of 1995 data, the inflation rate of 5 percent shall be used to get the poverty threshold for the same year. Based on this assumption, the poverty threshold for 1995 was now adjusted to Php 10,322.00 per person per year or Php54707.00 per family per year (Php4,559.00 per month).

Table 5
Number of Households, Average Household Size and Income by Income Class

	Total	Monthly Income					
		<Php5,000	Php5,000-Php9,999	Php10,000-Php14,999	Php15,000-Php24,999	Php25,000 and over	Not reported
Philippines							
Households							
Number ('000)	12,821	7,263	3,238	1,173	666	466	15
Percent	100.00	57%	25%	9%	5%	4%	0%
Average Household Size	5.31	5.08	5.56	5.63	555.00	6.01	4.33
Income (in Million, Php)	88,511	19,545	22,080	13,817	12,509	20,560	-
Urban							
Households							
Number ('000)	6,391	2,739	2,033	860	470	280	10
Percent	49.85	43%	32%	13%	7%	4%	0%
Average Household Size	5.29	5.00	5.41	5.54	5.69	5.89	5.30
Income (in Million, Php)	53,883	8,113	14,011	10,192	8,791	12,775	-
Rural							
Households							
Number ('000)	6,429	4,524	1,206	313	196	186	5
Percent	50.14	70%	27%	26%	63%	95%	3%
Average Household Size	5.33	5.13	5.81	5.89	5.20	6.19	2.40
Income (in Million, Php)	34,268	11,431	8,070	3,625	3,718	7,784	-

Source: 1995 Household Energy Consumption Survey, Department of Energy

Table 5 shows the distribution of households into different income levels. Those considered as urban poor are those households belonging to the first income quintile or those households receiving less than Php5,000 per month. Table 5 depicts that about 43 percent of the households in urban areas are considered as urban poor.

1.9 Government Policy and Objectives

The matter of restructuring the power sector and privatizing the NPC has been the subject of several studies, discussions and public consultations in both the executive and legislative branches of the government.

The objective of the proposed reforms is to make sure the country will have reliable and competitively priced electricity. The strategy is to put an end to monopolies that breed inefficiency, to encourage the entry of many more industry players, and to promote robust competition in generation and supply that will benefit consumers in terms of better rates and efficient services.

The privatization or sale of NPC's generating assets to seven independent companies is expected to trigger competition in the generation sector. This will also effectively shift the burden of providing the necessary financing for capital-intensive power generation plants from the government to the private sector.

With the relatively recent power shortages in mind, together with high forecast growth and the country's present low per capita GDP and electricity consumption, the government's policy is focused on the requirement to deliver a reliable and secure supply of electrical power. To improve social conditions for the population, another compatible, requirement is the total electrification of the country.

To deliver these requirements the government has the following enabling objectives:

- Increase the investment of private capital in the power industry, while minimizing the government's financial commitment.
- Create an environment of competition and accountability.
- Deliver competitive and affordable prices.
- Improve operational and economic efficiency.
- Make transparent the social subsidies.
- Share social and other costs among all users.

1.10 Present Industry Structure

Under the present industry structure, the NPC operates its own generating plant and also buys additional electricity from IPPs. It provides supplies to distributors, which comprise privately and municipality-owned utilities and rural electricity cooperatives, and also to large industrial customers.

The Energy Regulatory Board (ERB) regulates the tariff rates of the NPC, as well as those of the distributors and cooperatives. The Department of Energy (DOE) sets policy direction for the energy industry, while the National Electrification Administration (NEA) provides financial and technical assistance to electricity cooperatives.

1.11 Energy Consumption Patterns

Electricity

Three major utilities are supplying electricity to the end-users, namely, the electric cooperatives (ECs), (MERALCO) and the private investor-owned utilities (PIOUs) or the local government units (LGUs). The electricity supply distributed to the households by these three major electric utilities comprised 69.1 percent of the total electricity sources in 1995. Those derived from generators, storage batteries and dry cells accounted for 30.9 percent.

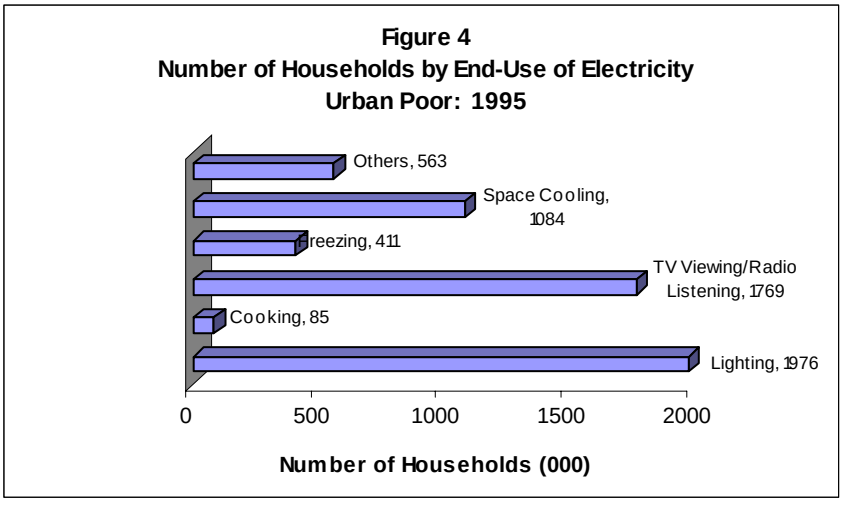
The ECs cater mostly to the different provinces of the country, to date there are 119 ECs with a total coverage of 35,980 barangays. MERALO provides electricity supply mainly in Metro Manila and nearby vicinities with a total coverage area of about 4,300 barangays. The PIOUs/LGUs, on the other hand, are private companies and/or municipal governments which operate diesel genset to provide electricity to the rural households. The area coverage of PIOUs/LGUs is about 1,600 barangays.

Based on the 1995 figures, about 84 percent of the households in the country have access to electricity as opposed to only 36 percent among urban poor (Table 5).

Majority of the urban poor were connected from electric cooperatives (43 percent) and private utilities (34 percent), the rest (about 3 percent) used storage batteries or connected from industry/business or private generator sets.

The average consumption per household per year was 423 kWh or 35 kWh per month (Table 6). The said electricity consumption was somewhat low as compared to the national average of 766 kWh per year. On the average price of electricity per kWh was Php3.13. The poor households were therefore spending Php109.55 per month for electricity consumption.

Electricity was mainly used for lighting and TV viewing/radio listening. Other uses of electricity included space cooling (electric fan) and cooking (Figure 4).

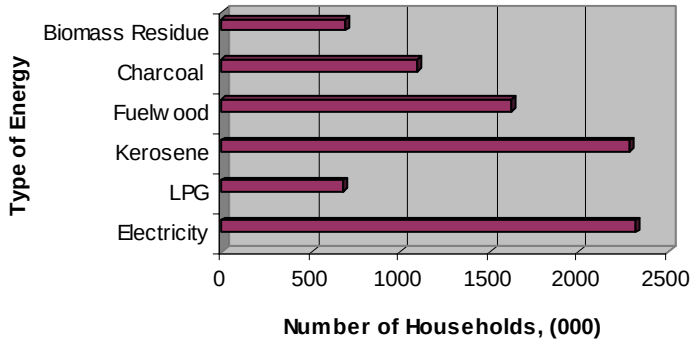


LPG

LPG is considered as the least-used fuel among the urban poor (Figure 5). Only 11 percent of the urban poor households or 676,000 households were using LPG as a source of energy (Table 5). On the average urban poor households spent only about 111 kg. of LPG per year or 9.25 kg per month.

The LPG cylinders are available in three sizes, i.e., 3 kg, 11 kg and 50 kg. The 11 kg. LPG container is the most common among different sizes. The 50kg. LPG, on the other hand was mostly used among commercial establishments such as restaurants, bakeries, etc.

Figure 5
Number of Households by Type of Fuel
Urban Poor: 1995

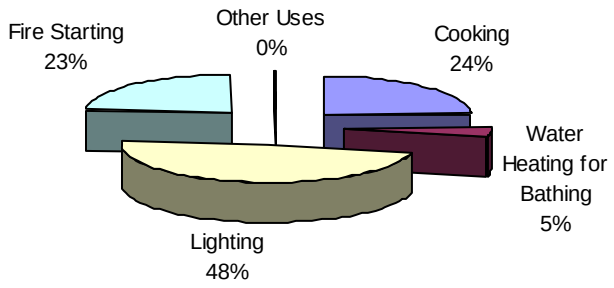


Poor households spent Php12.75 per kg of LPG. On the average, LPG users spent Php118.00 per month. LPG was predominantly used for cooking. Only few of the poor households (5 percent) acquired LPG through delivery, majority purchased LPG from nearby store or dealer (95 percent).

Kerosene

As illustrated in Figure 5, kerosene was considered as the most predominant fuel being used by urban poor households. Thirty-six (36) percent of the urban poor households were using kerosene. The wide use of kerosene among urban poor was due to its multiple uses. Kerosene can be used as fuel for cooking, lighting and fire starting (Figure 6). Among urban poor, kerosene was mostly used for lighting (48 percent) and cooking (24 percent). Kerosene can not be considered as the preferred cooking fuel among urban poor simply because of the availability of other least cost alternatives such as fuelwood and biomass residues.

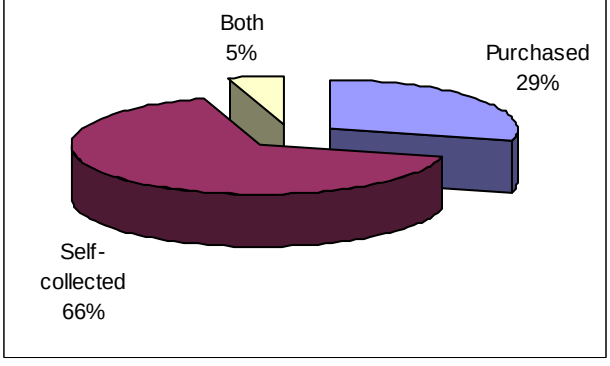
Figure 6
Number of Housholds by End Use (Kerosene)
Urban Poor: 1995



On the average, consumption of kerosene was about 94.5 liters per year or about 8 liters per month. Price per liter was posted at Php9.94. Average consumption per month for kerosene users was estimated at Php79.50.

Kerosene was usually bought from the nearby sari-sari store or picked up from kerosene dealer. Kerosene could also be bought in small quantities, i.e., about Php1.00 or Php2.00 per purchase. This was advantageous to the urban poor since such amount would not bite deeper to their pocket, although the actual costs of retail purchases were somewhat higher if compared to bulk purchases.

Figure 7
Mode of Acquisition (Fuelwood)
Urban Poor: 1995



The pressure feed stove was the most common cooking device. About 36 percent of the households were using this device followed by wick stove (31 percent) and gravity feed stove (22 percent). In the case of lighting appliance, wick lamp was the most commonly used lamp (62 percent). About 32 percent was using kingki lamp and the 6 percent was intended for pressure lamp (3 percent) and other lighting devices (3 percent). Wick lamps and kingki lamps were very common among poor households since these devices can be done by the households themselves using bottles and improvised wick.

Fuelwood

Fuelwood was considered as the preferred fuel for cooking by the urban poor because of its availability, high heating content and low cost. About 25 percent of the urban poor were using fuelwood primarily for cooking. Average annual consumption per household was 1,810 kg. or 151 kg per month. This suggests that fuelwood-consuming households spent about 3 kg of fuelwood per day.

Average price of fuelwood was Php3.23 per kg., although households usually buy in bundles with no actual weight measurements. Households spent about Php488.00 for fuelwood consumption, although majority of them (65 percent) gathered fuelwood for free. The other 29 percent acquired fuelwood through purchase while only 5 percent were collecting and purchasing the fuel. .

Sources of fuelwood include own land (45 percent), private land (45 percent) and government land (10 percent).

Charcoal

Only 17 percent of the households in urban poor were using charcoal for cooking. Charcoal was being used for grilling and was utilized alongside with other fuels. This was evident by the small consumption of charcoal among urban poor households. Households consumed only about194 kgs of charcoal per year or an equivalent of 16 kgs per month. The use of purely charcoal for cooking would not be economical because of its relatively high price. Price of charcoal was about 9.76 per kg almost equivalent to the price of LPG. Assuming, that a certain household will consume 1 kg of charcoal per day, its monthly expenditures would therefore be Php292.80 per month, almost double if compared to LPG. As mentioned above, LPG users spent only Php118.00 per month.

About 90 percent of the households purchased their charcoal supply. The other 10 percent on the other hand produced their own charcoal.

Biomass Residues

Biomass residues as used in the HECs include agricultural or forest product residues such a bagasse, coconut shell and husk, coconut midrib, rice stalks and hull, corn stalks and husks, etc. Although biomass residues were available for free, these resources were not widely used among urban poor. Biomass residues are usually bulky and require tedious preparation before it can be finally utilized as fuel.

Only 11 percent of the urban poor are using biomass residues for cooking (94 percent) and ironing (6 percent). Average annual consumption per household was 924.2 kgs or 77 kgs per month. Cost of biomass residues was Php1.74 per kg. Households spent about Php134.00 per month for biomass residues although 89 percent of the households obtained these fuels for free. The other 11 percent purchased these fuels.

1.12 **Table 6**
Annual Household Fuel Consumption by Type of Fuel
Urban Poor: 1995

Type of Energy	Total Consumption/Year	Average Consumption/ Household/Year
Electricity	980409 MWh	423.1 kWh
LPG	75088 Tons	111.1 kg.
Kerosene	215353 m3	94.5 liters
Fuelwood	2939729 Tons	1810.2 kg.
Charcoal	210978 Tons	193.6 kg.
Biomass Residues	640475 Tons	924.2 kg.

Source: 1995 Household Energy Consumption Survey, Department of Energy

Access to Energy

Electricity

Access to electricity in urban areas is not considered as a problem. To date, Meralco has already reached 97 percent electrification level in its franchise areas. Meralco franchise area covers 23 cities and 88 municipalities including Metro Manila. Meralco's service area is equivalent to only about three percent of the country's total land area however; it produces 50 percent of GDP, 31 percent from Metro Manila alone. Meralco's franchise area is home to 19 million people, almost a quarter of the entire Philippine population of 80.0M.

The Electric Cooperatives, on the other hand are also covering urban areas in different provinces of the country. To date, ECs have already reached 90.4 percent barangay energization level. Particularly, electrification level in urban areas has reached 98 percent.

In overall, the country's total electricity generation in 2003 was approximately 52,863 GWh higher by 9.1 percent compared to its 2002 level of 48,647 GWh. Total electricity sales posted an accelerated growth of 10.4 percent from 38,625 GWh in 2002 to 42,643 GWh in 2003. Significant increase was observed in the residential as sales went up by 12 percent which was attributed to new connections and the increased demand for appliance usage. Moreover, rapid increase was also seen in the industrial and commercial sectors with 10.9 percent and 9.9 percent growth rate, respectively.

Electricity is readily available in urban areas. However, the first cost of connection deters the urban poor households to have access to electricity. Further, most urban poor houses are known to be of poor structure, thus they could never pass a genuine installation test. Total cost of connection in Metro Manila for example is PHP2,500 which is more than 75% percent of the total monthly income (Php3,202.00) of the poorest households. Electricity rates are also relatively high. MERALCO's current rate (2003) is estimated at Php6.03 and Php6.27 per kWh for residential and commercial customers, respectively.

Households in the urban areas considered frequent brown outs (90 percent), high rates (72 percent), low voltage (46 percent) and fluctuating voltage (48 percent) as the major problems in the electricity supply system.

Kerosene

The supply of kerosene was not considered as a problem by the various end-users. Most of the household interviewed obtained kerosene from nearby sari-sari store located in less than 250 meters. Others who made bulk purchases, i.e., galloons, containers, obtained their kerosene from the nearby market to save on costs. Kerosene was being purchased in the market alongside with other goods and household items.

In urban areas, the high cost of kerosene was considered as a problem in its supply system. There were very minimal households who responded that kerosene was either unavailable or inaccessible. Prices of kerosene in urban area ranged from Php8.84 to Php11.83 per liter. Average price was estimated at Php9.94 per liter.

Households who made bulk purchases obtained kerosene at lower cost as compared to those who were purchasing in small quantities, i.e., fraction of a liter. In the long run, the poor or those who have no ample cash are considered as losers since they are paying high premium for their lighting and cooking fuel.

LPG

The deregulation of the oil industry led to the entry of more players on the petroleum retail business. LPG can now be easily obtained from various retail outlets including sari-sari stores and LPG dealers. The proliferation of LPG retail outlets led to tampering of some LPG retailers. The government therefore is intensifying its effort to provide the public with greater of access of petroleum products with the right quantity and good quality. Routine and complaint-related inspections and investigation of LPG establishments and gasoline stations are currently being pursued to protect the public against illegal and unfair practices.

The 1995 survey showed that the households obtained their LPG from sari-sari store or LPG dealer. Although accessibility and availability were not considered as a problem, the costs of the LPG and the equipment itself were the major constraints in its supply system. LPG could be bought at Php12.75 per kg in urban areas. Prices ranged from Php12.19 to Php17.59 per kg.

The cost of 11kg of LPG cylinder costs from Php475-500, depending upon the brand and place of purchase.

Fuelwood

Still a large percentage of the households in the urban areas were gathering fuelwood for free (65 percent). Fuelwood was usually gathered from their own and private lands. A minimal 9.6 percent gathered fuelwood from government land or forest. These findings point out that most of the self-collected biomass fuels are harvested in alienable and disposable land and thus may not directly impact the environment.

The respondents viewed that fuelwood is difficult to get and becoming more expensive. Price of fuelwood in urban areas ranged from Php1.20 to Php 5.91 per kg. Average price was about 3.23 per kg. Fuelwood are usually sold in bundles in retail stores or along the highway tied with rattan, vine or plastic straw.

Charcoal

Charcoal being a processed biomass fuel was acquired through both purchasing and self-production. However, purchasing was the most common mode of acquisition (90 percent) in urban areas probably because of the tedious process involved in producing charcoal and space needed especially when using the open method.

Charcoal was available at Php9.76 per kg. The minimum price per kg was recorded at Php9.26 and the maximum at Php11.04 per kg. Charcoals are usually sold at Php5-10 per plastic bag in retail stores or market.

Biomass Residues

Biomass residues were not readily available in highly urbanized city such as Metro Manila but were relatively common in peri-urban and sub-urban areas. In urban areas, biomass residues were almost entirely gathered (89 percent). This is probably because biomass residues are mostly waste or residues from agricultural production which are not yet considered as a commercial commodity and thus without an appropriate economic valuation. Hence, they can hardly be acquired through direct purchase or other forms of formal economic transaction.

Biomass residues were available at Php1.69 per kg. The highest price recorded was 3.30 per kg and the lowest was Php0.72 per kg.

In some areas in the country, rice hull is sold at Php5-15 per sack. It is used as fuel for gasifiers, dryers, fruit dehydrators, kiln, among others. It is also used as planting material or garden soil.

1.13 Incidence of Fuel Switching

The energy transition from the use of traditional fuels to modern energy will provide an indication of economic development. The wider reach of modern fuels emphasizes the significance of provision of basic infrastructure of energy distribution systems. In the absence of developed infrastructure, energy consumption patterns tend to depend heavily on traditional energy sources like fuelwood, charcoal and biomass residues. Poorly developed infrastructure leads to limited accessibility and consumption of modern fuels like electricity, kerosene or LPG.

Table 7
Number and Percentage of Households by Type of Fuel Used, Urban Philippines: 1989 & 1995

Type of Fuel	1995		1989		Difference	
	Number (000)	Percent	Number (000)	Percent	Number (000)	Percentage Point
Total Households	6,429		6,847			
Electricity	4,894	76.1%	3,389	49.5%	1,505	26.6%
LPG	1,094	17.0%	616	9.0%	478	8.0%
Kerosene	5,882	91.5%	5,868	85.7%	14	5.8%
Fuelwood	5,300	82.4%	5,881	85.9%	(581)	-3.45%
Charcoal	2,147	33.4%	2,027	29.6%	120	3.79%
Biomas Residue	2,663	41.4%	4,430	64.7%	(1,767)	-23.28%

Source: 1995 Household Energy Consumption Survey, Department of Energy

Table 7 illustrates the percentages of households utilizing different types of fuel in urban areas in 1995 and 1989, where the same survey had been executed. The number of households using electricity rose to about 27 percent during the six-year period. Additional 1.5 million households availed electricity services within the six-year span. The sharp increase of electrification rate was due to the massive electrification program of the government. The government has set the target of total barangay electrification by 2008.

The use of LPG has also increased to 8 percentage point from 1989 to 1995. More than 1 million households in the urban areas are now using LPG as compared to only 616,000 in 1989. The households considered the convenience of using new fuel or LPG as their primary reason for switching fuel. Kerosene and charcoal also established an upward trend with about 5.8 and 3.7 percentage points, respectively.

Among the different traditional fuels, biomass residues were considered as the biggest loser (23.2 percent). Meanwhile, only a few households gave up the use of fuelwood (3.4 percent).

Upfront costs, like the cost of appliances such as, LPG cylinders and appropriate, improved cooking stoves were considered as the reasons why there was only a minimal increase on the use of LPG and kerosene. The cost of appliances to be used with specific forms of energy is considered as an important pre-requisite to facilitate fuel switching.

Table 7 further illustrates the different fuel ladder of households in 1989 and 1995. In 1989, fuelwood was the predominant fuel followed by kerosene, biomass residues, electricity, charcoal and LPG. In 1995, the positions of kerosene and fuelwood were interchanged making kerosene as the most widely used fuel in the urban areas. Electricity which used to occupy the fourth slot came third in 1995 followed by biomass residues. The standing of both charcoal and LPG remained the same taking the fifth and sixth slots, respectively.

Majority of the households agreed that LPG is convenient to use and that its price and equipment are expensive. On the other hand, most of the respondents disagreed with the perception that LPG is hard to get or not available. Moreover, perceptions that kerosene and its equipment is difficult to get was not accepted by 9.9 million and 7.8 million households, respectively.

For traditional fuels, households validated that economics is not the sole reason behind the preferences of the households to use fuelwood. Cultural and behavioral factors also influence and sustain such preference. This is highly noticeable in the households' concordance to the perception that while fuelwood is dirty, it however creates better tasting dishes. Many also agreed that fuelwood is accessible and inexpensive. Further, in terms of perceived energy efficiency, most of the households think that fuelwood has a high heating value.

1.14 Facts and Imperatives

- The Philippine energy sector showed an energy supply growth of 2.2 from 2002 to 2003. Indigenous production increased by 8.5 percent due to the improved production of natural gas. Energy sufficiency level reached 53.3 during the same period. The residential sector remained to be the biggest consumer of energy (74.69 MMBFOE), followed by transport (55.88 MMBFOE) and industry (47.71 MMBFOE). Both commercial and agriculture sectors came last at 15.13 MMBFOE and 2.46 MMBFOE, respectively.

- The economy posted the GDP growth of 4.6 percent in 2002, the highest performance since 1998. Inflation rate was pegged at 6 percent and the unemployment rate rose from 11.1 percent in 2001 to 11.4 percent in 2002. The government vowed to carry out program to reduce fiscal deficit by cutting expenditures and intensifying tax collection system.

- The Philippine poverty threshold in 2000 was recorded at Php13,823 per person per year. In urban area, poverty threshold was estimated at Php15,524.00. Although the poverty incidence of families fell by 13.7 percent from 1985 to 2000, the magnitude of poor families continued to increase because of high population growth rate (2.4 percent). There were over 700,000 more poor families in 2000 than there were in 1995.

- Successive governments accorded poverty reduction as high priority but have had only moderate success in reducing the absolute number of poor Filipinos. The main poverty issues remain to be limited budget, governance and local government unit's capacity to undertake poverty alleviation agenda. Each new president launch new poverty reduction program resulting in duplication of efforts, wasted resources and continuous state of transition.

- The 2004-2010 MTPDP contains ambitious poverty reduction targets but fails to specify operational links with the poverty programs of the government. Despite the growth in the country's economy, poor Filipinos are growing in numbers and average family incomes are falling desperately.

- In 2000, the number of families categorized as urban poor is about 1.5 million. Most of these families work in the informal sector generally as vendors or street peddlers. Women and children are also employed to augment their level of income. The urban poor usually reside in crowded slums which often lacked the basic necessities such as running water, sewerage and electricity.

- Electricity and kerosene were the most predominant fuels among the urban poor. The popularity of these fuels was due to their multiple uses. These fuels could be used for lighting, cooking, running appliances, etc. LPG was considered as the least preferred fuel because of its cost. Fuelwood, on the other remained to be the most important cooking fuel because since it is readily available and has relatively low cost.

CHAPTER II

CONCEPTUAL FRAMEWORK AND METHODOLOGY

2.1 The Framework of the Study

This study aims to provide a holistic understanding of the role of energy in sustainable urban livelihoods, provide micro-level empirical evidence of the energy issues within urban households to form a basis for making policies that address these issues in the Philippines. Further, the study intends to give insight into the poor urban livelihoods and the role of energy services in sustaining them. This is based on the sustainable livelihoods framework which depicts livelihoods as being determined by the range of assets available to the household. These are basically of five types: human, financial, natural, physical and social.

Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. Financial assets are financial resources that people use to achieve their livelihood objectives, including stocks (savings, convertible assets, including livestock) and flows of income. Natural resources are stocks from which resource flows and services useful for livelihoods are derived (e.g. lands, trees, water sources). On the other hand, physical capital comprises the basic infrastructure and producer goods needed to support livelihoods (e.g. buildings, roads/transport, water supply, communications). Influencing the interactions among these assets are social resources upon which people draw in pursuit of their livelihood objectives, including networks, membership of formal and informal groups, and relationships of trust and reciprocity.

Two sets of factors external to the household but which exert a significant influence on their livelihoods, are “processes and structures” and the “vulnerability context”. Processes and structures include such factors as the legal environment, culture and institutions within society that affect the way the people can put their assets to use and also how they can accumulate assets. The vulnerability context refers to the ways that external shocks and trends affect asset levels. It could either be external (exposure to shocks or hazards) or internal (resilience or capacity to cope with or withstand shocks). In the Sustainable Livelihood framework, the emphasis is on the external aspect. These factors determine the livelihood strategies that people pursue, and ultimately their livelihood outcomes (including income levels and food security). Their interactions are depicted in Figure 3.

Livelihoods are determined by the range of assets available to the households. Natural capital refers to the natural stocks (soil, water, air, genetic resources, etc.) and environmental services (hydrological cycle, pollution sinks, etc.) from which resource flows and services useful for livelihoods are derived. Economic or financial are the capital, cash/credit/debt, savings and other economic assets which are essential for the pursuit of any livelihood strategy. Human capital includes the skills, knowledge, ability to labor and good health and physical capability important for the successful pursuit of different livelihood strategies. Social capital are those networks, social claims, social relations, affiliations and associations upon which people draw when pursuing different livelihood strategies requiring coordinated actions. Physical capital are those basic infrastructure and produced goods such as buildings, roads, water supply, communication, needed to support livelihoods.

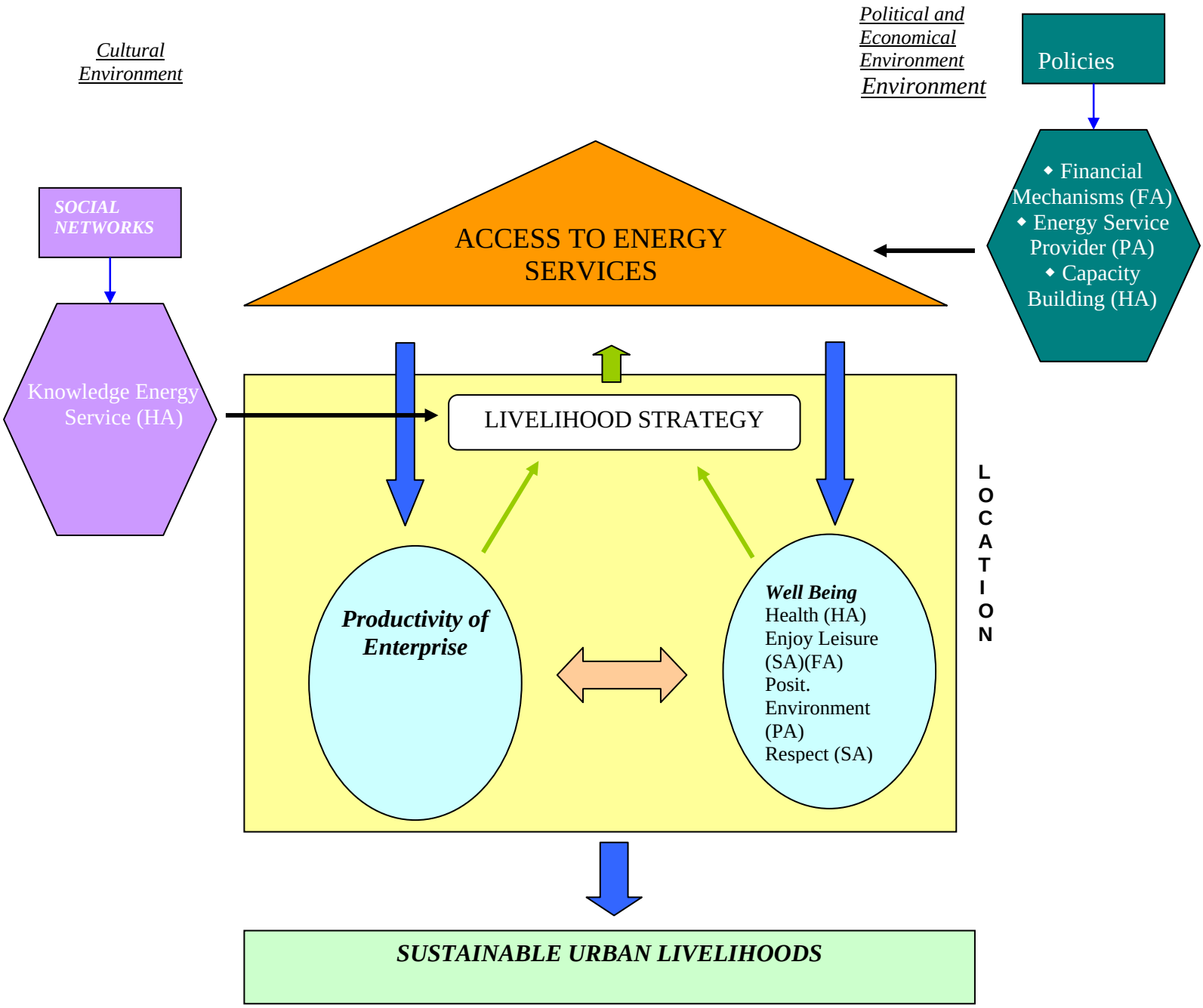


Figure 3: Sustainable Livelihoods Framework (DFID)

2.2 Research Hypotheses

The data gathered for this study were to test the validity of the following hypotheses:

Hypothesis 1:

Clean and affordable energy services are important for good physical well-being and productivity Issues related to energy and productivity of Household members.

The urban poor usually migrate to cities and in this case, to Manila and Marikina to seek better jobs, higher income, and avail of better facilities and opportunities. After their exodus to the two cities, it is assumed that these migrants are better off than their rural poor counterparts because of their access to modern forms of energy, thus increasing their incomes through increased productivity. However, affordable energy services are also important to achieve good physical well-being that is related to productivity issues. Whether these assumptions are valid or not will be tested in this study.

Hypothesis 2:

Social networks and relationships facilitate access to energy services.

The study tried to search for evidences that showed the role of social networks and relationships as contributory factors for easier access to energy services among the urban poor. Social connections could enable the urban poor to have access in energy services, technology application, and the acquisition of knowledge, attitude, and skills that could be vital in the improvement of urban livelihoods. The study examined the role of associations such as cooperatives, non-government organizations, local government units, religious, business associations and socio-civic organizations to enhance their access to energy services.

Hypothesis 3:

Energy services are key factors in sustainable urban livelihoods by increasing the viability of the existence of enterprises and enabling the establishment of new ones.

Maximizing the utilization of energy services could contribute to the efficient management and sustainability of entrepreneurial activities of the urban poor. Further investigation would show whether this condition would eventually lead to the establishment of new business ventures. Factors that adversely affect this condition will be investigated to provide solid data to support the hypothesis.

Hypothesis 4

Energy sector reforms lead to improved access by urban enterprises to energy services.

Energy sector reforms will be identified and be synchronized with the plan of the government and other agencies to assist the urban poor livelihoods to improve and enhance access to energy services. Thus, it should be validated that government policies that address the energy needs of the urban poor will increase their chances to have sustainable livelihoods.

2.3 Research Locale

This study was conducted in the cities of Manila and Marikina.

Manila City

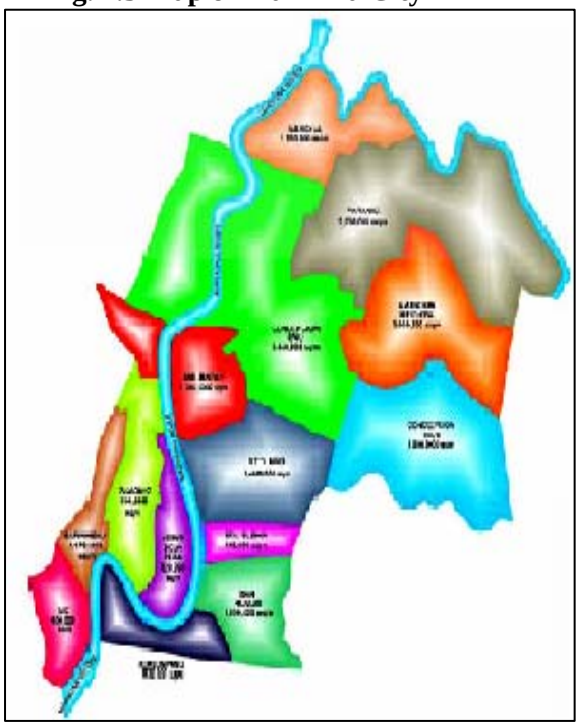
Fig. 2.2 Map of Metro Manila

There are six districts in Manila. Each district is composed of many barangays (the smallest unit of government in the country). Stratified purposive sampling was applied to identify the 2 barangays in each District with population mainly engaged in entrepreneurial activities dealing with food and food preservation, with an earning of at least 2 dollars a day, and belonging to the urban poor. Fifty respondents in each District were selected, giving a total of 100 households and a total of 600 respondents among entrepreneurs from the six districts. In-depth probing and application of varied sustainable livelihood approaches (SLA) were applied to selected 10 respondents per district giving a total of 60 entrepreneurs-respondents from the City of Manila.

Rapid urbanization in the Philippines is characterized by the megacity of Metro Manila, a metropolitan area comprised of 17 cities and municipalities whose population increased from nearly 2.5 million in 1964 to over 12 million in 2000. Rapid uncontrolled growth and poor urban management has severely impacted the poor. It is estimated that over 20 percent of Metro Manila's population is either under or near the poverty line and 35 percent reside in informal "slum" settlements. Many urban poor communities have evolved into long-term problem areas that constraint sound urban development, promote the influx of additional rural poor migrants, and have grown in size beyond the capacity of local government and the non-government organizations (NGOs) to effectively respond. The urban poor who reside in these sprawling, largely unplanned communities must contend with poor quality housing, overcrowding, inadequate access to basic services and lack of security of tenure, which results in decreases in health, increased environmental degradation and an appalling in the quality of life. Sustainable, long-term upgrading and urban development solutions must be holistic and multi-disciplinary, utilizing the provision of serviced housing, with security of tenure, as the platform from which to deliver a comprehensive package of essential health and education services and support for livelihood alternatives. Required approaches are two-fold: (i) for established communities that have access to the land upon which their community resides, on-site upgrading to include regularization of the land, introduction of basic services such as water supply and sanitation, and provision of other infrastructure and community facilities; and (ii) for vulnerable squatter communities sited in danger zones, relocation to appropriate serviced land and the provision of integrated urban development solutions with an emphasis on livelihood opportunities.

Marikina City

Fig. 2.3 Map of Marikina City



Marikina is a shoe-making city. As one of the highly urbanized areas in Metro Manila, Marikina City has its share of poor migrants in search of better opportunities. A few years ago, the Marikina River was a favorite site for squatters and was repository of all kinds of waste that gave it unpleasant surrounding and obnoxious smell.

Today, people from all walks of life visit the river park everyday to savor the clean environment and avail of sports and recreational facilities. For the residents of Marikina, their river has become a source of pride and conviviality.

This is the result of the Save the Marikina River Program launched by the local government to restore the beauty and usefulness of the river and transform it into a tourist and the biggest recreational park in Metro Manila. As a result of the transformation, new jobs were created and major investments came in. Collective discipline was instilled among the young and the old who kept their surroundings clean including the riverbanks.

Figure 2.4 – Map of the Philippines showing the location of Metro Manila where the cities of Manila and Marikina are part of the 17 cities.

The respondents were represented by 4 barangays with 100 respondents from each barangay giving a total of 400 respondents for the first set of questionnaires. Ten respondents from each of the four barangays will be selected or a total of 40 respondents for the second set of questionnaires.

2.4 Description of the Sample Barangays

A. District I

District I covers eight areas namely Isla de Balut (Tondo side), Vitas Area, Magsaysay Village, Bario Magsayasay, Central Tondo, North Harbor including Parola and Isal Putting Bato, Dagupan Area West Side of rail road tracks from Recto Avenue to Tayuman Street including Bo. Menu, and all other areas north of Recto Avenue from railroad tracks (Tutuban Station to North Harbor).

In this study, District I is represented by Barangay 79 and Barangay 62. Barangay 79 has a total population of 1,951 people as members of 403 household. There are 18 food establishments in this Barangay.

Another area selected in District I is Barangay 62.

B. District II

The enlisted area covered by District II is M. L. Quezon, L. Avelino, Ponce, and G. Del Pilar. In this study, District II on the other hand is represented by Barangay 201 and Barangay 182. Barangay 201 covers the boundaries of Hermosa on north, Morong on east, Molave on west, and on south Limay Abad Santos. This Barangay has a total population of 3,500 people as members of 3,500 household. There are 200 Business Establishments were found in this Barangay.

Another selected area in District II is Barangay 182 which covers the boundaries of Hermosa Street in the north, Benita Street in the east, Fernandez street in the west and River side in the south. This Barangay has a total population of 11,000 people as members of 550 household. There are no Business Establishments found in this Barangay as well as Health Centers and Hospitals.

C. District III

District III covers the areas of Gomez and Guevarra. In this study, District III is represented by Barangay 272, Barangay 274, and Barangay 276. Barangay 272 covers the boundaries of Del Pan corner Bagong Pag-asa Street on north, Camba corner Clavel on east, Penia Rubia corner Madrid on west and on south, Del Pan corner Penia Rubia. This Barangay has a total population of 3,200 people as members of 290 household. Sixteen (16) Business Establishments were found in this Barangay.

Another selected area in District III is Barangay 274 which limits C.M. Recto, Angalo, Recuerdo, and Clavel prior to north, east, west and south respectively as boundaries covered. This Barangay has a total population of 20,000 people as members of 350 household. There are 20 Business Establishments found in this Barangay.

Barangay 276 also is one of the areas covered by District III. This Barangay has 15,000 people prior to the total number of population as members of 800 household. Eight (8) Business Establishments were found in this Barangay.

D. District IV

The areas covered by District IV were Albert, Aldana, Burgos, L. Geronimo, and Legarda. Two Barangays were represented by District IV, these are Barangay 514 and Barangay 579. The first Barangay covers the streets of Crisostomo, Ibarra, Sisa, Laon Laan, Instruccion, Basilio, Maceda, And Dapitan. This Barangay has a total population of 7,000 people as members of 2,907 household. Forty seven (47) Business

Establishments were found in this Barangay. Barangay 579 on the other hand covers the streets of Vigan, Buenos Aires, Ramon Magsaysay Boundary and P. Pelaez. The total number of population found was 3,000 people as members of 1,000 household in this Barangay. The number of Business Establishments found in this Barangay is 150.

E. District V

District V covers three areas namely M. Roxas, J. Lukban, and Sikat. Barangay 674 and Barangay 673. Business Entrepreneurs, Government employees and Private employees are the main source of income in this District.

F. District VI

District VI is represented by Barangay 905 and Barangay 844. Barangay 905 is one of the pilot Barangays in the city of Manila. More or less 10,000 people are the total population of this Barangay as members of 1,500 household.

Barangay 844 has 41% of the population with sari-sari stores as source of income.

2.5 Subjects and Sample

A total of almost 1,100 respondents answered the first set of questionnaires and 100 were requested to sit with the interviewers for the focused group discussions as shown in the table below.

Pyramid of the Poor

The respondents belong to the self-employed and entrepreneurial poor.

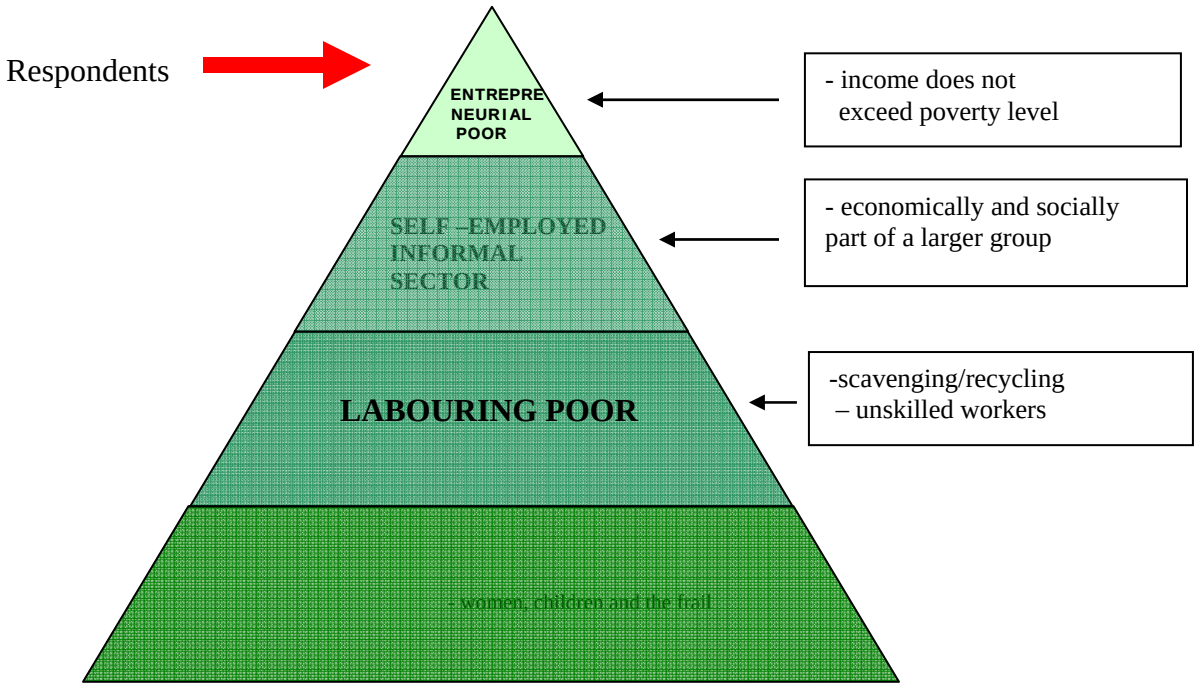


Table 2. 1- Sample Selection by District in the City of Manila

District Number	Barangay covered	Number of households for the first set	Total	Number of households in the final set
I	Barangay 62 and Barangay 79	50 50	100	10
II	Barangay 201 and Barangay 182	50 50	100	10
III	Barangay 274 and Barangay 276	50 50	100	10
IV	Barangay 514 and Barangay579	50 50	100	10
V	Barangay 673 and Barangay 674	50 50	100	10
VI	Barangay 905 and Barangay 844	50 50	100	10
Total			600	60

Table 2.2 – Sample Selection in Marikina

District	Area Covered	Number of Respondents for the first set	Number of respondents for the final set
I-II	Parang, Sto Nino, etc	400	40
Total		400	40

2.6 Procedure

The research methodologies involved in this study involved following processes:

- Literature review of energy policies and situations in the Philippines as reported in Chapter I;
- Adaptation og a globally prepared survey questionnaire to the Philippine setting and its conduct in the selected districts in Manila and Marikina; and

- Qualitative and quantitative analysis of collected data.

Sixty non-formal education teachers (NFE) employed in the public elementary schools of Manila attended three briefing sessions focused on the research overview, instrument revision and finalization, and conduct in depth interviews. After the briefing, these teachers were involved in the data gathering process using two sets of questionnaires. The data were processed using the SPSS and provided pertinent data to address the research questions.

2.7 Instruments

Questionnaire 1

Information sheet and data about the family and their socio-economic status

Two sets of instruments were developed and validated. The first instrument was composed of questions to get the data about the general status of the respondents' family, education of family members, economic status, social status and practices, energy utilization, the kind of energy used, other family practices related to energy, money, and savings. The instruments were validated during the deliberations conducted among the NFE implementers who met twice specifically to validate the instrument for quantitative evidences to address the research hypotheses.

Questionnaire 2

Interview schedule

Another meeting was held to train the group of data gatherers to device an interview schedule for the small group discussions. The tryout of the instrument was done by a small group. The second questionnaire was used to the final 40 respondents. This was conducted through focused-group discussions (FGI).

Techniques applied to gather the qualitative data are focused group discussions (FGD), interviews, case studies, policy analysis, matrices, timeline, gender analysis, livelihood profile, energy services, used, and transect walk.

Training of Interviewers

Role playing and lecture-discussion was used in training the Non-Formal Education Teacher Community Coordinators on how to conduct the interview-schedule and interview of key informants.

CHAPTER III
SOCIO-ECONOMIC PROFILES

3.1 Manila

Respondents and Locale

Interviews were mostly conducted in Manila. There were five hundred seventy respondents, 99.1% were from Manila and 0.9% were from nearby provinces. Among the 570 respondents,74.6% are entrepreneurs 25.1% were not. Most of the respondents were engaged in small-scale businesses.

Demographics

Two-hundred twenty-two (222 or 38.9%) of the respondents were born in Manila, where the study took place;5.3% were originally from Leyte but took their chances in Manila; 4.2% reported Samar as their birthplace. Some of the respondents were from provinces that are relatively near Manila, among these are Bulacan, Pampanga, Batangas Bicol, Pangasinan, and Nueva Ecija . There were also respondents from distant provinces like Aklan, Cebu, Masbate, and Davao del Sur.

Years of residence in Manila

Almost all of the respondents have been staying in Manila for more than 10 years. This infers that the respondents were able to experience changes in the urban area and were able to adequately adapt to their environment.

The respondents have lived in Manila for an average of 29.1066 years. Majority of the respondents have been recorded to have stayed in Manila between 20 to 54 years, practically growing up there. Some of the respondents may have been educated and taught how to cope with the demands and standards of living in the city, this is why they have thought of various enterprises to meet the needs of the community.

Four hundred twenty-four (424 or 74.4%) of the 570 respondents are married while 62 (10.9%) are single. On the other hand, there were 51 (8.9%) who are widowed and 24 (4.2%) who are separated from their spouses. Two (.4%) related that they were divorced.

Most of the respondents have two sons or daughters who are already not yet married; while 96 or 16.8% have three. In general, almost all the respondents have at least one son or daughter who is still single. One hundred fifty-one (151 or 26.5%) respondents conveyed they do not have children who are married yet, while 74 or 13% have one child who is already married. Most of the respondents have at least one son or daughter who is married while only one (.2%) respondent have 12 sons and daughters who are all married.

Number of children

Majority of the respondents has six children or less. One hundred fourteen (114 or 20%) respondents have three children; 96 or 16.8% have two; and 95 or 16.7% have four children. There were 19 (3.3%) who do not have any children at all while only two (.4%) have 12 children.

There were six respondents who have legally adopted children. Two (.4%) respondents reported having one adopted children; three (.5%) have two; and one (.2%) have three legally adopted children. Majority have no adopted children.

Number of family members

Most of the respondents reported having five members of their families (100 or 17.5%). Eighty-six or 15% have four family members and 73 or 12.8% have six. It is not surprising that there were respondents with 10 or more family members since the Philippines is known for extended families and a family is usually composed of aunts, uncles and grandparents in addition to the nuclear family..

Source of income for household repairs

One hundred nine (109 or 19.1%) of the 194 respondents communicated having used their savings in financing major household repairs, while 32 or 5.6% narrated getting funding from other sources. Four point seven percent (4.7%) or 27 relayed that the money spent came from loans made in different associations they are members of. Nineteen (19) or 3.3% relied on work benefits as a source of income to provide funds for the major household repairs.

Home-based enterprises

In home-based enterprise, a total of 143 (34.2%) respondents are into buying and selling or trading food products. Twenty one percent ventured in food production, processing or preservation while thirteen percent have restaurants, carinderias or eateries. These reflect that engaging in enterprises concerning food is a popular choice among the respondents.

In fact, in most communities one can find a number of sari-sari stores and eateries at almost every corner of the streets. In addition, food production, processing or preservation has been an income-generating enterprise since they do not require a big amount of capital; enterprise such as chocolate-making, jam-making and meat preservation are examples.

However, 54 or 12.9% of the respondents are involved in enterprise not concerned with food.
Data on the enterprises that are separate from the household reveal 119 (43.6%) of the respondents are engaged in buying and selling or trading food products; and 55 (20.1%) have restaurants, carinderias and eateries.

Family members involved in the enterprise

One hundred fifty-two (152) or 26.7% of the respondents have only one member of the family directly employed in the enterprise, while 106 or 18.6% have two members of the family working in the enterprise. On the other hand, only 1 or .2% of the respondents has 10 members of the family who are directly connected with the enterprise. Interview revealed that the extent of family member's involvement in entrepreneurial activities is dependent on the kind of business they have and their ages.

Few of the respondents have relatives employed in their enterprise, in fact 16 or 2.8% of the respondents have at least one relative working for them and only 2 (.4%) have five relatives employed in the enterprise. In entrepreneurial activities which necessitate more employees, the respondents employed their relatives to help them economically and to be assured of their loyalty.

Employees in the enterprise

Only 2 (.4%) of the 570 respondents have neighbors as their employees. The data showed that preference to employ neighbors is not a usual practice among the respondents. Based from the interviews this condition is attributed to the extent of business they have. Most of them are engaged in small-scale business.

There were 31 (5.4%) respondents who have employees that are not part of the family. Fifteen or 2.6% have at least employed a person outside the family while only one (.2%) employed six persons. While 6 (1.1%) did not specify who their employees were. As the business becomes bigger, some respondents employed non-family members.

Only 6 or 1.1 percent of the respondents employed other set of employees who are not their family members, relatives or neighbors. Interviews revealed that in businesses where they have to do several activities like buying, re-packaging, serving, and cleaning, more employees are needed.

There were 91 (16.0%) of the 570 respondents who provide their employees with salaries. Thirty-one (5.4%) of the respondents have at least one employee with pay while only one (.2%) have nine employees that they have to pay. The respondents expressed that sense the business is small, they are self-employed and only 91 respondents need to employ and pay salaries to their employees.

A total of 283 (49.6%) respondents do not provide salaries for their workers, partly this may be due to their being family members or relatives where the profit of the enterprise becomes a shared income. Approximately 21% (120) of the respondents have at least one worker that they do not pay while two (.4%) have nine workers with no wages.

Capital for the respondents businesses

Seventy percent (70%) or 400 respondents communicated the amount of capital they allotted to start their enterprise. Seventy-seven (13.5%) had 500 pesos to formally establish their enterprises while 58 (10.2%) with 1000 pesos. Only one (0.2%) respondent used 50000 pesos as starting money.

There were 47 respondents (8.2%) who related that they have a capital of P5000 pesos today in order to keep up with their enterprises, while 32 (5.6%) stated that they have to maintain a P2000 pesos budget for their enterprises to flourish. However, 32 (5.6%) of the respondents remarked that they have to save 500 pesos in order to sustain their enterprises.

The rising prices for the basic commodities and raw materials used for the production of the enterprises may be the reasons why there have been steady increases in the amount of capital the respondents should allot today.

Membership in social organizations

Table 3.1 in *Appendices Section* shows that only 8.8 percent of the respondents are members of social organizations. Interviews revealed that most of the women are busy doing their house chore, or attending to their small business so they do not have time to join such organizations. Other respondents relayed that joining organizations would entail expenses and they prefer to save the money for other family expenditures.

When the respondents joined women organizations varied from year to year from 1984 to 2004 as seen in Table 3.2. It can also be observed that very few respondents seemed to join organizations in twenty years.

The most common reason for joining organizations is upon invitation of respondents' friends.. Others joined because the local officials requested them to attend the meetings and eventually became regular members' already. For the respondents who did not join, the reason was lack of knowledge that such organization existed

Among respondents who are members of organization, there are some who became officers while others remained as members. The officers can institute changes and reforms on policies through their connections with the local government officials. They also acted as liaison officers who assisted their neighbors in solving problems encountered in their communities.

Only 50 or 8.8% of the respondents are members of women's association in their communities, most participated in 1995 up to present. Out of the 50 respondents, 14 or 2.5% are officers of the organization while 32 or 5.6% are active members. This data reveal that over and above the respondents' duties and responsibilities as entrepreneurs and parents they are still potentially able to join different organizations that may promote camaraderie and strong linkages among their community members.

Tables 3.3 and 3.4 reveal that only a small number of respondents are engaged in their neighborhood associations.

Some became members as early as 1982, while others participated only in 2004. Those who chose to get involved are now officers of their associations while 24 or 4.2% are active members.

Tables 3.5 and 3.6 showed that there are several respondents who asserted being part of religious groups in their communities. A total of 49 or 8.6 percent have been joining church organizations since the 1960's while others joined only in 2004. Thirty-two or 5.6 percent are dynamic members while 14 or 2. percent are officers.

Some of the respondents are also members of the Barangay Council (smallest unit of local government in the community).

Tables 3.7, 3.8 and 3.9 showed that 5.8% are involved in their Barangay councils with most of them participating since 2000.

Although most of the entrepreneurs are parents, 5.8% claimed being part of the Parent-Teachers Associations with most of them participating in 1999 up to present. There 1.8% respondents who are officers of the association while 3.2% are members.

Seventeen or 3 percent of the respondents are active in cooperative associations with some joining as early as 1990, however, there were very few respondents who joined in the later years.
Of the 17 active participants, six or 1.1percent attested being officials of the cooperative group while 9 or 1.6 percent claimed they are active members.

Membership in energy organizations

Only one respondent is an active member of an energy association, the membership started in 2003 and the respondent's position was not specified.
This small membership can be attributed to the fact that there are no associations concerning energy that are promoted by the government or the people in the community. Nineteen or 3.3% respondents admitted being members of other organizations that were not included in the interview guide, the names and types of organizations, however, were not specified. Some of them were being active members since 2000. Ten or 1.8% officials of these organizations while 6 or 1.1% are members.

Data on food preparation

Seventy percent eat 3 times a day in their houses and three hundred respondents or 44.3 percent related that they did not change the food preparation for the family. One hundred eight seven (187) or 27.6 percent change their food preparation because of the increase in energy cost.

Family illnesses

It appeared that family illness is prevalent among the respondents' families.
The most common illnesses are coughs, followed by other illnesses like hypertension, heart disease, stomach ulcers, and diabetes, and back pain.

Some illnesses were acquired in the work place like exposure to colds virus, for coughs, and too much stooping for back pains. Stomach ulcers are acquired due to failure to take regular meals because of involvement in selling goods.

The respondents' response on the family members who eat regularly can be ranked as follows: the children, then the mother, and the father followed by the relatives. The helpers and business help appeared not to eat regularly.

Leisure Activities

The report showed that the most frequently engaged in leisure is watching television, followed by viewing movies in movie houses, then outing to interesting places.

Other activities engaged for leisure are games, watching cultural shows and concerts.

Fuel use

The sources of energy as reported by the respondents in their home and enterprise given a time line of before year 2000 after 2000, and 2004, are LPG, kerosene and electricity.
The latter appeared to be the most expensive but are widely used in operating the appliances in the workplace electric mixer, electric fan, washing machine, television, refrigerator, and water dispenser.

Energy Consumption

Tables 3.26, 3.27 and 3.28 showed the different timelines in the cost of energy as applied in the homes and workplace of the respondents. It is observed that electricity is the most expensive of the energy source, followed by LPG and then the Kerosene.

The respondents reported on the frequency of power failure like brownout as follows: when there is a typhoon and once a month. Many respondents experienced no brownout at all. They explained that no one likes to get inside their restaurants if it is dark, so they have to buy generators. Others could not go on with their businesses when there was power failure like using the mixer, using the food heater, and other electric operated gadgets. Industry is very much affected and caused low income.

Most respondents found that they experienced no calamity yet in relation to their business. This was due to the location and built of buildings or structures for their business. Most of their building structures were made of concrete materials and steel. Others reported that shocks for their business were caused by typhoon, fire, a demolition group, and robbers who forced open their windows, door, or walls. These conditions have adverse effects on their finances because they have to spend for the repairs of the destroyed parts of the house.

Another shock in the family affecting the enterprise is that those who have work can be laid off from their jobs. Due to the rising cost of energy, the prices of goods also increase, thus the owners of business enterprises have to retrench employees. Those who have been laid off were forced to go back to poverty.

Some respondents were aware of the existence of committee on energy which could assist them in their problem concerning energy. On the other hand, majority of the respondents have no knowledge at all of the existence of this committee.

Energy distribution

The respondents revealed that the energy distribution responsibility is placed on different institutions as ranked. 1- government, 2- private entity, 3- dealer of gas and gasoline, and 4 – cooperative.

Environmental protection

Environmental protections are provided by several sectors as ranked by the respondents. First is the proper disposal of garbage, 2- health service like fumigation, free vaccination and consultation, 3- fire brigade assistance,4- low-cost wholesalers, and 5- maintenance of public toilets for healthful disposal of human waste.

Television appeared to be the number one source of information about energy knowledge followed by the radio.

3.2 Marikina

Locale

There were 422 or 96.6% respondents interviewed in Marikina City. One hundred thirty seven (137) or 31.4% are entrepreneurs while 271 or 62% are employees. Of the 137 entrepreneur respondents, six (1.4%) are engaged in the shoe-making business; 4 (0.9%) are in producing slippers; 8 (1.8%) are into bag-making; 4 (.9%) are retailers of leather goods; and 98 (22.4%) are into businesses other than bag or shoe-making. Marikina City is recognized as one of the highest producers of leather goods in the Philippines. These goods are made for export and local distribution. Most of its residents are employed in the bag and shoe-making business. Some even have small-scale enterprises of manufacturing the same products but are limited to distributing their goods to the local market.

Profile of the Employees

A total of 102 respondents or 23.3% have members of the family working in the home-based enterprise. There was one respondent who relayed that 11 members are actually engaged in running the business, however, majority of the respondents have one (8.7%) or 2 (36%) family members working in the enterprise. On the other hand, 15 or 3.4% related that they have relatives working in the enterprise. Nineteen or 4.3% attested that their employees are not in any way related to them.

In terms of the employees' salary, 53 or 12.1% recounted that they pay their employees while 82 or 18.8% reported not providing their employees with salary, this group may have family members as employee's thus not allocating money for the wages.

Profile of the Home-Based Enterprise

A total of 126 respondents gave an account as to when their enterprise started, most of the respondents, 25 or 5.7% related starting their enterprise last 2004. While 28 or (6.4%) started in 2002 and 2003.. Some of the respondents started their businesses between 1964 and 1980. They also recounted the amount of capital they allotted to start their enterprise. Twenty respondents or 4.6% started with 5000 pesos while majority of the respondents started with a capital of not lower than 5000 but not higher than 150000 pesos.

One hundred or 22.9% respondents communicated that they have a capital of 10000 today in order to keep up with the enterprise, while 10 (2.3%) have to maintain a budget of 20000 for their enterprises to flourish.

Profile of the Respondents

Majority of the respondents, 177 or 40.5% of the respondents were originally from Marikina City while the others were born in Bicol, Camarines Sur, Manila and Rizal. Some of the respondents were born in the distant provinces of Capiz, Sultan Kudarat and Baguio. There were 23 or 5.3% who reported having stayed for 30 years in Marikina. While a number of the respondents communicated that they heve been living in Marikina for not more than 83 years but not less than 31 years, while the others conveyed that they have just lived in Marikina for not more than 10 years. These pieces of information reveal that the respondents have established enterprises in Marikina. Some of them may have had tried their luck upon arriving in the city.

Three hundred two (302) or 69.1% of the respondents are married while 72 or 16.4% are still single. There were 31 or 7.1% who are widowed while 8 or 1.8% are separated from their spouses. Engaging in enterprises is not necessarily affected by one's civil status. With regard the respondents' children, there were 62 or 14.2% who revealed having a child but reported not having a spouse, while 73 or 16.7% have two children. There were 43 or 9.8% married respondents who communicated having two children while a respondent stated having 9 children.

When asked regarding the number of family members, 75 or 17.2% stated having three. While 69 or 15.8% have two members of the family. Only one respondent communicated having 11 members of the family.

There were also inquiries regarding adopted children, seven or 1.6% respondents having one legally adopted child, while one reported having four. In terms of adopted children without the necessary documents, one respondent informed the interviewer of having adopted three children without the legal papers to support the adoption.

Majority of the respondents, 82 or 18.8%, have four members of the family. One respondent was reported having 20 members of the family. This is not a surprising piece of information since most of the respondents have extended families and only a number have nuclear families.

The Family Members

There were 424 respondents and 278 (16.3%) of them are married. Most of the respondents have an average of three children, while only three respondents indicated having nine children. There were 32 (1.9%) of them who accounted having their in-laws living with them while 96 (5.6%) reported having others (relatives and friends) living with the family during the interview.

The ages of the members of the family ranges from 1-85 years old, however, family members aged 70 years and above were relatively lower in frequency than those who are between 1 – 50 years

old. Generally, there are more female members of the family (756 or 44.4%) than male members (690 or 40.5%). All in all relevant pieces of information were gathered from 1446 or 85% people, the respondents and their family members. While some 256 or 15% did not give the necessary information when asked about the family's profile.

There were 350 (20.6%) respondents who stated that they are high school graduates while 243 reported earning college degrees. However, there were 45 respondents who communicated not having any formal schooling at all. There were three respondents who accounted having dropped or stopped from schooling.

The Family's Source of Income

Two hundred sixty (260) or 15.3% of the respondents depend on their home-based enterprise as their main source of income while some 149 or 8.8% are employees in offices and schools. There were 26 or 1.5% who communicated relying on overseas job opportunities as their main source of income. There were nine respondents who rely on farming, while five on fishing. Lastly, there were four who are into poultry and livestock raising and 214 (12.^%) did not indicate the family's source of income.

Three hundred forty three (20.2%) of the respondents imparted that they are full-time employees/business entrepreneurs, while 40 admitted being part-time. Majority of the respondents earn not less than 24,000 but not more than 144,000 pesos in a year as a family.

Profile of the Respondents' House

When asked regarding the materials used for the construction of their roofs, the respondents' generally reported using strong and sturdy materials, this was the same information gathered when asked about the quality of materials used for their walls. Two hundred nineteen (50.1%) described the size of their houses as small, while 97 (22.2%) reported that their houses are considerably large compared with the other houses in the community. Only 95 (21.&%) stated that their houses are average in size.

In terms of the major home repairs, 105 (24.2%) admitted having their houses consistently checked and repaired while some 311 (71.2%) communicated that their houses did not undergo any major repairs. With regard the amount allotted for house repairs, 37 or 8.5% related having a budge of not more than 5000 pesos while some 25 or 5.7% reported consuming 51000 pesos or more for house repairs alone. When asked where they obtain the budge for the house repairs, 72 or 16.5% reported using their savings, while 10 or 2.3% related that house repairs are part of the benefits of their jobs. There were 16 or 3.7% respondents who stated that they rely on other sources of income for the house repairs.

Three hundred ninety-one (391) or 89.5% accounted that they are dependent on the pipes from the community as their sources of water. There were, however, 18 or 4.1% who reported using the faucet used by neighbors. With regard the type of toilet the respondents use, 391 or 89.5% reported using toilets installed inside their houses that are flushed. Only 17 or 3.9% use toilets located within the backyard that also can be flushed.

In terms of the availability of electricity in the community, 414 (94.7%) relayed that they are able to benefit from the supply of electricity in the community, while only four respondents did not. With regard to the question whether there are light posts in the streets of their communities, 415 (95%) accounted having light posts. The source of electricity for the light posts is basically from the government as accounted by 306 (70%) of the respondents, while 105 (24%) admitted that the source of electricity is from private community residents.

A total of 382 or 87.4% respondents reported using electricity in their household appliances while 34 or 7.8% admitted having appliances that are not dependent on electricity. When asked about the reasons why electricity is not used in their appliances, 46 or 10.5% reported that the use of electricity is too expensive and the family may not be able to afford paying it if all the equipment and facilities inside the house will use electricity.

Three hundred thirty (330) or 75.5% use LPG or Gasul as their main type of fuel for cooking, while 48 or 11% use gas or kerosene. Only a small portion of the respondents use electric stoves, wood and charcoal for cooking. Majority of the respondents started using these fuels for cooking in the 1990's. Three hundred two (302) or 69.1% of the respondents reported that using fuel for cooking did not darken their kitchen ceiling and walls.

Household Appliances of the Respondents

Majority of the respondents have television sets, radios, gas stoves, electric fans, living room sets, bedroom appliances, cabinets, and dining room sets. A small portion of the respondents reported that they have farmlands, electric stoves, jeepneys, cars, and bicycles. Most of the appliances were acquired from 1980 up to 2004. The average amount of buying the appliances and equipment were not less than 2000 pesos but not more than 300,000 pesos.

Financial Status of the Respondents

Two hundred ninety-two (292) or 66.8% of the respondents reported not having any savings at all while 124 or 28.4% admitted that they were able to save money. Among the 124 respondents, 71 or 43.6% relayed saving money for their children's education, while 60 or 36.8% for medical needs. There were 87 respondents who communicated saving in banks while 37 reported keeping their savings in their own homes. A small portion put their savings in cooperatives and 'paluwagan.' At present, majority of the respondents reported having savings amounting to not less than 10,000 pesos but not more than 200,000. Few respondents have savings below 10,000 pesos.

The respondents (132 or 37.6%) seek help from their relatives in times of need. Sixty-one or 17.4% rely on their parents for financial support while 40 or 11.4% depend on their children. Some respondents relayed asking for financial help from their organizations, neighbors, micro-credit financing, friends and others. When asked how much interest is being added in their debts, 26 or 5.9% admitted that having 20% interest in their debts, while 23 or 5.3% with 10%.

With regard the mode of payment for the debts, 19 or 4.3% reported paying their debts daily, 19 or 4.3% weekly and 29 or 6.6% monthly. With regard the amount they borrowed, 53 respondents admitted borrowing 1000 pesos, while 31 borrowed 5000. A small portion of the respondents borrowed money more amounting to more than 5000. When asked how much they pay for it daily, seven respondents pay 1000 pesos everyday, 18 respondents pay more than 50 but not less than 2000 pesos every week, and 10 pay more than 200 but not less than 5000 pesos every month.

The reasons for borrowing money are for medical reasons for 159 respondents, payment for water, electric and house bills for 121 respondents

Budget Appropriations

Aside from the money set apart for food, the appropriation for the education of the respondents' children is very much prioritized with a mean of 1365.82 pesos. The money allocated for the other expenses such as for the electric bills and house rent got a mean of a little over 1000 pesos, while the others; fuel, water bills, telephone bills, groceries, medicine and for leisure activities got average amounts not exceeding 1000 pesos. In addition, based on the responses, the total household expenditures got a mean of 11,596.92 this means the respondents in general spend about 12,000 pesos a month to cover all the needed financial obligations.

Membership in Organizations

Nine respondents are active in Women's Organizations with one of them becoming the organization's officer; 22 are active in Church Organizations; five are members of Community Organizations; five are in the Barangay Councils; five are members of Cooperatives; 17 are members of the Parents-Teachers Association; while there were five who did not specify to which organization they belong to.

Food Consumption and Leisure Activities of the Family

Two hundred fifty-six (256) or 58.5% respondents reported cooking three times a day; 94 or 21.%% accounted cooking twice a day; and 31 admitted cooking five times within a day. Two hundred eighty-two (282) or 64.5% of the respondents' families eat three times a day and 64 or 14.6% accounted eating only twice a day. When asked to compare the number of times cooking last year with this year, 268 (61.3%) consistently answered preparing and cooking food three times a day while only 37 admitted cooking their food five times a day. With regard to the number of meals per day last year, 279 or 63.8% accounted eating three times a day. The above information is not surprising in terms of the respondents' comparisons since 227 or 41.2% accounted not having changed the number of times they cook and consume their meals. When asked regarding who regularly consumes the food prepared, almost all the participants related the meals were eaten by all the members of the family.

In terms of the family's leisure activities, 316 or 78.2% usually watch television. and see this as the family's main recreation activity.

On the other hand, when asked whether family members get sick, 242 or 55.4% accounted having sick family members, the usual diseases or illnesses of the family members are, colds and cough; lung diseases, backache and others.

Energy Sources for Income

Two hundred fifty nine (259) or 43.7% respondents reported using kerosene as their main energy source while 113 use electricity. Two hundred sixty-one (261) or 44% use fuel for cooking because this is their main source of income. On the other hand 350 or 59% use LPG for cooking the meals for the family.

The main sources of energy according to the respondents are the government (253 or 44%) and from private suppliers (207 or 36.3%). With regard the frequency of brownouts, 130 (29.6%) confirmed that this is not a problem because there are no brownouts in their areas; 115 (26.2%) related that brownouts occur once in a month.

Lastly, in terms of where they are able to get information on energy sources, 352 or 36.3% recounted being informed through media specifically the TV; 261 or 26.9% through the radio and 244 or 25.1% from the newspaper.

Enterprise that is separate from the household

Data on the enterprises that are separate from the household revealed buying and selling or trading food products; and operating restaurants, *carinderias* or eateries.

Relatives Involved in the Enterprise

Few of the respondents have relatives employed in their enterprise. In entrepreneurial activities which necessitate more employees, the respondents employed their relatives to help them economically and to be assured of their loyalty. Also, wages can be waived in times of crisis or can be delayed until there is financial stability.

Profile of the Employees

The respondents reported that the employees in their business are the family members, relatives, and their neighbors. A few attested that their employees are not in any way related to them but have shown loyalty and dedication to service hence, the business staff is like a big family.

Interviews revealed that in businesses where activities involve buying, re-packaging, serving, and cleaning, more employees are needed. Sometimes shifting of employees is practiced for health reasons and also to avoid inside job for small or petty thief and stealing.

Salaries for employees

In terms of the employees' salary, Most of the respondents reported giving regular salaries to their employees while others do not give. The latter is due to having family members as partners in the enterprise. Food business just provides the meals for the family members as their earning plus some pesos for the family savings. Most family business use their income jointly to finance the basic necessities in life like payment for electricity, water, food consumption, health expenses, school expenses and other relevant expenses.

3.3 Results of the focus group discussion (FGD) among men

Participants pointed out the following realities:

- In discussing energy, we have to take note that sources are already in place. What is needed is how to improve its utilization.

- The government cannot operate the Bataan Nuclear Power Plant to address the energy crisis faced by the country that is dependent on the importation of fossil fuel as its major source of energy. The facilitator explained that the Bataan Nuclear Plant received tremendous protest from the public because of the great danger it poses to the lives of the people and the environment in case of accident or leaks. It should be noted that it uses plutonium as fuel, she added.

- To compel the government to address the current energy and economic crises, maybe, they just join the demonstrators and strikers who have been clamoring for democratic solutions and qualitative societal changes. If demonstrations and strikes get wide support from the public maybe that would push the government to really do something to address the on-going crisis. Most of the participants nodded in agreement.

The participants' profile is shown in Table 3.38 (Appendices)

Topics discussed during the FGD

1. Energy Sources and Services
2. Perception and attitude on or before the energy crisis
3. Water supply and sanitation
4. Spending Pattern in the Household
5. Relations of Men and Women in the Household
6. Percentage of energy expenses over gross household expenses
7. other sources of energy, especially for cooking and boiling drinking water
8. energy saving tips
9. sources of information on energy
10. perception on the role of institutions in the provision of energy

Energy source and services in the household

To bring the discussion to the personal experiences of the participants, the facilitator asked them about the type of cook stove they use in their homes, their reason for choosing the particular cook stove they would use, how they are accessed and at what cost. Their responses are tabulated in Table 3.39:

Some of the respondents explained that they do not usually cook during lunch except on weekends when most of the family members are at home. During weekdays, most of the cooking are done in the morning and at night. One participant use electric rice cooker and LPG as well.

Participants said they sometimes take the effort of giving a hand in cooking but their wives take on the responsibility of cooking. Two participants do not cook at all but one said his family gets food from his in-laws who manage an eatery.

Some participants using fuelwood and charcoal get their supply from their farm outside Metro Manila on weekends or once a month. Others use used wood wastes from crates and thrown-away wooden construction materials.

As to other household appliances and equipments, three claimed they have electric iron, electric fan, and washing machine; three participants said they have a computer unit, and one participant said he has an air-conditioning unit but uses it only occasionally.

Electricity is the main source of power in their houses. Electric bill ranges from Php500 to 1,800 depending on the number of appliances, frequency of cooking and household size.

Responses to Economic Crisis and High Cost of Energy

Due to economic crisis manifested by the rising cost of energy and prime commodities, adjustments in the way of living were made such as:

1. ironing of clothes is minimized, mostly for work clothes and school uniforms
2. scheduling of TV viewing; lights not in use are turned off. One family who used to have two refrigerators, now uses one only.
3. some appliances are operated one at a time to reduce consumption, e.g. turning off the television when ironing clothes
4. some skip breakfast or snack or at times both.
5. some resort to buying cooked food to save on LPG, especially after 8:30 in the evening when most fastfood centers would sell cooked food at 50 percent discount.
6. others use LPG stove alternately with stove using cheaper fuel e.g. kerosene stove
7. cut down expenses on luxury items, R & R; spends only on the very basic needs of the family like education, payment of electric and water bills
8. widespread illegal connection of electricity. All agree it is tolerated and somehow supported by the community. They reasoned it is the people's response to the continuous rise and onerous electricity rates. Whenever a MERALCO representative comes around, a runner would go around the community and advise them to be on guard.

The participants all responded on the negative when asked about buying of new appliances at the time when energy costs increased. With their meager and irregular income, they cannot afford to spend on appliances. Their income is not even enough to support the basic needs of the family.

While they do not have problems on the energy supply or services, as power failure or "brown out" now occurs very seldom, they still cannot say they are happy and contented because the cost of energy consumption is getting alarmingly high and too burdensome for them.

What the participants complained about is the quality of drinking water from the NAWASA, Metro Manila's only water service network. Such, they said, impact on their well-being (because drinking water is unsafe) and on their finances (because they had to buy bottled water which is also equally expensive). Others, however, cannot even afford to buy bottled water, thus, leaving them no option but to use water direct from the faucet. They said, sometimes they boil water, especially during epidemic, or to save on fuel oftentimes they do not boil. Water-borne disease is high in the country. Every hour 24 persons die from diarrhea.

The participants also cited as a problem the shortage of water supply. They said they had to be up at dawn to wait for the water to trickle down from the faucet so that they can collect water for cooking, washing, bathing, etc. In spite of this condition, still their water bill reaches Php600 to 1,200 per month. To save water and cut down on water consumption, water used for laundry is re-used in watering the plants or cleaning and flushing the toilet.

When the participants were asked what could be the reason for the shortage of water supply, they pointed out the illegal logging activities in the watersheds of the La Mesa dam as the culprit. La Mesa dam supplies water to Metro Manila residents. They also cited the recent landslides that killed several hundreds people as an indicator of the denudation of the forests which are unfortunately located in the watersheds of the La Mesa dam.

Water bill ranges from Php600 – 1,200 monthly. They said they really find the cost of electricity and water consumption nowadays very costly and very hard to maintain when before the crisis both services were quite cheap and affordable but even before the financial crisis the participants already live in difficult situations.

Household Budget Priority

Women manage the budget for the family but decisions on budget allocation/spending is shared by both husband and wife. Participants unanimously identified the following budget items in their order of priority:

1. Food and LPG/fuel
2. Education (uniforms, school supplies, school fees)
3. Electric and water bill
4. House rental
5. Communications (specifically electronic load/pre-paid cards)

Most of the participants claimed they do away with luxurious spending such as watching movies, going out of town for pleasure, even buying clothes.

Participants knew no women technicians in the community for electrical repair service.. Electrical connections and repair work is mostly handled by the husband although some women do simple household repairs.

When asked about a new and affordable cook stove with less smoke emission, which stove inventors, commercial centers and APPROTECH Asia promote, the participants responded that they will only decide if they see it and find its practical use. Basic considerations for choosing the cook stove for household use are: easy ignition, time and fuel-saving, clean and affordable and heat efficiency. One participant prefer gas stove due to its maximum efficiency level. Participants prefer cook stove using affordable and continuously available supply of fuel.

Name	Job/Occupation	Civil Status	Family member	Remarks
Lolita	Works in the School Canteen as seller	widow	4	All members of the family are no longer in school
Rosita	Operates an eatery	Single parent	5	Used to be a cooperative member
Rosanna	Operates an eatery		6	Cooperative member
Rosita	Operates an eatery	married		Husband is a retired teacher
Gloria	Operates an eatery	married	4	Husband unemployed
Puring	school canteen cook	Married	6	Husband is paralyzed due to stroke
Ana	Operates an eatery	Single parent	3	Access credit from loan sharks

3.4 Results of Focus group discussion (FGD) among women engaged in micro-enterprises

The FGD involved women participants who are engaged in micro-enterprises.

				(locally known as 5/6 or credit from *bombay*); her children no longer go to school because she cannot support their schooling. Her eldest child takes care of the younger children while she is out working in the eatery.
Rose	Manages family business (bakery)	married	4	Husband is the baker
Jemichelle	Manages family business (eatery)	Single		Member of a entrepreneurial association providing them training and credit facility

Baby	Operates an eatery	married		Access credit from loan sharks
Cora	Operates an eatery	married		Access credit from loan sharks

Table 3.39 FGD women participants' profile

Topics discussed:

1. Sources of energy used at home; energy service provider, energy powered household appliances
2. Comparison of life today and five years ago especially in terms of income vs. expenditure
3. Hygiene and sanitation at home
4. Spending pattern at home and budget priority
5. Female participation in repair works at home

Table 3.40 shows the household cooking stove used by participants. Participants revealed that when prices of LPG started to rise in 2004, they began to also use wood or charcoal to lessen their expenses as shown below:

Table 3.40 Cooking Stoves used by FGD participants

Appliance	User	Access	Basis for Preferences	Other Comments
LPG Cook Stove	All participants	Service provider can be easily accessed; PhP370-380/tank	Easy to operate, clean; cooking is faster	Combined with kerosene or charcoal stove as alternative
Kerosene stove	One participant	Available at stores and gas stations nearby	Affordable at (PhP29 per liter)	Before they use gas stove but switched to kerosene when prices of LPG increased.
Charcoal stove	one	Available in the market and in variety stores	Affordable and convenient for grilling (PhP5 per small plastic bag)	All the other participants use charcoal stove only for grilling
Wood fuel stove	one	Free; discarded wood	Free	Combines with kerosene stove

One significant finding was that the poor pay much higher cost for fuelwood, charcoal and kerosene because they buy in small quantity. Retail prices are five (5) times more expensive than buying in bulk such as big bundle of fuelwood good for one month supply, a big sack of charcoal or 5-galloon plastic container of kerosene instead of buying small bundle of fuelwood, small plastic of charcoal or a bottle of kerosene goof for one cooking or one day consumption.

Electric bills ranged from PhP500 – 2,800 for households, PhP3,300 – 5,000 for commercial establishments. The price has increased twice as much as 5 years ago. It is usually the wife who pays the bill although some participants say their common practice is that whoever is available to pay pays the bill taken from the father's income or whoever earns in the family.

The following are problems on electricity and water supply or services, including availability of spare parts for electric connections and gadgets:

- Power supply is not a problem. The problem lies on the very high rates on energy consumption. The electric company (MERALCO) is controlled by a huge private company. There is no other company that competes with it.

- Water supply is a problem. They are always confronted with shortage of water supply and poor quality or unsafe drinking water. When there is shortage and water coming out of the faucets are not clean, thus unsafe for human consumption, they buy bottled water which is sold in water stations found at every corner of the street. Bottled or purifying water stations are lucrative businesses that mushroomed after the health report that warned metropolitan Manila residents of high incidence of cholera, diarrhea, hepatitis and other bacterial and viral diseases in slum areas and among street food vendors. Purified water is quite affordable when calculated on a daily basis but when summed up in monthly consumption it is expensive. Accumulated bottled water consumption for an average family size of 6 is no less that Php50.day or Php1,500/mo. In fact, only two among the participants, use bottled water most of the time. Those who cannot afford it had to rely on what

they can collect from their faucets. They do not boil water all the time because cooking fuel is expensive and time-consuming. In other areas, water supply comes in trickles or none at all for over 6hours a day. For those who wants to have ready water supply for the next day, they have to patiently wait for the water to come at night or in the wee hours of the morning.

- Fuel for cook stoves (LPG, kerosene and charcoal) are readily available, They can be bought in nearby stores, market, gas stations. LPG wholesalers deliver their wares through their delivery trucks through phone calls. However, there are LPG gas tanks that are not full or less in weight but the consumer has no means to measure it. The only gauge is the number of days of consumption taking into consideration the average use of the gas for cooking or boiling water.

- Cook stoves using fuelwood are readily available but these are the traditional ones. They say they are not aware nor have access to new and improved cook stoves that are cheaper, clean, and smoke-free or with less smoke-emission. They also say that saw dust and rice hull are hard to find in the city. They think it is not practical for them to use cook stoves using sawdust and rice hull for fuel.

The participants all agreed that life is extremely very difficult nowadays, and that no matter how they find ways to make both ends meet, still they said they feel all these are inadequate. Many of them wants to go into business but those who have capital do not know what to business to engage in. Some have the business sense but do not have the capital. There are NGOs that train entrepreneurs and government agencies providing assistance for training and seed capital but those that fear to lose or go bankrupt prevents them from going into business. The best business is food processing, catering service, food preservation and food trading, all of which require energy for preparation and transport. They feel there is no more hope for them to improve their lives. Food business is found in every street in the city, 24 hours a day.

Coping with the economic crises

The following are the actions and adjustments the participants did to cope with the economic crisis:

1. Three participants availed of cooperative loans offered by a credit cooperative located nearby. Credit cooperatives offer lower interest rates and better terms of payments plus other incentives such as provision of entrepreneurial skills training. One participant said her membership was denied due to age requirement. Members are covered by insurance, thus, the age requirement is strictly imposed.

2. A participant said that at one time the government through the Department of Social Welfare and Development (DSWD) offered them a small amount of (P 1,000.00) credit assistance through the barangay.

3. Most of the participants seek credit from an Indian national (or the “Bombay”), who goes around offering micro-credit or financing. Those in the informal sector are major clientele. The lender is easily accessible but demands 20% interest rate per week. Locally, it is called 5/6. For every Php5 one pays P1 interest per week, thus, for every Php100 loan one pays 20% interest a

week. Most of the participants availed of this scheme especially the street food vendors. Their problem is that they get tied down to the system especially when business is not earning much and prices of commodities are high. Their daily income goes to payment for loan daily so that they had to re-loan every week to keep their life and business afloat..

4. Jemichelle's business includes not only an eatery. The family has other businesses which are managed by the family members. Their business is categorized as small-scale. Jemichells said her father sought membership in the Center for Small and Medium Scale Industries. Their membership allowed them to avail of financial assistance, entrepreneurial skills training and even technical assistance e.g business planning, etc. She said they can even avail of loan up to three times the amount of their savings/shares in the cooperative. They also receive dividends annually. This credit facility gives them a relief in harder times, she shared.

5. Conservation of energy consumption, i.e., minimizing the ironing of clothes, or turning off other appliances when not in use is a major energy saving tip.

6. One participant said she uses one refrigerator although she used to have three.

7. Air-conditioning unit of one participant is switch on only when the weather is very hot or only at night and turned off at dawn

8. In one participant's eatery, to maintain their selling price, they had to find ways where they can cut down on expenses like reducing the quantity of food serving, buying lower-quality ingredients, and reducing energy consumption.

9. Some households use illegal connection to reduce cost or avoid paying of electricity.

CHAPTER IV

GENERAL RESULTS

The discussions in this chapter will prove or disprove the hypotheses based on the summary of results as discussed.

The respondents revealed that most of them migrated from far provinces in the Philippines to Manila and Marikina to look for better means of livelihood. However, they landed living and working in depressed urban areas. Nevertheless, because of industry and hard work, they finally identified small-scale businesses which were mostly home-based.

Results of the FGD also reveal that relatives from the provinces migrate to Manila for employment. They would bring with them rice, vegetables, fruits and dried fish.

Almost all of the respondents have been staying in Manila and Marikina for more than 10 years. Most of the respondents in Marikina were born in Marikina but majority came from different provinces as well.

The aforementioned situation infers that the respondents were able to experience changes in the urban area and were able to adequately adapt to their environment. Some of the respondents may have been educated and taught how to cope with the demands and standards of living in the city that is why they have thought of various enterprises to meet the needs of the community. It is worthy to note also that poor families have small farms outside Metro Manila where they get their fuelwood, charcoal and food supplies

4.1 Hypotheses 1

Clean and affordable energy services are important for good physical well-being and productivity issues related to energy and productivity of household members.

Clean and affordable energy services contribute positively to the respondents' health, well-being and productivity. Absence of good electricity and sanitary water for example brings sickness and diseases, and this affects productivity and even attitude of the urban poor towards work, people and the environment.

Smoke in the kitchen

The kitchen is usually located at the back of the house. The stoves are located in an enclosed kitchen. The LPG stoves appeared clean with no traces of black smoke. On the other hand, the kerosene, charcoal and fuelwood stoves emitted black soot which made the walls and ceilings,

cooking utensils and hand towels, black and dirty. There are more houses in Manila with dark ceilings in the kitchen than in Marikina.

Both the rich and poor claim that rice cooked in fuelwood or charcoal tastes better than when cooked in rice cooker. Thus, there is always a dirty kitchen or fuelwood or charcoal kitchen at the back of the house, most often attached to the main house but sometimes separate from the main house.

To save on electricity, people use charcoal stove to boil meat, grains and beans for stew and soup.

Meals

At present, more than half of the respondents cook food at home three times a day to save money. Almost, the same percentage of the respondents who are employed buy cooked food from street vendors, restaurants and eateries to save on energy and time for cooking, marketing and washing cooking and eating utensils, water consumption and find more time to rest and for leisure. Usual food servings include rice, fish or meat and vegetables. Most of the respondents are meat eaters.

Water Supply and Sanitation

Water and energy are expensive in these poor communities. Residents pay 4 to 5 times the cost of water from retail dealers than the metered connection. A 5-galloon plastic water container costs from Php5 to 20 depending upon the delivery services and the distance from source.

The respondents reported they are dependent on the pipes from the community as their source of water supply. There were those who reported using the faucet shared with neighbors. With regard to the type of toilet the respondents use, they reported using water-sealed-flush toilets installed inside their houses while others use toilets located within the backyard that use water for flushing.

Some respondents are connected to piped water of the National Waterworks and Sewerage Authority (NAWASA).

Communities with difficulty of getting steady supply of water use booster pumps to get more water from the pipe, hence, depriving neighbors without it to avail of the water supply. There is a policy that prohibits the use of booster pump but yet many households use it. Booster pumps use high pressure and when the pipes are old the dirty water in the canal is sipped into the pipes. In this case, the water should be boiled for drinking. An incident of an epidemic of E. coli was experienced in two succeeding years in one of the communities in Manila. Tens of children and adults landed in the hospital for cholera and dysentery.

Due to high incidence of parasitic, water-borne diseases, typhoid fever, hepatitis, among others, hand washing before and after eating and after using the toilets is a habit taught to children at home and in school. Some respondents learned to make soap and hand washing liquids and use them for personal hygiene.

Health

It appeared that family illness is prevalent among the respondents' families. The most common illnesses are diarrhea, coughs, pneumonia, TB, followed by other illnesses like hypertension, heart disease, stomach ulcers, and diabetes, and back pain. Some illnesses were acquired in the work place like exposure to colds virus, for coughs, and too much stooping for back pains. Stomach ulcers are acquired due to failure to take regular meals when too much involved in selling goods.

Working days

When family members involved in business is ill, he/she continues to work because especially when the business is home-based because daily expenses and monthly bills are dependent on income. Sick members of the family do not usually consult a doctor because the consultation fee is too high that they do not have enough amount of money left from their daily wage or income to buy the prescribed medicine. Self-medication is then practiced on coughs and colds, body pains, and other common illnesses even if they know it is symptomatic of a more serious health problem.

Environmental Health

Environmental protection programs are in place according to the order of mention, proper disposal of garbage, health service like fumigation to prevent dengue, free vaccination for polio and immunization for young children and infants, free health consultation, fire brigade assistance, low-cost wholesalers of medicine and food, and maintenance of public toilets for healthful disposal of human wastes.

Segregation of biodegradable and non-biodegradable wastes is practiced in most of the communities where the respondents live. Biodegradable wastes are made into composts or placed in plastic bags and given to the garbage collectors early in the morning. Glasses, paper boxes, plastic containers, bottles and tine cans are returned or sold to the factory.

The *Linis Ganda* or Clean and Beautiful Program of the Barangays or villages facilitates the proper disposal of wastes through education campaigns on reuse and recycle, conducting livelihood trainings, providing support to junk shops and push cart buyers of paper, bottles, plastic containers, empty cans, among others. The *Linis Ganda* vehicle picks-up the recyclable materials from the junk shops and delivers this to the processing plants. Women's organizations in subdivisions provide training to domestic helps on waste segregation at source and management of wastes. *Linis Ganda* program is a recipient of the UN 500 Roll of Honor Award on environment.

Perception of Well-being and productivity

The respondents perceive well-being as being healthy and strong to perform their daily duties and responsibilities to family and earn a living to survive. The poor, they say, is not allowed to get sick because it is too expensive. It is better to be healthy yet poor than to be rich but sickly.

Leisure Activities

The respondents reported about the family leisure activities they undertake as well as their frequencies. The report showed that the most participants watching television, followed by viewing movies in movie houses, going out on trips or outing to interesting places. Other activities engaged in for leisure are games, watching free cultural shows and concerts.

Flow of money at the household

Generally, the father earns for the family while the mother manages the budget and makes both ends meet. It is the mother who borrows money when the family or enterprise runs short of cash or budget and she is also responsible to find ways and means to pay the loan. In many instances, major family and financial decisions are made by both husband and wife.

Recently, a growing number of families are left with the father taking care of the children while the mother works abroad for the children's education. The father then decides what is the priority at home in spending the monthly income from the working wife.

The respondents (27-30 percent) have savings. The reason for saving is to prepare for the education of the children and medical expenses.

Most of the respondents have availed of credit facilities with relatives, private persons and cooperatives. The reason for borrowing money for Marikina (shoe-making industry) respondents is for capitalization while in Manila (food business enterprise) is for illness, medicine, hospitalization. It is in Manila where respondents in two districts reported incidents of cholera and typhoid fever is high due to unsafe drinking water supply. This is validated during the FGD with men only and with women only.

The respondents to the FGD with women participants also communicated having used their savings in financing major household repairs while others narrated getting funding from other sources like loans made in different associations where they are members and from work benefits to fund major household repairs.

Availability of Electricity in the Community

In terms of the availability of electricity in the community, majority of the respondents relayed that they are able to benefit from the supply of electricity in the community, while only a number of respondents did not. With regard to the question whether there are light posts in the streets of their communities, many respondents accounted having light posts. The source of electricity for the

light posts is basically from the government, while others claim that electrical lamp posts come from private community residents.

Majority of the respondents reported using electricity in their household appliances while a few admitted having appliances that are not dependent on electricity. There are refrigerators that use gas to operate. When asked about the reasons why electricity is not used in their appliances, they reported that the use of electricity is too expensive and the family may not be able to afford paying it if all the equipment and facilities inside the house will use electricity.

Most of the respondents used LPG as their main type of fuel for cooking, while others use gas or kerosene. Only a few respondents use electric stoves, wood and charcoal for cooking. Majority of the respondents started using this fuel for cooking in the 1990's. Majority of the respondents reported that using fuel for cooking did not darken their kitchen ceiling and walls.

The sources of energy as reported by the respondents in their home and enterprise are LPG, kerosene, and electricity. The latter appeared to be the most expensive but are widely used in operating the appliances in the workplace such as electric mixer, electric fan, washing machine, television, refrigerator, and water dispenser.

4.2 Hypothesis 2

Social networks do not necessarily facilitate community members' access to energy services.

Majority of the respondents do not belong to social organizations that will hasten their access to energy services. Very few even belong to cooperatives that will strengthen their bargaining power over access to electricity. In the locale of the study, which could also be extended to a general situation in the country, it is MERALCO who dictates prices and access to electricity. It is the capability of the people to pay for energy power distribution and technicians for repairs that determines access to electricity. Therefore, social networks and relationships do not necessarily facilitate access of the poor to energy services, except in isolated cases.

Energy Services and Equipment Available

Modern energy supply and services are accessible in the community and electrical appliances and equipment are available at cost. The problem is the high cost of connection fee for electricity and the high monthly bill. Energy services can be availed of by just calling the service centers by telephone in case of home service.

Involvement of community in Community-based programs and NGOs

Very few of the respondents are members of social organizations. Interviews revealed that most of the women are busy doing their household chores, or attending to their small businesses so they do not have time to join such organizations. Other respondents relayed that joining organizations would entail expenses and they prefer to save the money for other family expenditures.

None of the organizations give information on energy sources and services. Some information are seen and heard on TV or radio or read in the newspapers, especially in the news section, i.e., oil price hike, increase in the cost of electricity, energy regulation and price of LPG, kerosene and the like.

Membership to organizations
Women organizations

A little less than half of the respondents are members of church-based organizations, followed by the Parents-Teachers Association and the neighborhood organization.

The data about the year when the respondents joined women organizations varied from year to year from 1984 to 2004. One can also observe that very few respondents seemed to join organizations within a span of twenty years. Interviews revealed that joining social organizations was done because they were invited by a friend. Others joined because the local officials requested them to attend the meetings and eventually became regular members already. For the respondents who did not join, the reason was lack of knowledge that such organization existed.

Only few respondents are members of women's association in their communities, and participated in 1995 up to present. A few number of respondents, are officers of the organization while the rest are active members. This data revealed that over and above the respondents' duties and responsibilities as entrepreneurs and parents they are still potentially able to join different organizations that may promote camaraderie and strong linkages among their community members.

There are a small number of respondents who are engaged in their neighborhood associations. Some became members as early as 1982, while others participated only in 2004. A few who chose to get involved are now officers of their associations while the others are active members.
Religious organizations

There are several respondents who asserted being part of religious groups in their communities either as officers or active members.

Some respondents are involved in their Barangay councils with most of them participating since the year 2000 as officers and members.

Very few respondents are active in cooperative associations with some joining as early as 1990; however, there were very few respondents who joined in the later years as active members or officers.

Although most of the entrepreneurs are parents, only a few claimed being part of the Parent-Teachers Associations with most of them participating in 1999 up to present. Very few also reported that they are officers of the association, while others are members.

Only one respondent is an active member of an energy association, the membership started in 2003 and the respondent's position was not specified. This small membership can be attributed to the fact that there are no associations concerning energy that are promoted by the government or the people in the community. Others also reported being members of other organizations which were not specified in the questionnaire.

Reasons for membership

Interviews revealed that entrepreneurs who are members of organizations increased their contacts in terms of customers, source of cheaper materials, and received assistance in getting government permits and ideas from consumers to improve their goods.

Fuel for Cooking

The respondents of the FGD for both men and women preferred fuel for cooking stove is kerosene, followed by LPG, and electricity based on cost. This is summarized as follows:

Type of cook stove	Where Accessed/ How much	Reason for the preference	Disadvantages and Other comments
LPG Cook Stove	Service provider can be easily accessed; Delivered by service provider or bought at variety stores nearby; costs PhP 380-450;	Easy to operate, clean; cooking is faster Easily accessible; Easy to ignite; no smoke; cleaner pans; cooking takes shorter time	Combined with kerosene or charcoal stove as alternative Users are usually wage earners; budget is usually allocated during payday; also use kerosene stove as alternative, mainly for boiling water, boiling meat (for eatery owner); dangerous when not properly maintained and handled which may cause loss of properties e.g. fire
Kerosene stove Kerosene	Available at stores and gas stations nearby Easily accessible at stores nearby and gas stations; costs only Php27 per liter	Affordable at (PhP 29 per liter) Cheaper and affordable; can be bought in retail thus does not require a bigger sum to be able to buy	Before they use gas stove but switched to kerosene when prices of LPG increased. May contaminate the food; it takes time to start cooking;
Charcoal stove	Can be bought at PhP 5 per small plastic bag; available at nearby stores and market Available in the market and in variety stores	Affordable and convenient for grilling	Smoke irritates the eyes Clothes and curtains absorb the burnt smell of charcoal; takes time to cook. It is not practical to use in congested areas like theirs because of the smoke emissions. It is also difficult to start a fire. All the other participants use charcoal stove only for grilling
Fuel wood	Use discarded wood	Free	User does the cooking outside the house

Wood fuel stove			(along the sidewalk) using fuel wood; his family who lives in the province also uses fuel wood. Combines with kerosene stove
Electric stove	From power supply	Safer than LPG and easy to manipulate even by elder children; readily available.	User combines it with a kerosene cook stove to boil water

Some of the respondents in Manila explained that during the financial crisis, they do not usually cook lunch at home, except on weekends when most of the family members are at home. During weekdays, most of the cooking is done in the morning and at night. Others use electric rice cooker and LPG for cooking meals since working couples have little time to prepare meals and they are tired from household chores and office work. The reason for reduced number of meal preparations at home is saving money and the quantity of food served but sacrificing the quality of food served..

During the energy crisis, the respondents claim that time management and meal preparations is no longer the reason for buying food from the street vendors of fastfood centers but rather the cost of cooking fuel or electricity. The problem faced by the fastfood or street food consumers is homogeneous food eating. There is not much variety of food served. Food choices become less and less and the taste is almost the same for all kinds of food.

In Marikina, majority of the respondents eat in their house 3 times a day. While most respondents did not change their usual food preparation, a big number reported that they changed their food preparation because of the increase energy cost, so they resorted to buying cooked foods.

The women are usually responsible in preparing and cooking the family meals. Others do not cook at all but one said his family gets food from his in-laws who manage an eatery.

Electricity Use in Households and Enterprises

As to other household appliances and equipments, majority claimed they have electric iron, electric fan, and washing machine; very few have a computer unit, and some have an air-conditioning unit but use it only occasionally.

Electricity is the main source of power in their houses. Electric bill ranges from PhP500-1,800 depending on the number of appliances, frequency of cooking and household size.

The timelines in the cost of energy as applied in the homes and workplace of the respondents was presented as present, before 2000, and after 2000. It was observed that electricity is the most expensive of the energy source, followed by LPG and then the Kerosene.

Effect of power failure

The respondents reported on the frequency of power failure like brownout as follows: when there is a typhoon and once a month. Many respondents experienced no brownout at all. When asked as to the effects of this condition on their enterprise, most of the respondents answered that no people would like to get inside their restaurant if it is dark, so they have to buy a generator. Others could not go on with their business when there was power failure like using the mixer, using the food heater, and other electric operated gadgets. Industry is very much affected and caused low income.

Household Budget Priority

Women manage the budget for the family but decisions on budget allocation/
spending is shared by both husband and wife. Participants unanimously identified the following budget items in their order of priority:

1. Food and LPG/fuel
2. Education (uniforms, school supplies, school fees)
3. Electric and water bill
4. House rental
5. Communications (specifically electronic load/pre-paid cards)

The basic considerations for choosing the cook stove for household are: easy ignition, time saving, clean and affordable. Preference for the gas stove due to its maximum efficiency level was emphasized. While its uses are affordable fuel, there is no assurance of continuous supply.

Information flows about energy services

The identified sources of information related to energy are the Barangay Assembly or meetings, newspapers and publications, radio, television, organizational meetings, among others.

In Manila, most of the respondents claimed that their sources of information on energy are the TV, radio and printed materials like newspapers and magazines while in Marikina, a higher number of respondents reported the sources of information on energy are the newspapers and magazines, Barangay Assembly, organizational meetings, in the order of mention.

4.3 HYPOTHESIS 3

Performance of enterprises is directly related to availability of energy services

Energy services are key factors in sustainable urban livelihoods because they increase the viability of existing enterprises and enable the establishments of new ones.

Home-based enterprise

Manila. The kind of home-based enterprise engaged by the Manila respondents are buying and selling or trading food products, food production, processing or preservation and restaurants, *carinderias* or eateries. The data reflect that engaging in enterprises concerning food is a popular choice among the respondents in general. There were 660 respondents from Manila. Food production, processing or preservation has been an income-generating enterprise since they do not require a big amount of capital and people spends a lot for food; enterprise such as chocolate-making, jam-making and meat preservation requires large capital investment.

The need to focus on cleanliness and adherence to safe food preparation and handling was brought out during the focused group discussion as an important intervention needed to ensure the growing customers of the street food vendors in both cities. This preventive measure is necessary since many of the respondents know cases o food poisoning, high incidence of parasitism (affecting 7 out of every 10 Filipinos), food poisoning, hepatitis, tuberculosis and the like.

Marikina. The respondents were entrepreneurs and employees. The 137 entrepreneur respondents are engaged in the shoe-making business; in producing slippers; bag-making; retailers of leather goods; and businesses other than bag or shoe-making.

Marikina City is recognized as one of the highest producers of leather goods in the Philippines. These goods are made for export and local distribution. Most of its residents are employed in the bag and shoe-making business. Some even have small-scale enterprises, manufacturing the same products but are limited to distributing their goods to the local market. A healthful workplace among the workers are emphasized by the entrepreneurs specially the provision of good ventilation, fresh air, and the provision of clean water for the workers. Most workers bring their own food cooked from home.

Capital for the respondents' business

The respondents reported different amount of money as their capital in their business. The difference was related to the kind of business and the cost of goods they sell. The Marikina respondents claim that they need a capital of PhP10,000 nowadays in order to keep up with the enterprise, while a few have to maintain a budget of PhP20,000 for their enterprises to flourish.

In Manila, the capital investment of the respondents for their business ranged from PhP1,000 pesos to PhP50,000. Some respondents reported that they need to have a capital of PhP5,000 pesos in order to keep up with their enterprises while others stated that they have to maintain a PhP2,000 pesos budget for their enterprises to flourish. However, few respondents remarked that they have to save PhP500 pesos ($9.26) in order to make their enterprises viable.

The rising prices for the basic commodities and raw materials used for the production of the enterprises are the reasons why there have been steady increased in the amount of capital the respondents need to make the business viable.

The family's source of income

Majority of the respondents depend on their home-based enterprise as their main source of income while some are employees in offices and schools. There were a few who communicated relying on overseas job opportunities as their main source of income. A number of respondents rely on farming, poultry and livestock raising, and fishing as their source of income in Marikina. Majority of the respondents earn not less than PhP24,000 pesos or ($444.44) but not more than PhP144,000 pesos or ($2,666.66) in a year as a family.

It was revealed by participants that when prices of LPG started to rise in 2004, they began to also use fuelwood or charcoal to reduce their expenditures.

Electric bills range from PhP500–2,800 for households and PhP3,300–5,000 for commercial establishments. It is usually the wife who pays the bill although some participants say their common practice is whoever is available.

When asked about problems on electricity and water supply or services and availability of spare parts, it was apparent that the participants to the FGD of men and women only have common responses. The proceedings of their discussions are as follows:

- Power supply is not a problem, they said. The problem lies on the very high rates on energy consumption. A huge private company - Manila Electric Company (MERALCO) controls the price. There is no other company that competes with it, known to the respondents, in the locale of the study.

- There is problem on the volume of water supply and its potability. They are always confronted with shortage of water supply and poor quality or unsafe drinking water. When there is shortage of water supply and water coming out of the faucets are not clean, thus unsafe for human consumption, they buy bottled water which is sold in water refilling stations found at any and every street corner sold in variety stores. It is quite affordable but it also becomes heavy on their pockets. In fact, only two among the participants, use bottled water regularly. For the many who cannot afford it, they have to rely on what they can collect from their faucets. It is not all the time that they boil water because that too requires energy expense. Some households and enterprises have percolators or water dispenser for hot and cold water which is an additional electric consumption.

- In other areas, water supply comes in trickles or none at all. For them to have water to use the next day, they have to patiently wait for the water to come out of the pipe which happens, unfortunately, in the wee hours of the morning.

- Fuel for their cook stoves (LPG, kerosene and charcoal) are readily available. They can be bought in nearby stores, market, gas stations. Wholesalers deliver the LPG cylinders through their delivery trucks for the enterprises. For households buying an 11kg LPG tank, the customer calls the retailer who in turn delivers the tank to the doorstep of customer by tricycle with additional cost for transportation.

- Cookstoves are readily available but these are the traditional ones. They say they are not aware nor have access to new and improved cook stoves that are cheaper, clean, and smoke-free or with less smoke-emission. They also say that saw dusts and rice hulls are hard to find in the city. They do not think it is practical for them to use.

End user's (entrepreneur) perception of energy service

FGD (women)

All participants responded that they could no longer afford to buy new appliances to facilitate their processing of business materials due to their meager and irregular income. Their income is not even enough to support the basic needs of the family.

While they do not have problems on the energy supply or services as power failure or "brown out", they still cannot say they are happy and contented because the cost of energy consumption is getting alarmingly high and too burdensome for them.

What the participants complain about is the quality of drinking water from the NAWASA, Metro Manila's only water service network. Such, they said, impact on their well-being (because drinking water is unsafe) and on their finances (because they had to buy bottled water which is also equally expensive). Others, however, cannot even afford to buy bottled water, thus, leaving them no option but to use water from the faucet. They said, sometimes they boil it but to save on fuel at other times they do not.

Participants also complain of shortage of water supply. They said they had to be up at dawn to wait for the water to trickle down from the faucet so that they can collect water for cooking, washing, bathing, etc. In spite of this condition, still their water bill reaches PhP600–PhP1,200 per month. To save water and cut down on water consumption, water used for laundry is re-used in watering the plants or cleaning and flushing the toilet.

Asked what could be the reason for the shortage of water supply, they pointed out as the culprit the illegal logging activities in the watersheds of the La Mesa dam. La Mesa dam supplies water to Metro Manila's residents. They also cited the recent landslides that killed several hundred people as an indicator of the denudation of the forests which are unfortunately located in the watersheds of the La Mesa dam.

Water bill ranges from Php600–1,200 monthly. They said they really find the cost of electricity and water consumption nowadays very costly and very hard to maintain where before, as they were saying, was still quite cheaper and affordable but nevertheless find living already difficult.

Sustainable enterprise

<u>Withstanding shocks</u>

Most respondents found that they experienced no calamity yet in relation to their business. This was due to the location and built of their building or structure for their business. Most of their building structures were made of concrete materials and steel. Other reported that shocks for their business were caused by typhoon, fire, a demolition group, and robbers and forced open their windows, door, or walls. These conditions have adverse effect on their finances because they have to spend for the repairs of the destroyed parts of the house.

Another shock in the family affecting the enterprise is being laid off from their jobs as reported by some of the respondents who were employees of the enterprise.. Due to the rising cost of energy, the price of goods also rise, thus the owners of business enterprise have to retrench people. The laid off employees were then forced to go back to poverty.

Hypothesis 4

Energy sector reforms are critical to improved access to clean and affordable energy services by local enterprises

Energy sector reforms have lead to improved access by urban enterprises to energy services especially electricity**.**

Government Energy Programs

The government is doing its best to energize all the barangays in the country by 2010. There are less than 3,000 barangays left without electricity, connected to the grid or solar powered PV. Some PVs provide energy for battery-charging stations (BCS) at the barangay level while others are used for pumping water.

In most cases, energy supply is used for consumptive activities rather than productive use. For example, some solar PVs are used for entertainment like sing-along, videoke at night instead of providing power a study center, health clinics for farmers who are in the field at daytime.

The Department of Energy and United Nations Development Programme (UNDP) “Capacity Building to Remove Barriers to Renewable Energy Development in the Philippines” (CBRED) is one of the most relevant programmes of the government in energy intervention for the improvement of access, availability and service.

The Renewable Energy Bill is still in Congress. This act promotes the development and use of renewable energy technologies. This was prepared and finalized by multi-sectoral organizations who are members of the Technical Working group (TWG). Approtech Asia is one of them. Once the Bill is approved, the implementing rules and regulations (IRR) will be prepared where other provisions need to be included such as gender and support to micro and small entrepreneurs for more productive uses of renewable energy.

The Department of Energy has come up with a program where the manufacturers of appliances test the efficiency of the electrical appliances, print this information in a yellow reflector sticker and stick this information on the appliance. The buyers are guided by this information and they can make intelligent choices if they understand what the information means. The salesperson in appliance store is expected to guide the buyer.

New policies in place: consideration of enterprises & energy

The following are issues regarding policies on energy:

1. Although energy sources are already in place, there is need to improve energy utilization. Electricity and other renewable energy sources are used for lighting. There is not much use of energy supply for productive uses such as for irrigation, improved health services, education, among others.

2. The government cannot operate the Bataan Nuclear Power Plant to address the energy crisis faced by the country that is dependent on the importation of fossil fuel as its major source of energy. The Bataan Nuclear Plant received tremendous protest from the public because of the great danger it poses to the lives of the people and the environment in case of accident or leaks. It should be noted that it uses plutonium as fuel. This should be studied further.

3. The government should also explore other sources of energy such as hydrothermal, geothermal, solar, wind, and ocean energy, among others. The problem is that the government does not have the political will to develop these energy sources.

4. Most of the participants claimed they do away with luxurious spending to survive the crisis – financial and energy.

Responses to Economic Crisis and High Cost of Energy

The coping mechanism of the respondents in the household and in their business to cope with the economic and energy crisis is articulated in the following actions and adjustments they do:

1. Avail of cooperative loans offered by a credit cooperative located nearby. Credit cooperative offers lower interest rates and better terms of payments plus other incentives such as provision of entrepreneurial skills training. Members are covered by insurance thus the age requirement, thus very old applicants are denied of membership.

2. Avail of the government support for livelihood activities through the Department of Social Welfare and Development (DSWD) which offers a small amount of (PhP1,000.00) credit assistance through the Barangay or up to PhP.

3. Seek credit from Indian nationals (known as "*Bombay*") who go around offering micro-credit financing. Micro-micro-enterprises in the informal sector are its major clientele. It is easily accessible but demands a 20% interest rate weekly paid on daily basis. Locally, the term used to describe this system is called 5/6. For every PhP5 loan, the borrower pays PhP1 interest per week, thus, paying a total of PhP6. Most of the participants availed of this scheme especially the street food vendors. Their problem is that they get tied down to the system especially when business is not earning much and prices of commodities are high. Their meager income for the day goes to loan payment only. They have to make good record in paying so that they can re-loan to keep their life and business afloat, they shared.

4. Seek membership in the Center for Small and Medium Scale Industries. Their membership allows them to avail of financial assistance, entrepreneurial skills training and even technical assistance, e.g., business planning, etc. Loans can be paid up to three times the amount of savings/shares in the cooperative. Dividends are also given after a year.

5. At the household level, respondents practice conservation of energy consumption like minimizing the ironing of clothes, or turning off other appliances when not in use.

6. Reduce number of refrigerator used into one instead of the usual three, which means less stock in the freezer and frequent visits to the market which also entails additional cost for transportation.

7. Use air-conditioning unit only when the weather is very hot or only at night and turn off the AC at dawn.

8. Maintain the selling price of food in the restaurants, by cutting down on expenses and reducing the quantity of food serving, buying lower-quality ingredients, and reducing energy consumption.

9. Use illegal connection to reduce cost of electricity, which should be discouraged.

10. Minimize ironing of clothes, mostly work clothes, office and school uniforms.

11. Observe schedule in TV viewing; and turn off lights when not in use.

12. Operate appliances one at a time to reduce consumption, e.g., turning off the television when ironing clothes.

13. Skip breakfast or snack or at times both.

14. Buy cooked food to save on LPG

15. Use gas stove alternately with stove using cheaper fuel, e.g., kerosene stove.

16. Cut down expenses on luxury items, spend only on the very basic needs of the family

17. Report widespread illegal connection of electricity. All participants agree it is tolerated and somehow supported by the community. It is the people's response to the continuous rise of electricity rates. Whenever a MERALCO representative comes around, a runner would go around the community and advise them to be on guard.

The energy-saving tips can be seen in television advertisements by the Philippine National Oil Corporation (PNOC) in between popular primetime programs for general patronage.

Problem with high electricity rate

While participants do not have problems on the energy supply or services such as power failure or "brown out" which very seldom occurs, they still cannot say they are happy and contented because the cost of energy consumption is getting alarmingly high and too burdensome for them.

At present, the consumers in the non industrial service pay the following items reflected in the monthly electric bills:

Pass Through Charges – These are the parts of the bill that are non-MERALCO in nature. Instead, they go straight to government, power suppliers and other service providers.

- **Generation charge** (PhP4.8/kW) – Paid to power supplier such as the National Power Corporation (NPC), as Independent Power Producers (IPPs), for the electricity they generate which Meralco distributes.
- **Transmission charge** (16% of the monthly bill) – Paid to the National Transmission Company or TransCo. This fee is for delivery of electricity from generators, normally in remote areas or provinces to Meralco's distribution system.
- **System Loss charge** (7%) – Set at a maximum of 9.5% in accordance with Republic Act 7832, this is a for the recovery of lost power.
- **Distribution charge** (11%) – Meralco charge. This pays the cost building, operating and maintaining the distribution system of Meralco, which brings power from high-voltage transmission grids, to commercial and industrial establishments, to residential end-users.
- **Supply charge** (9%) – Meralco charges. This includes the cost of rendering service to customers, such as billing, collection, customer assistance and associated services.
- **Metering charge** (4%) – Meralco charge. This includes the cost of rendering service to customers, such as billing, collection, customer assistance and associated services.
- **Lifeline rate subsidy** (1%) – Amounting to Php0.0761 per kWh, this is paid by all customers consuming 101 kWh and up, and used to fund the Lifeline Discount.

- **Interclass subsidy** (0.9%) – Meralco charge. The unbundled rates also identify subsidies being enjoyed or provided by the various customer categories of Meralco. All residential customers will enjoy a subsidy of PhP0.7130 per kWh consumed. This subsidy will be funded by a charge to be paid by commercial and industrial establishments.
- **CERA** (currency exchange rate adjustment) (1%) Meralco charge. This covers adjustments for unavoidable fluctuations in the Philippine Peso-Dollar exchange rate.
- **FRANCHISE tax –** Required by government, 2% of this amount goes to the national government as local national franchise tax, while a range of 0.05% to 0.75% of the gross is paid to local government units.
    . National (2%)
    . Local (0.7%)
- **UNIVERSAL charges** – This is remitted to the Power Sector Assets and Liabilities Mangement Corporation (PSALM), a company owned and controlled by government, created Republic Act 9136. Part of this is in your bill as missionary electrification and environmental charges.
    . missionary (0.3%)
    . environmental fund (0.02%)
    . NPC (National Power Corporation) stranded debts
    . NPC Stranded Contract costs
    . DUs Stranded Contract costs
    . Equalization Taxes and Royalties

Problem on water supply

The respondents complained on the quality of drinking water from the NAWASA, Metro Manila's only water service network. Such, they said, impact on their well-being (because drinking water is unsafe) and on their finances (because they had to buy bottled water which is also equally expensive). Others, however, cannot even afford to buy bottled water, thus, leaving them no option but to use water from the faucet. They said, sometimes they boil the water but to save on fuel, other times they do not.

The respondents also cited as a problem the shortage of water supply. They said they had to be up at dawn to wait for the water to trickle down from the faucet so that they can collect water for cooking, washing, bathing, etc. In spite of this condition, still their water bill reaches P600 – P1,200 per month. To save water and cut down on water consumption, water used for laundry is re-used in watering the plants or cleaning and flushing the toilet.

Asked what could be the reason for the shortage of water supply, they pointed out as the culprit the illegal logging activities in the watersheds of the La Mesa dam. La Mesa dam supplies water to Metro Manila's residents. They also cited the recent landslides that killed several hundreds of

people as an indicator of the denudation of the forests which are unfortunately located in the watersheds of the La Mesa dam.

Water bill ranges from PhP 600 – 1,200 monthly. They said they really find the cost of electricity and water consumption nowadays very costly and very hard to maintain. They find living already difficult due to this condition.

Spending Patterns and Priorities

Due to the enormous high prices of commodities and high electricity rates, the following spending priorities of the respondents were revealed.

1. food (including LPG/kerosene)
2. education of children
3. electric/water bill
4. house rental

The respondents reported their discontentment because they cannot keep up with the high cost of living. Before the crisis, at least they can still go to the movie house or eat in a fast-food chain with the family. But now, they cannot do these things anymore. They cannot even buy their children new clothes other than during Christmas, especially among employees who receives a 13th month pay which has been legalized in the country. The unemployed have to make extra income to buy for clothes and gifts for the holiday season.

The respondents no longer entertain the idea of buying new set of appliances because it is not practical and they cannot afford such. They even had to keep some of their appliances in the store room, why add a new one. It does not make sense, she said.

Some respondents were aware of the existence of a Barangay level committee on energy who could assist them in their problem concerning energy. On the other hand, majority of the respondents have no knowledge at all on the existence of this committee. Efforts should be done to disseminate information about energy and the committee on energy should devise widespread dissemination activities.

The respondents revealed that the energy distribution responsibility is placed on different institutions as ranked - the government, private entity, dealer of gas and gasoline, and electric cooperative, in the order of mention.

The respondents reported that there they know some women who can handle repair of appliances.

The respondents expressed an open mind to the idea of using cooking stove which do not use electricity, LPG and kerosene if main considerations are met like affordability, efficiency and availability of fuels to be used.

CHAPTER V

RECOMMENDATIONS

Based on the results of the study, here are some recommendations that could be considered by the government and policy makers so that the Philippine government can prioritize the needs of the urban poor

1. Encourage the entrepreneurs to lobby in congress to urge the government to implement the reform on energy and electrification as shown by the following enabling objectives:

- Increase the investment of private capital in the power industry, while minimizing the government's financial commitment.
- Create an environment of competition and accountability among energy service providers (ESCOs).
- Deliver competitive, reliable and affordable prices of energy supplies and services.
- Improve operational and economic efficiency of electric appliances, machineries, equipment.
- Make transparent the social subsidies.
- Share social and other costs among all users.

2. Encourage the small-scale entrepreneurs to conduct awareness campaign on information dissemination about possible government reforms in the delivery and pricing of energy through electricity, water, and fuel.

3. NGOs and government bodies tasked on energy concerns to work with the local government officials to create reasonable subsidies for fuel and energy to small-scale enterprise similar to discount cards which could be presented to dealers of these commodities.

4. Conduct citywide campaigns on information about upgrading the knowledge of small scale entrepreneurs regarding healthful environment for the employees, provision of clean and safe workplace and wise use of fuel and energy. Introduce energy-efficient technologies, hygiene and sanitation and micro-credit facilities to micro-food vendors who feed an increasing number of families dependent on street foods as a response to financial and energy crisis.

5. Encourage the membership to organizations, which can assist in influencing reforms and policies of fuel and energy distribution and pricing.

6. Provide information on wise conservation of water and contribute in protecting the water sources from contamination through observance of cleanliness and sanitation.

7. Government and NGOs to explore projects (R and D) for alternative energy sources and also to lessen dependence of urban poor on expensive energy for cooking and electricity to improve their lives.

APPENDICES

Tables

Table 3.1 Membership in social organizations

		Frequency	Percent	Valid Percent	
Valid	Member	50	8.8	100.0	
Missing	System	520	91.2		
Total		570	100.0		

Table 3.2 Kind of membership in the organization

		Frequency	Percent	Valid Percent	
Valid	Officer	14	2.5	30.4	
	Members	32	5.6	69.6	
	Total	46	8.1	100	
Missing	System	524	91.9		
Total		570	100		

Table 3.3 Neighbors association

		Freq	Percent	Valid Percent	
Valid	Member	36	6.3	100	
Missing	System	534	93.7		
Total		570	100		
	2003	2	0.4	10.5	
	2004	1	0.2	5.3	
	Total	19	3.3	100	
Missing	System	551	96.7		
Total		570	100		

Table 3.4 Kinds of membership in the neighborhood associations

		Freq	Percent	Valid Percent	
Valid	Officer	10	1.8	29.4	
	Member	24	4.2	70.6	
	Total	34	6	100	
Missing	System	536	94		
Total		570	100		

Table 3.5 Respondents' membership in church organizations

		Frequency	Percent	Valid Percent	
Valid	Member	49	8.6	100	
Missing	System	521	91.4		
Total		570	100		

Table 3.6 Respondents' position in church organizations

		Frequency	Percent	Valid Percent	
Valid	Officer	14	2.5	30.4	
	Member	32	5.6	69.6	
	Total	46	8.1	100	
Missing	System	524	91.9		
Total		570	100		

Table 3.7 Membership in the Barangay Council

		Freq	Percent	Valid Percent	
Valid	Member	33	5.8	100	
Missing	System	537	94.2		
Total		570	100		

Table 3.8 Years when respondents joined the Barangay Council

		Freq	Percent	Valid Percent	
Valid	1979	1	0.2	6.7	
	1982	1	0.2	6.7	
	1990	1	0.2	6.7	
	1995	1	0.2	6.7	
	1997	1	0.2	6.7	
	2000	3	0.5	20	
	2002	2	0.4	13.3	
	2003	3	0.5	20	
	2004	2	0.4	13.3	
	Total	15	2.6	100	
Missing	System	555	97.4		
Total		570	100		

Table 3.9 The position of respondents in the Barangay Council

		Freq	Percent	Valid Percent	
Valid	Officer	22	3.9	71	
	Member	9	1.6	29	
	Total	31	5.4	100	
Missing	System	539	94.6		
Total		570	100		

Table 3.10 Position in Parent-Teacher Association

		Freq	Percent	Valid Percent	
Valid	Officer	10	1.8	35.7	
	Member	18	3.2	64.3	
	Total	28	4.9	100	
Missing	System	542	95.1		
Total		570	100		

Table 3.11 Membership in cooperatives

		Freq	Percent	Valid Percent	
Valid	Members	17	3	100	
Missing	System	553	97		
Total		570	100		

Table 3.12 Respondents position in cooperatives

		Freq	Percent	Valid Percent	
Valid	Officer	6	1.1	40	
	Member	9	1.6	60	
	Total	15	2.6	100	
Missing	System	555	97.4		
Total		570	100		

Table 3.13 Respondents' membership on energy

		Freq	Percent	Valid Percent	
Valid	Member	1	0.2	100	
Missing	System	569	99.8		
Total		570	100		

Table 3.14 Position in Energy Organization

		Frequency	
Missing	System	570	

Table 3.15 Organizations of the respondents

		Freq	Percent	Valid Percent	
Valid	Member	19	3.3	100	
Missing	System	551	96.7		
Total		570	100		

Table 3.16 Frequency of cooking food

		Freq	Percent	Valid Percent	
	5 times a day	49	8.6	8.7	
	3 times a day	395	69.3	70.3	
	3 times a day	77	13.5	13.7	
	1 times a day	22	3.9	3.9	
	Others	12	2.1	2.1	
	6	7	1.2	1.2	
Valid	Total	562	98.6	100	
Missing	System	8	1.4		
Total		570	100		

Table 3.17 Frequency of eating in the house among respondents

		Freq	Percent	Valid Percent	
	1	15	2.6	3	
	2	35	6.1	7	
	3	354	62.1	71.1	
	4	31	5.4	6.2	
	5	61	10.7	12.2	
	6	2	0.4	0.4	
Valid	Total	498	87.4	100	
Missing	System	72	12.6		
Total		570	100		

Table 3.18 Frequency of cooking food-2004

No. of Times		Freq	Percent	Valid Percent	Cum Percent
	1	56	9.8	10.1	10.1
	2	394	69.1	70.7	80.8
	3	72	12.6	12.9	93.7
	4	16	2.8	2.9	96.6
	5	15	2.6	2.7	99.3
	6	4	0.7	0.7	100
Valid	Total	557	97.7	100	
Missing	System	13	2.3		
Total		570	100		

Table 3.19 Frequency of eating in the house-2004

No. of times eating in the house		Freq	Percent	Valid Percent	Cum Percent
	1	16	2.8	3.2	3.2
	2	41	7.2	8.3	11.5
	3	342	60	69	80.4
	4	27	4.7	5.4	85.9
	5	69	12.1	13.9	99.8
	11	1	0.2	0.2	100
Valid	Total	496	87	100	
Missing	System	74	13		
Total		570	100		

Table 3.20 Reasons for changing the food preparation at home

Category Label	Code	Count	Responses	Cases
No change in cooking	1	300	44.3	54.3
Increase of energy cost	2	150	22.2	27.2
Increase cost of Food	3	187	27.6	33.9
Cheaper to buy cooked food	4	26	3.8.	4.7
Skip food intake	5	6	0.9	1.1
Others	6	8	1.2	1.4
Total Response		677	100	122.6

Table 3.21 on family members Illness for the last 12 months

		Freq	Percent	Valid Percent	
	There is illness	401	70.4	71.1	
	No Illness	163	28.6	28.9	
Valid	Total	564	98.9	100	
Missing	System	6	1.1		
Total		570	100		

Table 3.22 Illnesses of family members

Category Label	Code	Count	Responses	Cases
Cough and colds	1	282	53.8	70.7
Lung Diseases	2	22	4.2	5.5
Back Pain	3	60	11.5	15
Eye Ailment	4	21	4	5.3
Pneumonia	5	39	7.4	9.8
Others	6	100	19.1	25.1
Total		524	100	131.3

Table 3.23 Family members who eat regularly

Category Label	Code	Count	Responses	Cases
Father	1	379	25.7	68
Mother	2	445	30.2	79.9
Children	3	466	31.7	83.7
House and Business Help	4	4	65	11.7
Relatives	5	110	7.5	19.7
Others	6	0.5	1.3	1.3
Total Response		1472	100	264

Table 3.24 Frequency of leisure activities

Category Label	Code	Count	Responses	Cases
Games	1	25	4.88	5.2
Cultural Shows	2	23	4.4	4.7
Movie	3	52	10	10.7
Concerts	4	3	0.6	0.6
Outing	5	38	7.3	7.8
Watching TV	6	365	70.3	75.3
Others	7	7	2.5	2.7
Total		519	100	107

Table 3.25 Kinds of fuel used at present		Freq	Percent	Valid Percent	
	Kerosene	119	17	29.3	
	LPG	248	35.5	61.1	
	Biogas	1	0.1	0.2	
	Electricity	31	4.4	7.6	
	Others	7	1	1.7	
Valid	Total	406	58.2	100	
Missing	System	292	41.8		
Total		698	100		

Table 3.26 Sources of energy for the present livelihood activity

Category		Freq	Percent	Valid Percent	
	Kerosene	157	22.5	25.6	
	LPG	338	48.4	55.1	
	Biogas	4	0.6	0.7	
	Electricity	101	14.5	16.5	
	Others	13	1.9	2.1	
Valid	Total	613	87.8	100	
Missing	System	85	12.2		
Total		698	100		

Table 3.29 Frequency of electricity failure (brownout)					
		Frequency	Percent	Valid Percent	
Valid	No failure	166	29.1	29.7	
	Once a week	15	2.6	2.7	
	Once a month	133	23.3	23.8	
	Every time there is a typhoon	173	30.4	31	
	Always Suffering from failure	6	1.1	1.1	
	Others	11	1.9	2	
	Not frequent	54	9.5	9.7	
	Total	558	97.9	100	
Missing	System	12	2.1		
Total		570	100		

Table 3.30 Responses to calamities that happened for the last two years					
Category		Freq	Percent	Valid Percent	
Valid	Yes	121	21.2	21.9	
	No calamity	431	75.6	78.1	
	Total	552	96.8	100	
Missing	System	18	3.2		
Total		570	100		

Table 3.31 Destruction experienced after a calamity if the response is YES

Category		Freq	Percent	Valid Percent	
	The house was destroyed due to fire	29	5.1	22.7	
	The house was destroyed due to typhoon	59	10.4	46.1	
	Destruction of the house by force (Among Squatters)	7	1.2	5.5	
	Robbery (destroyed by robbers)	15	2.6	11.7	
	Others	18	3.2	14.1	
Valid	Total	128	22.5	100	
Missing	System	442	77.5		
Total		570	100		

Table 3.32 Respondents being laid off from their jobs

		Freq	Percent	Valid Percent	
	Yes	173	30.4	33.9	
	No	338	59.3	66.1	
Valid	Total	511	89.6	100	
Missing	System	59	10.4		
Total		570	100		

Table 3.33 Respondents report about the existence of Committee on Energy

		Freq	Percent	Valid Percent	Cum Percent
	There is	80	14	14.7	14.7
	None	465	81.6	85.3	100
Valid	Total	545	95.6	100	
Missing	System	25	4.4		
Total		570	100		

Table 3.34 Energy Distribution

Category label	Code	% of Count	% of Responses	Cases
Government	1	290	45	52.3
Private	2	196	30.4	35.3
Cooperative	3	4	0.6	0.7
Family owned Generator	4	4	0.6	0.7
Dealer of Gas and Gasoline	5	149	23.1	26.8
Others	6	1	0.2	0.2
Total		644	100	116

Table 3.35 Environmental Protectio

Category label	Code	% of Count	%Responses	Cases
Health Service	1	399	32.5	74.4
Proper Disposal of Garbage	2	421	34.2	78.5
Public Toilets	3	73	5.9	13.6
Fire Fighters Brigade	4	213	17.4	39.7
Source of Low-cost goods to be sold	5	107	8.7	20
Others	6	14	1.1	2.6
Total		1227	100	228

Table 3.35 Respondents who became jobless

Category label	Code	Percentage of Count	Percentage of Responses	Cases
Father	1	112	48.1	52.6
Mother	2	33	14.2	15.5
Children	3	58	24.9	27.2
Relatives	4	22	9.4	10.3
Others	5	8	3.4	3.8
Total responses		233	100	109.4

Table 3.36 Sources of knowledge about energy

Category label	Code	Percentage of Count	Percentage of Responses	Cases
Radio	1	331	41.1	64.9
Television	2	433	53.8	84.9
Meeting of organization	3	29	3.6	5.7
Others	4	12	1.5	2.4
		805	100	157.8

Table 3.37 FGD participants profile

Name	Employment	Civil Status	Family Members
Eduardo	Unemployed	Married	4
John	Tricycle Driver	Married	4
Tomas	small businessman	Married	7
Edgardo	Small businessman	Married	No child but is supporting a niece and a nephew
Nelson	Livelihood education teacher	Married	4
Froilan	unemployed	Single	5
Bong	Driver	Single	6
Rodolfo	unemployed	Married	4
June	Electrician	Single parent	2
Ponso	School guard	Married	6 (family lives in the province)

Table 3.38 energy source and services in the household

Type of cook stove	No. of Users	Where Accessed/ How much	Reason for the preference	Disadvantages and Other comments
LPG	5	Delivered by service provider or bought at variety stores nearby; costs PhP 380-450;	Easily accessible; Easy to ignite; no smoke; cleaner pans; cooking takes shorter time	Users are usually wage earners; budget is usually allocated during payday; also use kerosene stove as alternative, mainly for boiling water, boiling meat (for eatery owner); dangerous when not properly maintained and handled which may cause loss of properties e.g. fire
Kerosene	6	Easily accessible at stores nearby and gas stations; costs only Php27 per liter	Cheaper and affordable; can be bought in retail thus does not require a bigger sum to be able to buy	May contaminate the food; it takes time to start cooking;
Charcoal	Use only for grilling fish or pork meat	Can be bought at PhP 5 per small plastic bag; available at nearby stores and market		Smoke irritates the eyes Clothes and curtains absorb the burnt smell of charcoal; takes time to cook. It is not practical to use in congested areas like theirs because of the smoke emissions. It is also difficult to start a fire.
Fuel wood	1	Use discarded wood	Free	User does the cooking outside the house (along the sidewalk) using fuelwood; his family who lives in the province also uses fuel wood.
Electric stove	1	From power supply	Safer than LPG and easy to manipulate even by elder children; readily available.	User combines it with a kerosene cook stove to boil water

Table 3.39
List of Micro-Enterprises and Income Generating Activities Among the Urban Poor

Type of IGA/Micro Enterprise	Uses of Energy	Type of Energy Used
Making and/or selling of craftw ork		
Carpentry	Lighting, Running drills, plainer, etc.	Kerosene, Electricity
Pottery	Lighting	Electricity, kerosene
Knitting, crocheting, w eaving	Lighting	Electricity, kerosene
Dress making/Tailoring	Lighting, motor for sew ing machine	Electricity, kerosene
Small Scale Agricultural Activities		
Dariry processing	Lighting, Refrigeration	Electricity
Vegetable grow ing	Lighting, Refrigeration	Electricity
Livestock raising	Lighting	Electricity
Poultry raising	Lighting	Electricity
Food Preparation and Processing		
Bakeries	Baking, Lighting	Fuelw ood, LPG
Eateries	Cooking, Lighting	Fuelw ood, LPG, Kerosene
Grain Milling	Running motor, lighting	Electricity, kerosene
Fish Smoking	Smoking	Fuelw ood, Biomass Residues
Fish drying	Drying	Solar, Biomass Residues
Ice/Ice candy making	Refrigeration, Lighting	Electricity, kerosene
Food kiosks	Cooking, Lighting	Fuelw ood, LPG, Kerosene
Hospitality Activities		
Bed spacing	Lighting, appliance usage	Electricity
Room Rentals	Lighting, appliance usage	Electricity
Video Cine	Lighting, operating TV and VCD	Electricity
Medical Services (Hilot)	Lighting	Electricity, kerosene
Small-Scale Mining and Processing Activities		
Tinsmiths	Heating	Charcoal
Blacksmith	Heating	Charcoal
Goldsmith	Heating	Charcoal
Energy-related enterprise		
Repair of electrical appliances, cellphones and machineries	Lighting, Soldering guns	Electricity
Energy retailers	Lighting	Electricity, kerosene
Technology generated business		
Internet café/Emailing	Lighting, Running computers	Electricity
Telephone Service	Lighting	Electricity
Faxing/Photocopying	Lighting, running fax machine	Electricity
Transportation Activities		
Pedicabs		
Tricycles	Automotive pow er	Diesel
Car repairs	Lighting	Electricity, Kerosene
Spare parts dealers	Lighting	Electricity, Kerosene
Vulcanizing shops	Lighting, running motor pump, heating	Kerosene, Electricity
Trading		
Sari-sari store	Lighting, refrigeration	Electricity, Kerosene
Drugstore	Lighting, refrigeration	Electricity, Kerosene
Food Kiosks (barbecue, fish balls, banana cue, etc.)	Cooking	Kerosene, Fuelw ood, Charcoal
Home-based retailing activities	Lighting	Electricity
Other Specialist Activities		
Laundries	Lighting, Running w ashing machine, Ironing	Electricity
Mechanical/Electrical Repair	Lighting, Running motors, Soldering guns	Electricity
Welding	Welding, Lighting	Electricity
Hairdressing	Lighting, running blow er/shaver, steamer	Electricity
Furniture making	Running tools such as plainer, drill, etc.	Electricity