The 1997 Regional Financial Crisis: Its Social Impact on the Philippines

by Celia Reyes, Rosario Manasan, Aniceto Orbeta, Jr. and Generoso de Guzman*

The Philippines, having been integrated into the global economy, was not spared from the financial crisis that hit East Asia in July 1997. Like other countries in the region, the country became increasingly vulnerable as it absorbed a portion of the massive portfolio investments that flowed into the region two to three years before the crisis. The large capital inflows strengthened the domestic currency even as they widened the country’s trade deficit.

Prior to the crisis, the Philippines experienced significant economic and human development improvements as it benefited from the various policy reforms instituted from 1991 to 1996. A year after the crisis, however, much of the gains were eroded. The drought brought about by the El Niño phenomenon and later on the typhoons associated with La Niña further exacerbated the problem. Both wreaked havoc on the agricultural sector and, consequently, the poorer segment of the population.

In this regard, what were the social consequences of the 1997 crisis? And how extensive were they?

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fected by the crisis, looked into institutional responses and household coping mechanisms, and determined areas where international organizations like the ADB can make useful contributions.

Previous studies of the same nature had based their analysis on very limited data. This study, however, made use of a rich set of information coming from primary data obtained through a participatory assessment approach using focus group discussions (FGDs), key informant survey and household survey, and from very recent regular and official statistics. The data collected in January 1999 more or less captured the full impact of the crisis.

Economic situation prior to the financial crisis

Three years before the crisis, the Philippines enjoyed a steady and stronger economic growth compared to its sluggish pace in the early 1990s. Higher incomes and employment rate, stable prices, and favorable balance-of-payments (BOP) and fiscal positions were basically the result of the various policy reforms instituted from 1991 to 1996. Said reforms addressed, among others, infrastructure bottlenecks including the power supply situation and the lackluster condition of investment and economic activities especially within the deregulated and liberalized sectors.

However, the creditable performance of the economy still lagged behind Thailand, Indonesia, China, Malaysia and Singapore whose economic growth had been at an almost neck-breaking pace since the early 1990s. Inspite of the economic growth experienced from 1994 to 1997, the Philippines’ per capita GNP in dollar terms has not equalled its peak level in 1981 largely because of the country’s roller coaster pattern of growth since the late 1970s as well as the consistently high population growth rate.

The country enjoyed a substantial inflow of foreign capital especially portfolio investments in 1995-1996 like the other countries in the region. This resulted in the strengthening of the peso despite the country’s large trade deficit. The large proportion of portfolio investments to total foreign investments, the strong peso combined with a large trade and current account deficit, and the deterioration of the BOP position in early 1997 made the economy vulnerable to speculative attacks on its currency.

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"...the various policy reforms instituted earlier, especially those which resulted in the strengthening of the banking system, made the country relatively more resilient to the impact of the crisis compared to some countries in the region."

Social and human development situation prior to the crisis

The country posted positive trends in some key human development indicators (Reyes and Del Valle 1998) during the few years prior to the crisis due to improved incomes and employment as well as to the higher government spending on the social service sectors during the mid-1990s.

Compared to 1986, there was marked improvement in the general health condition of the population from 1994 to 1996. Available indicators showed an increase in average life expectancy and a decline in malnutrition, and crude death and infant mortality rates. Poverty incidence also experienced a continuous decline over the period 1986-1997 although in terms of number or the magnitude of poor people, the figure continued to swell.

Notwithstanding these gains, the Philippines fared unfavorably compared to the other five ASEAN countries in terms of per capita incomes, unemployment, and poverty incidence. On the human development aspect, it also fared poorly specifically in terms of life expectancy, average birth weight...
The financial crisis shaved off a substantial amount from expected government revenues and left the government with no choice but to cut back on its spending.

in infants, crude death rate, infant mortality, employment, and access to sanitary toilet facilities. Thus, based on the overall ranking for selected human development indicators, the country placed fourth among the five ASEAN countries, ranking higher than just one country, Indonesia.

Economic impact of the crisis

The most immediate impact of the financial crisis was manifested in the sudden outflow of substantial amounts of foreign capital. This put a heavy strain on the country’s dollar reserves and resulted in the steep drop in the value of the peso (more than 62 percent within seven months after the crisis struck). To ease the pressure on the exchange rate, interest rates were increased by almost seven percentage points at their peak level.

Only a slight deceleration in the GDP growth was felt in the first six months after the start of the crisis, with the agriculture sector registering a flat growth and both the industrial and services sectors showing some signs of weakening. In 1998, however, the economy contracted, particularly in the second quarter when the drought was most intense and in the fourth quarter when two strong typhoons hit the country. While the economic contraction was seen to be due more to the weather disturbances rather than to the financial crisis, the marked decline in manufacturing and construction output during the period indicated that the adverse impact of the crisis had already started to be deeply felt.

Inflation slightly accelerated in the first few months after the crisis, with pressures coming mainly from the services and housing sectors while food prices were somewhat stable. However, when agricultural output dropped drastically during the second quarter of 1998, the increase in food prices accelerated and brought the overall inflation to a double-digit level.

With the major depreciation of the peso, the balance of trade improved although it still remained negative. In the six months immediately following the onset of the crisis, imports continued to outpace exports and the trade gap continued to widen. In 1998, imports dropped dramatically while exports continued to expand. By the second half of 1998, the trade balance turned into a surplus and drastically reduced the trade gap for the whole year. This, together with the availment of foreign borrowings, contributed to an improved BOP position in 1998.

Fiscal impact of the crisis

The financial crisis shaved off a substantial amount from expected government revenues and left the government with no choice but to cut back on its spending. Reduced spending meant a curtailment in the delivery of economic and social services although efforts were made to shield the latter from deeper budget cuts. Most adversely affected by the austerity measures were the economic services sectors and national defense. On the other hand, the social services and general public services sectors were relatively protected when the reserves on the latter were selectively lifted during the year. Still, real per capita spending on the social services sectors, particularly in health and education, went down in 1998.

With the drop in government revenues brought about by the dramatic shortfall in import duties, the government imposed a 25 percent reserve on total maintenance and operating appropriations of all national government agencies in February 1998. At the same time, it imposed a 10 percent reserve on the local government units’ (LGUs) share in internal revenue allocation (IRA). Despite these measures, though, the economy faced a bigger budget deficit toward the end of 1998.

With the government’s fiscal difficulties continuing into 1999, aggregate government expenditures net of debt service based on the 1999 General Appropriations Act (GAA) remained tight. Expenditures on the economic service sectors, however, are expected to somehow recover but real per capita national government spending on health and education is projected to continue to decline in 1999.

The local governments also encountered similar revenue difficulties. Aside from a reduction in their IRA shares, many LGUs registered a decline in locally-generated revenues. Because LGUs are not allowed to incur a

Expenditures on the economic service sectors, however, are expected to somehow recover but real per capita national government spending on health and education is projected to continue to decline in 1999.
ntense human activity has put a great strain on Metro Cebu’s water supply in recent years. In contrast to the progressive overall economic development of Metro Cebu, the state of its water resource management and quality of its water utility service have become a cause for serious concern of the Cebu population. For one thing, the watersheds surrounding Metro Cebu have long been considered to be in a critical state. Access to piped water connection is limited. Groundwater pumping is virtually unregulated despite the reported depletion of groundwater reserves and saline intrusion into coastal aquifers. Moreover, the lack of sewerage collection and treatment efforts as well as the weak regulation of industrial effluents and nonpoint sources of water pollution have adversely affected the people’s health and quality of rivers, streams, and other water bodies.

What could have led to this disturbing water resource management situation in Metro Cebu?

This paper looks at the policy and institutional factors that may have constrained and are constraining the efficient, equitable, and sustainable management of water resource in Metro Cebu. Given the unique characteristics of the water resource (including watersheds) and the peculiarities of the water sector, purely market mechanisms will fail to achieve an economically efficient, socially equitable, and environmentally sustainable development, distribution and use of water resources. As such, the government has to play a critical role in establishing an incentive, regulatory, and institutional framework that will facilitate the achievement of water resource management objectives. A number of reforms that could address the issue on hand are thus presented in this paper.

Cebu’s water supply situation: heavy reliance on groundwater

Metro Cebu’s water supply is mostly derived from groundwater aquifers. The government-owned Metro Cebu Water District (MCWD) abstracts about 110,000 cubic meters per day (cum/d) from its 81 wells in various parts of the service area. Its piped water distribution system, however, serves only about 24 percent of total households and an even smaller proportion of the industrial and commercial establishments for an average of 18 hours per day. Household or domestic use accounts for about 70 percent of the volume of water sold while industrial, commercial, and other users take up the remaining 30 percent.

In view of this, majority of the households, industrial and commercial firms therefore have to rely on private wells (self-supplied or through private waterworks) and private water vendors as shown in Table 1. Many of those with MCWD connections also have their

| Table 1: Estimate of urban water consumption by source of supply, 1995 (thousand cum/d) |
|---------------------------------|-----------------|-----------------|
| **Household**                  | **Others**      | **Total**       |
| Metro Cebu Water District      | 47.6            | 19.5            | 67.1  |
| (24)*                         | (23)            | (24)            |
| Private wells and others       | 148.1           | 64.4            | 212.5 |
| (76)                          | (77)            | (76)            |
| Total                         | 195.7           | 83.9            | 279.6 |
| [70]**                        | [30]            |                 |

* Figures in parentheses are percentage shares of MCWD or other sources to water use by households or other users.

** Figures in brackets are percentage shares of households or other users to total water use.

Note: The total water use is derived based on a conservative assumption about the size of water demand for industrial, commercial and other users.

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own wells, use vended water or even invest in booster pumps, cisterns, and storage tanks to complement the rationed supply of piped water. Vended water may be picked up from any source, usually from a neighbor with an MCWD connection or maybe delivered by carts, jeeps, or large trucks.

Since 1990, various estimates of groundwater abstraction have fallen within a narrow range of 235,000 to 243,000 cum/d. However, based on a more recent population census and using a different assumption of per capita water use and a different method for estimating nonhousehold water use, our estimate for urban water consumption in 1995 indicated an even higher figure for groundwater abstraction — from a low of about 280,000 to a high of 390,000 cum/d. Whatever the correct estimate may be, it is clear that Metro Cebu’s groundwater aquifer is rapidly being depleted. Considering that the estimate of natural recharge rate (a measure of safe or sustainable groundwater yield) ranges from 130,000 to 160,000 cum/d, which is only about half of the above estimates of groundwater abstraction, it is not surprising that saltwater has intruded into the coastal areas and pumping costs have increased as the water table has fallen.

Future sources of water supply

Until 1997, the MCWD increased its production capacity by exploiting more groundwater resources and reducing the rate of nonrevenue water through investments under “Program I.” Between 1986 and 1997, water production increased from about 79,000 up to 122,000 cum/d and nonrevenue water rate declined from 52 to 38 percent. The MCWD investments included the construction of a wellfield at Compostela in northern Cebu and the implementation of Phase I of the Mananga River project as part of “Program II.” These two projects, however, have not been fully operational for a number of reasons.

In terms of the Compostela wellfield, although it was completed way back in 1992, the local government has continually refused to allow its operation because of fears of possible adverse effects on the pumping yields of small wells within the area which are used for domestic and irrigation purposes of vegetable farms. The local government’s refusal is supported by its autonomy under the Local Government Code as well as the lack of clear guidelines and mechanisms for resolving conflicts related to inter-LGU water transfers or competing intersectoral use of water. Thus, the Compostela wellfield has remained nonoperational and unproductive while the infrastructure investment had depreciated over time.

Meanwhile, for the Mananga Phase I project, construction began in 1993 but until now, it remains unfinished due to the contractor’s inability to procure and install the multilayer sand filter over the artificial recharge area at a cost that could be sufficiently covered by the remaining undisbursed funds of 5 percent of the project cost. Without the artificial recharge system, the safe yield of the aquifer will be lower and a large part of the investments in pumping capacity, diversion weir, and other structures will be wasted. Nonetheless, the project began operation in late 1997, producing way below its target capacity and at rates which are unsustainable over the medium and long term.

So far, there have been a number of efforts to develop surface sources of water supply but no project has materialized. In 1991, the feasibility study for the Mananga Phase II was completed by the Electrowatt Engineering Services (EES) for possible funding by the Asian Development Bank (ADB) but with the Mananga Phase I still unoperational, no action was taken. In the meantime, an unsolicited build-operate-transfer (BOT) proposal for the Mananga Phase II from the Johan Holdings Berhad was accepted in 1994, which simply adopted the design by the EES feasibility study. In 1996, another unsolicited BOT proposal recommended the importation of treated water from the Inabanga River in Bohol through submarine and overland pipelines between Inabanga in Bohol and Cordova in Mactan Islands.

None of these proposals have been approved because of the apparently high price (at P20/cum at the old peso-dollar exchange rate) pro-
posed for the bulk water to be sold to MCWD. More importantly, these proposals required national government guarantees of purchase, something not allowed under the unsolicited BOT category. Unlike solicited BOT proposals which are evaluated through an open competitive bidding procedure, unsolicited BOT proposals are like negotiated contracts which may be contested by anyone within a 60-day period. In addition, unsolicited BOT proposals may be acceptable only for projects offering innovative technologies or ideas which — strictly speaking — do not apply to either of the two proposals.

Projecting Metro Cebu’s water demand
In terms of water demand, our review of the methodologies used in past studies suggests that projections of future water demand may have been underestimated, particularly the estimates for nonhousehold uses of water. Limited data and empirical analysis of demand relationships for nonhousehold uses of water as well as the crude nature of the estimates according to lot area have made projections for industrial, commercial, and other water demand quite problematic. For household demand, meanwhile, past studies assumed the base year per capita consumption of poor households (about 40 cum/capita) to be way below the average household per capita water consumption (about 180 cum/capita) based on observations of consumption of households connected to MCWD and adjusted upwards to correct suppressed demand arising from water rationing.

However, our study indicates that the lower water consumption of poor households reflects not only the effect of differences in income but, more importantly, the higher price that the poor households had to pay for vended water, which is about 5 to 10 times the regular price. To address the weaknesses of past projections, two alternative water demand projections (PIDS1 and PIDS2) were made. The main difference from past studies is the higher estimate of base year and projected water demand for nonhousehold uses. Given the limited data and lack of theoretical basis, nonhousehold water demand in this study was estimated by adopting the ratio of industrial and commercial usage to total water consumption commonly observed internationally. A high estimate is made by assuming a ratio of approximately 50 percent (PIDS2). A low estimate (PIDS1) is also provided where a ratio of industrial and commercial to total water consumption at 30 percent is assumed. Both ratios, however, are higher than those obtained in other projections. For example, for CIADP, it was 12-15 percent; for Expertelligence, 26 percent; and for the Electrowatt study, 20-30 percent.

Figure 1: Alternative Water Demand Projections for Metro Cebu (1995-2020)
Our household demand projection for water is based on a higher projected population growth rate than the Electrowatt study but lower than those assumed in the other studies. Moreover, instead of making separate demand projections for the poor and the rest of the population, a relatively low rate of average per capita water consumption (150 lcpd, and increasing by 1 percent per year) was applied for the whole population.

On the whole, our projected total water demand is generally higher than past projections: the low estimate (PIDS1) is about 20 percent higher while the high estimate (PIDS2) is as much as 60 percent higher than earlier projections. These are shown in Figure 1.

A gap in the demand and supply of water

To see how the water demand could be met, the alternative demand projections were overlaid with the projections of net water supply and the amount of water available for sale by MCWD (Figure 2). By 2000, it is assumed that both the Mananga Phase I and the Compostela wells will be fully operational. The projected net supply figure for 2005 will include expected supply from Mananga Phase II and Lusaran dam, the 2010 projection will include water from Phase I of the Cebu-Bohol project and the 2015 projection will include expected supply from Phase II of the said project.

The overlay indicates that even with the successful operation of the Compostela wellfield and Mananga Phases I and II, groundwater mining will continue to worsen. In fact, the PIDS1 projection indicates that only with the development of all the proposed surface water supply expansion projects can groundwater depletion in Metro Cebu be controlled, albeit only temporarily as total demand will exceed total supply from all projected sources by 2020. Based on the highest estimate of safe or sustainable groundwater extraction of 164,000 cum/day (JICA 1998), sustainable private groundwater extraction is only about 52,000 cum/day. If there are no efforts to conserve water and if the future demand for water is closer to the PIDS2 projection, then supply-expansion strategies alone will fail to meet water demand and thereby control groundwater mining.

Closing the gap

Clearly and undoubtedly, then, there is a need to immediately adopt water demand management strategies complemented with efficiency improvements and surface water supply development on the supply side. The key instrument for managing water demand is to institute an optimal water pricing policy wherein the price of water must reflect its full economic cost, including the direct supply or financial cost of production and distribution, the opportunity (or scarcity) cost of water, and the environmental cost or cost of externalities incurred in water production and consumption. Of course, this implies that an optimal water pricing policy will mean higher average water charges since taxes and charges accounting for said costs will have to be imposed.

Studies by Largo et al. (1998) and Inocencio et al. (1998) on household and industrial and commercial demand for water show significant price responsiveness, implying that there is a large scope for reducing water demand-supply gap by raising water tariffs and imposing raw water charge, sewerage fee and effluent tax. The current pricing policy structure fails to
Backgrounder: R&D

The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines research and development (R&D) as any systematic and creative work undertaken in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of said knowledge to devise new applications.

R&D activities include basic research, applied research, and experimental development.

Basic research involves any experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular or specific application or use in view. Applied research, on the other hand, encompasses any original investigation undertaken to acquire new knowledge which is directed primarily towards a specific practical aim or objective. Meanwhile, experimental development comprises any systematic work, drawing on existing knowledge gained from research and/or practical experience that is directed to producing new materials, products and devices, and to substantially improving those already produced or installed.

R&D link to economic growth

There is strong empirical evidence that countries with high levels of effort in R&D normally have high productivity and economic growth performance. R&D activities propel and sustain long-term economic growth. In particular, R&D activities create technological innovation which in turn leads to productivity increases and finally to economic growth and prosperity.

Major sectors conducting R&D in the Philippines

In the Philippines, there are four major sectors that are doing R&D, namely, (1) higher education, both private and state universities and colleges; (2) government agencies; (3) nongovernment organizations; and (4) private industry.

To estimate the R&D activities of state universities and colleges (SUCs) as well as government agencies for the period 1993 to 1996, the Philippine Institute for Development Studies (PIDS) and the Department of Budget and Management (DBM) conducted a survey among these institutions in 1998. To cover the R&D activities of the private sector for the same period, meanwhile, the Department of Science and Technology (DOST) and the National Statistics Office (NSO) did a similar undertaking among private sector entities.

In order to come up with the overall estimates of R&D activities at the national level, the PIDS study commissioned by the DBM also estimated the R&D activities of private universities and nongovernment organizations, albeit using only the broad totals.

The summary results outlined in this article, however, cover only the findings of the survey done by the PIDS on SUCs and government agencies.

R&D public expenditures survey
Survey population and respondents

The survey conducted to estimate public expenditures on R&D identified a total of 412 institutions, divided into 178 government institutions and 234 SUCs and government vocational and technical schools or VOCTECHS. Of this number, 210 institutions responded. From the latter, only 141 were found to be engaged in R&D activities, 72 of which were government agencies and 69 SU Cs and VOCTECHS.

Major findings

There was a deceleration in the growth of R&D expenditure of both government agencies and SUCs despite the annual increases in the budget. The growth rate of R&D was an impressive 19 percent in 1994 but decelerated to 16 percent in 1995 to a low of 10 percent in 1996 (Figure 1).

For government agencies in particular, the deceleration in growth was significant in 1996 when they posted an 8.4 percent growth rate.

In the case of SUCs, meanwhile, the deceleration was pronounced in 1995 when there was only a 3 percent growth rate as compared to an 11.4 percent rate in 1994. Notably, there was a considerable growth of almost 20 percent in 1996.

With regard to sources of R&D funds, the largest share comes from the institutions’ own funds for R&D activities (which largely come from the government’s appropriation for research and development). The share of the government (other than from the appropriation) also contributed a respectable amount. On the other hand, a much smaller share is contributed by foreign and private sources. These results manifest the very weak link between government-owned R&D institutions and the private sector (Table 1).

R&D activities for both government agencies and SUCs are mostly focused on applied research. At the same time, experimental development also captures a sizeable share of R&D expenditure.

In terms of field of activity, agricultural sciences capture the largest share followed by engineering and technology, natural sciences and social sciences. This is true for the total as well as for either government agencies and SUCs (Figure 2).

In terms of types of R&D personnel, around 60 percent are in the category of scientists and engineers, both for fulltime and parttime. These scientists and engineers are mostly in agricultural sciences, social sciences, and engineering and technology (Table 2).

For fulltime R&D personnel, around 60 percent have BS/BA degrees. A tiny portion have PhD degrees and about 10 percent have MS/MA degrees. However, for parttime personnel, the picture dramatically changes. Only a little more than 40 percent have

Table 1: R&D expenditure according to sources of funds (government agencies and SUCs), in thousand pesos

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<tr>
<td>Government Funds</td>
<td>204,174</td>
<td>181,796</td>
<td>243,948</td>
<td>282,092</td>
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<tr>
<td>Institution’s Own Funds</td>
<td>319,950</td>
<td>90,199</td>
<td>485,848</td>
<td>560,537</td>
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<tr>
<td>Foreign Funds</td>
<td>35,232</td>
<td>200,248</td>
<td>45,286</td>
<td>11,320</td>
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<td>Private Sector</td>
<td>989</td>
<td>15,568</td>
<td>1,615</td>
<td>3,430</td>
</tr>
<tr>
<td>Total</td>
<td>560,345</td>
<td>666,556</td>
<td>776,697</td>
<td>857,379</td>
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BS/BA degrees, 35 percent have MS/MA degrees and 15 percent have Ph.D. degrees (Figures 3 and 4).

One reason that may explain this change is that R&D personnel with high educational attainment are doing part-time as well as consulting jobs which pay a lot better than fulltime jobs. Especially with wage standardization, there are no incentives for people who have advanced degrees to work for the government on a full-time basis.

Fulltime R&D personnel (about 40 percent) with Ph.D. degrees are in social sciences, 35 percent are in agriculture sciences and 20 percent in natural sciences. Only about 5 percent are in engineering and technology. Meanwhile, 35 percent of part-time R&D personnel with Ph.D. degrees are in agriculture sciences; 25 percent in social sciences; 20 percent in medical sciences; 15 percent in humanities; and

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<tr>
<td>Agricultural Sciences</td>
<td>268,482</td>
<td>306,091</td>
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<td>Engineering and Technology</td>
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<td>Medical Sciences</td>
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<td>Natural Sciences</td>
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<td>84,995</td>
<td>84,073</td>
<td>77,519</td>
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<td>Biological Sciences</td>
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<td>42,291</td>
<td>43,380</td>
<td>30,292</td>
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<tr>
<td>Environmental Sciences</td>
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<td>18,396</td>
<td>13,126</td>
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<td>Mathematical Sciences</td>
<td>132</td>
<td>900</td>
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<td>Physical Sciences</td>
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<td>23,408</td>
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<td>Social Sciences</td>
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<td>Humanities</td>
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<td>21,895</td>
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<td>Others</td>
<td>23,209</td>
<td>37,224</td>
<td>68,351</td>
<td>58,303</td>
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<tr>
<td>Total</td>
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Table 2: R&D personnel, by category (in percent)
R&D gaps are defined as factors that have prevented the economy or the sector from operating at its full potential in terms of productivity. These factors could be in the form of (a) low R&D investments and inadequate manpower; (b) institutional weaknesses as a result of poor system, management and leadership; (c) policy lapses and failures; and (d) combination of all three.

Cororaton (1998) attempted to estimate the R&D gaps in the Philippines through the use of a growth regression model using total factor productivity (TFP) of different countries, on the one hand, and the respective R&D spending and manpower of a particular country, on the other.

He then came up with a “world TFP frontier” which can serve as a basis for computing R&D gaps.

He noted that in terms of R&D investments/expenditure, the gap in the Philippines is 0.5778. That is, the R&D expenditure to GNP ratio would have to increase by 0.5778 for the Philippine TFP to reach the world TFP frontier. For instance, if the average R&D expenditure to GNP ratio during the 1980s was 0.1667 percent, the total R&D expenditure to GNP ratio needed is 0.1667 + 0.5778 or 0.7445 percent.

Applying the 0.7445 percent to the 1997 GNP of P2,527 billion will result to a total R&D expenditure of roughly P18.8 billion (P2,527 x 0.7445%). At present, the Philippine R&D spending is approximately P3 billion. The difference between P18.8 and P3 billion is a significant R&D investment gap of P15.8 billion.

Manpower gap

Another equally important issue surrounding R&D is manpower.

In almost all sectors, the lack of adequate manpower surfaces out. It is problematic because it is not only difficult to reform but its effect would take a long time to be realized if ever reforms are successfully implemented. It would take about 15 to 20 years to complete such reform.

Cororaton’s computation resulted in an R&D gap in manpower of 197 scientists and engineers per million population. That is, the R&D manpower of the Philippines would have to increase by 197 to reach the world TFP frontier. The average ratio in the 1980s was only 108. Thus, the total R&D manpower needed for the Philippines to close the gap is 305 scientists and engineers per million population (108 + 197).

It was observed that the R&D manpower gap is due to the relatively
Agricultural sciences capture the largest share of researchers. The public sector’s support for agricultural research is necessary to further promote technical change in agriculture as well as in the preservation of the sustainability of our natural resources.

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Who will fill the gap?

Clearly, the Philippines suffers from a large R&D gap. Translated into peso terms, the R&D gap is estimated to be around P14 billion in current prices. Said amount cannot be feasibly financed by the government alone since it is also pressed with equally important concerns like basic infrastructure, education, and health, among others. Moreover, it will be totally ineffective and inefficient to reallocate existing limited government resources in favor of R&D unless institutional inefficiencies in the R&D system and structure are addressed.

Logically, then, it has to be the private sector, either local or foreign, who will have to fill in the gap.

Incentives for the private sector

For the private sector to be encouraged to invest more in R&D, though, there has to be a set of incentives to be put into place. Among these, which are...
account for the scarcity cost of groundwater since raw water continues to be free for the MCWD and non-MCWD users. Neither does the pricing policy consider the environmental costs of domestic and industrial wastewater since no appropriate sewerage charges and effluent taxes have been levied.  

Although the current water pricing policy of the MCWD covers only the financial cost of production and distribution (including the capital and operation and maintenance costs), its water tariffs are relatively high in comparison to other water districts in the country (Table 2). For instance, for water consumption below 30 cum/month, MCWD’s water tariff at P11.76/cum is higher than in most major cities. By contrast, Metro Manila now has the lowest water charges among water districts in the country with the privatization of the MWSS.

Besides a rethinking of the present pricing policy for water, there also seems to be a lot of room for increasing the efficiency level of MCWD operations. As such, this option should be pursued vigorously considering the already relatively high water tariffs which burden largescale users and the high cost of surface water supply development.

For example, MCWD’s nonrevenue water rate is 38 percent as compared to a 30 percent overall average for developing countries and 10 percent for more efficient water utility firms. The number of MCWD employees per 1000 connections is 9.3 compared to 4.6 in Bangkok, 1.1 in Kuala Lumpur and 2.0 in Singapore. There is a need to improve in these areas. The problems encountered in the operation of the Compostela wells and completion of Mananga Phase I which have significantly reduced returns to these investments also indicate the need to improve the legal framework for effecting inter-LGU water transfers and upgrading the institutional capacity for implementing water supply expansion projects in order to minimize losses in capital investments.

Meanwhile, privatization of MCWD can be expected to lower the financial cost of operation. But this is so if the process is conducted in a transparent and competitive manner and if a competent regulatory office is put in place. 

### Table 2: Water charges of selected water districts

<table>
<thead>
<tr>
<th>Water district</th>
<th>Minimum charge (peso per cu.m/month)</th>
<th>Consumption bracket (cum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Cebu</td>
<td>90.65</td>
<td>10.00 11.76 32.26 32.26</td>
</tr>
<tr>
<td>Metro Manila a</td>
<td>19.60</td>
<td>2.15 2.20 2.20 3.71</td>
</tr>
<tr>
<td>East Zone</td>
<td>(7.78)</td>
<td>(0.95) (1.00) (1.00) (2.37)</td>
</tr>
<tr>
<td>West Zone</td>
<td>29.40</td>
<td>3.33 5.36 5.36 6.70</td>
</tr>
<tr>
<td></td>
<td>(16.69)</td>
<td>(2.03) (3.87) (3.87) (5.09)</td>
</tr>
<tr>
<td>Dasmariñas</td>
<td>35.00</td>
<td>6.00 6.75 7.75 8.90</td>
</tr>
<tr>
<td>General Santos</td>
<td>50.00</td>
<td>5.60 6.08 7.04 8.00</td>
</tr>
<tr>
<td>Davao City</td>
<td>50.00</td>
<td>5.25 6.80 9.00 15.00</td>
</tr>
<tr>
<td>Dumaguete</td>
<td>54.00</td>
<td>5.50 6.50 7.50 8.50</td>
</tr>
<tr>
<td>Olongapo</td>
<td>57.00</td>
<td>6.05 6.90 8.15 8.15</td>
</tr>
<tr>
<td>Laguna</td>
<td>58.50</td>
<td>5.85 6.90 8.40 9.85</td>
</tr>
<tr>
<td>Subic</td>
<td>72.00</td>
<td>8.00 9.00 10.50 10.50</td>
</tr>
<tr>
<td>Metro Iloilo</td>
<td>80.00</td>
<td>8.00 8.80 10.40 10.40</td>
</tr>
<tr>
<td>Metro Siquijor</td>
<td>99.00</td>
<td>14.70 16.30 18.40 18.40</td>
</tr>
<tr>
<td>Tagaytay</td>
<td>110.00</td>
<td>5.80 7.05 9.05 11.85</td>
</tr>
<tr>
<td>Baguio City</td>
<td>120.00</td>
<td>13.50 15.00 17.00 17.00</td>
</tr>
</tbody>
</table>

aFor Metro Manila, these charges refer to households and include currency adjustment, and environmental fee. Figures in parenthesis refer to water tariffs alone. For other water districts, there is no price differentiation across types of users.

Sources: Local Water Utilities Administration (LWUA) and Metropolitan Waterworks and Sewerage System (MWSS).
It should be emphasized, too, that optimal water pricing may be expected to improve the quality of water service and of the poor households' welfare if the pricing policy will lead to the poor households' greater direct access to MCWD water. With a limited supply of MCWD water, our survey showed that most poor households have to rely on vended water that are typically priced at 5 to 10 times higher than the official price of MCWD water even though the suppliers are neighbors with MCWD connections (Table 3). Furthermore, Table 4 shows that with a limited access to MCWD water, the average cost of water by income class reflects a highly regressive nature of the actual water cost structure despite the progressive character of the MCWD pricing structure. Hence, since imposing raw water and domestic sewer charges as part of a more efficient, equitable, and sustainable management of urban water resources will lead to a lower-priced MCWD water, providing poor households greater access to MCWD water connections will then lower the effective cost of water for them.

Moreover, optimal water pricing need not threaten the competitiveness of industrial and commercial firms. There is widespread evidence in developed countries that higher water tariffs and effluent taxes have reduced water consumption without impairing industrial growth. Firms responded by modifying processing and cooling methods, and adopting water reusing and recycling practices. There is likewise a strong potential for water conservation and use of water saving technologies by households.

### The right mix of policy and institutional reforms

As mentioned in the early part of this paper, there are a number of reforms affecting policy and institutional arrangements which can help promote efficiency, equity, and sustainability in Metro Cebu’s urban water resource management sector. To sum up, these include the following:

* Formulation of a water pricing policy that covers full economic costs of urban water use. A raw water charge must be imposed on the MCWD and self-supplied water users which reflects the opportunity cost of water and the environmental cost of water extraction from surface or groundwater sources. Sewerage fees must also be introduced among customers of the MCWD and self-supplied water users to cover the cost of regulation and sewerage disposal system. Taxation of industrial effluents should likewise be institutionalized as part of Metro Cebu's environmental management program.

At the same time, the progressive water tariff structure should be maintained to provide cross-subsidy to the poor and encourage water conservation. However, the wide water tariff differences between small and large users, or between households and commercial/industrial users, need to be narrowed down to further discourage groundwater pumping by large users as they shift to piped water.

* Channelling of government revenues raised from raw water charges, effluent taxes and sewerage fees into

---

**Table 3: Average cost of water and its distribution in Metro Cebu (1997, by source)**

<table>
<thead>
<tr>
<th>Source</th>
<th>% of households</th>
<th>Average cost (cu/m)</th>
<th>Monthly income (/capita)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCWD</td>
<td>33.9</td>
<td>12.0</td>
<td>2503.2</td>
</tr>
<tr>
<td>Private waterworks</td>
<td>4.1</td>
<td>12.6</td>
<td>7645.7</td>
</tr>
<tr>
<td>Self-supplied</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deepwell</td>
<td>15.9</td>
<td>56.5</td>
<td>1370.8</td>
</tr>
<tr>
<td>Artesian well</td>
<td>2.4</td>
<td>0.0</td>
<td>1293.4</td>
</tr>
<tr>
<td>Public faucets</td>
<td>9.7</td>
<td>14.1</td>
<td>1427.2</td>
</tr>
<tr>
<td>Water vendors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCWD water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pick-up</td>
<td>9.2</td>
<td>76.3</td>
<td>1189.0</td>
</tr>
<tr>
<td>Hose (container)</td>
<td>1.1</td>
<td>59.8</td>
<td>1696.7</td>
</tr>
<tr>
<td>Hose (fixed)</td>
<td>*</td>
<td>53.2</td>
<td>1200.0</td>
</tr>
<tr>
<td>Delivered</td>
<td>*</td>
<td>106.4</td>
<td>750.0</td>
</tr>
<tr>
<td>Pick-up (fixed)</td>
<td>*</td>
<td>66.5</td>
<td>4000.0</td>
</tr>
<tr>
<td>Deepwell</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pick-up</td>
<td>2.1</td>
<td>76.3</td>
<td>1189.0</td>
</tr>
<tr>
<td>Hose (container)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hose (fixed)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Delivered</td>
<td>*</td>
<td>132.9</td>
<td>1025.0</td>
</tr>
<tr>
<td>Pick-up (fixed)</td>
<td>0</td>
<td>3.4</td>
<td>1100.0</td>
</tr>
<tr>
<td>Multi-Sources</td>
<td>21.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Largo et al. (1998)
**water resource management.** Revenues from effluent taxes and sewerage fees should be used to finance the cost of environmental management. Raw water revenues may be used to finance part of the direct supply cost of surface water development and groundwater replenishment. The same can be used to compensate poor farmers for the reallocation of irrigation water to urban use and to cross-subsidize the poor (especially those who may have to rely on high-priced sources of water supply). Finally, these same revenues should finance the reallocation of irrigation water to urban use and to cross-subsidize the poor (especially those who may have to rely on high-priced sources of water supply).

Among these are: (1) improvement of the statistical database required for proper water resource management such as monitoring of the stream flow of relevant surface water resources, extraction and recharge rate of groundwater, water quality, and others; (2) strengthening of the analytical bases for more accurate water demand projections and water supply and sewerage planning, such as *ex ante* and *ex post* evaluations of potential and completed water supply and sewerage projects; and (3) conduct of long-term research on water resource management issues.

*Institution of reforms meant to improve efficiency in water production and delivery; facilitate intersectoral, interbasin, and inter-LGU water transfers; and strengthen planning, regulatory, and overall public sector water resource management capacity.* Where direct involvement of the public sector has led to inefficiencies in water supply development and operations of water utilities, privatization under a transparent and competitive bidding procedure may be considered. Privatization of the MCWD should thus be considered and pursued. However, the long-term gains from privatization depend largely on the ability of an appropriate regulatory office to monitor performance targets well while ensuring reasonable (not monopolistic) rates of return for private concessionaires. There is an urgent need to strengthen local capability for designing optimal contractual arrangements and performing economic regulatory functions.

The recent surge in unsolicited BOT proposals for the development of water supply projects must be viewed with extreme caution. An example is the Mananga Phase II proposal, which should have been solicited and selected through the usual competitive bidding procedure since the project has been previously identified and feasibility studies have already been done. Because unsolicited BOT proposals and those solicited with haste are typically more costly, the public sector must be more vigilant in ensuring competition and should invest more resources for water supply project planning, feasibility studies, monitoring of implementation and *ex post* project evaluation.

With the passage of the Local Government Code and the naturally limited supply of freshwater in Metro Cebu, mechanisms for interbasin or inter-LGU transfers of water resources will have to be developed. The lack of legal basis and operational guidelines for effecting such water transfers has proven to be very costly in the case of the controversy over the operations of the MCWD wells in Compostela.

The complex nature of water resource management clearly requires a more integrated and holistic approach in addressing the inherently interrelated issues of water supply planning and operation, demand management, pollution control, and watershed and groundwater protection. Thus, the

![Table 4: Average cost of water in Metro Cebu (1997, by income class)](chart)

<table>
<thead>
<tr>
<th>Income class</th>
<th>Average cost (cu/m)</th>
<th>% of water bill to income (cost - income)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under P30,000</td>
<td>34.96</td>
<td>8.78</td>
</tr>
<tr>
<td>P30,000 - 39,999</td>
<td>30.59</td>
<td>4.07</td>
</tr>
<tr>
<td>P40,000 - 59,999</td>
<td>22.37</td>
<td>4.03</td>
</tr>
<tr>
<td>P60,000 - 99,999</td>
<td>24.68</td>
<td>3.22</td>
</tr>
<tr>
<td>P100,000 - 149,999</td>
<td>17.02</td>
<td>2.50</td>
</tr>
<tr>
<td>P150,000 - 199,999</td>
<td>17.50</td>
<td>1.84</td>
</tr>
<tr>
<td>P200,000 - 249,999</td>
<td>10.72</td>
<td>1.67</td>
</tr>
<tr>
<td>P250,000 - 499,999</td>
<td>10.50</td>
<td>0.82</td>
</tr>
<tr>
<td>P500,000 - 749,999</td>
<td>7.06</td>
<td>0.53</td>
</tr>
<tr>
<td>P750,000 - 999,999</td>
<td>8.67</td>
<td>0.34</td>
</tr>
<tr>
<td>P1,000,000 above</td>
<td>11.88</td>
<td>0.78</td>
</tr>
</tbody>
</table>

Source: Largo et al. (1998)
fragmented and relatively weak institutional structure of the water resource management will have to be addressed to ensure effective coordination of policies and programs.

ENDNOTES

1Expertelligence 1997; Inocencio et al. 1998; Largo et al. 1998.


4In Phase I, an infiltration system is envisaged to increase the recharge rate downstream and make use of the storage capacity of alluvial material in the Jaculpay Valley. This project involves the construction of a diversion weir, sedimentation and infiltration facilities, and a wellfield which can produce 33,000 cum/d of water, about three times higher than the natural safe groundwater yield of about 10,000 cum/d.

5Vegetable farming is the main source of livelihood of households residing within the vicinity.

6Apparently, the cost of the specified sand is much higher than estimated. It turned out that the required quantity of that specified sand is not available in the country and the options are to import or to process local sand to suit the specification which may be more costly.

7Phase II is designed to provide an additional water supply of 100,000 cum/d by building a 90-meter high dam upstream of the Mananga Phase I project, a tunnel connecting the reservoir and a proposed treatment plant at Tisa, above-the-ground concrete reservoir, and additional transmission and distribution pipe lines.

8This represents Phase I of the Bohol-Cebu Water Supply Project involving the treatment of water extracted downstream of the Inabanga River to provide 100,000 cum/d of water flow to Cebu and 23,500 cum/d to nearby towns in Bohol (Alliance of Anglo-Philippines Holding Corporation, Brown and Root and Itocha Corporation).

9In fact, the proposed price of bulk water from the Mananga Phase II is substantially higher than the per unit cost estimated by the Electrowatt study. Moreover, in the case of the Bohol-Cebu Phase I proposal, concerns have been raised about the potential political problems associated with inter-LGU transfer as experienced in the Compostela case as well as technical issues related to the reliability of water supply from the Inabanga River during the dry season in the absence of an upstream reservoir which will be constructed only in a Phase II project.

10Largo et al. 1998.

11Similar to the ratios in Bangkok, Kuala Lumpur, and Singapore where the service coverage of the water utility is 100% and to the average ratio generally reported worldwide especially at the early stages of economic development (Renzetti 1992; Water Utilities Data Book 1997).

12The ratio observed in developed countries where a relatively high water price and appropriate sewer and effluent charges have reduced water consumption through adoption of water-saving technological processes as well as recycling and reuse of water.

13Net supply is total supply less nonrevenue water, which is assumed to decrease from 38% of total in 1995 down to 35% in 2000, 30% in 2005, and 25% in 2010 and beyond.

14Future surface water supply expansion projects of the MCWD are prioritized in the following order: the Mananga Phase II, the 100-meter high dam along Balamban River in Lusaran to produce an additional 160,000 cum/d of raw water, the Inabanga River Phase I, and the Inabanga River Phase II which involves the construction of a 60-meter high dam upstream, together with a mini- hydropower and additional water treatment plant for an additional 260,000 cum/d raw water for Metro Cebu.

15Such undervaluation of water and related factors lead to: (a) wasteful usage of water by final consumers and raw water by water utility firms as evidenced by the high rate of nonrevenue water, (b) misallocation of freshwater in favor of less valuable uses, e.g., fishery and irrigation over urban use, (c) worsening of water pollution problems, and (d) failure to invest in the necessary investments for water supply expansion in a timely manner.

16Jaffe et al. 1995.

REFERENCES


fiscal deficit on account of recurrent expenditures, they simply cut back their expenditures during a revenue shortfall. Thus, per capita total expenditure in real terms dropped in 13 out of the 20 LGUs surveyed in 1998.

Even as the social sectors were accorded some degree of protection amidst the fiscal crunch, some deterioration in real per capita total social service expenditures was noted in the survey sample. Ten out of the 20 LGUs had lower per capita expenditures for social services. More specifically, 12 had experienced a decline in per capita real expenditures on basic health services.

Many LGUs also imposed an across-the-board 25 to 30 percent cut on nonpersonnel recurrent expenditures. One of the areas badly hit was the maintenance and other operating expenses (MOOE) in the total social service sectors. Fifteen LGUs had lower per capita M O O E expenditures in 1998 compared to that in 1997. And again, in particular, per capita MOOE spending in basic health services declined, as noted, in 13 LGUs.

Social impact of the crisis

Employment

The financial crisis had an adverse impact on the employment situation. A slower growth in total employment and a faster growth in the labor force resulted in higher unemployment and underemployment rates in 1998. The sectors most hurt were construction, manufacturing, and mining and quarrying. Although the agricultural sector was also hurt, it suffered more as a result of the El Niño phenomenon rather than from direct effects of the crisis.

Results from the FGDs showed that while there was no massive layoff of workers, there was a significant loss of gainful employment. The more affected groups were the urban poor and fishing communities wherein farmers and fisherfolks were forced to abandon their jobs for more viable sources of livelihood. The older workers who were presumed to be more skilled, however, were better able to hold on to their jobs.

A survey of firms undertaken by the Department of Labor and Employment (DOLE) indicated that more firms — twice the number in 1997 — either closed or retrenched in 1998 due to economic reasons. More firms in the service sectors engaged in wholesale and retail trade, financing, insurance, and real estate closed shop in 1998. In fact, the number was three times higher than the 1997 figure.

Thirty percent of the respondents in the household survey experienced lower incomes, a bigger proportion of which were households from upland communities and sustenance communities. The middle-income households were also adversely affected but to a lesser extent. Among the major reasons cited for the decline in incomes were poor harvest due to bad weather, lower product prices, and reduced number of earning family members. The last factor was common especially among middle-income households.

On the other hand, 17 percent of the respondents reported higher income despite of the crisis due mainly to job promotion, increased number of earning family members, better product prices, and new or additional work. Increased financial support from relatives was also cited as one of the main reasons for higher incomes reported in urban poor communities, which indicated a strengthened family support system during the crisis.

Among workers, those employed overseas benefited the most from the crisis because of the higher peso value of their dollar earnings inspite of the decline in dollar earnings and remittances in 1997 and 1998.

While not everyone experienced lower nominal incomes, price increases nevertheless affected everyone as indicated in the decline in the respondents’ real incomes. Inflation rate went up from 5 percent in 1997 to 9 percent in 1998 as a result of the peso depreciation and food supply shortage caused by the El Niño and La Niña phenomena. Food prices alone rose by 6.4 percent. The FGD respondents felt that the sharp increases in prices were not matched by corresponding increases in wages. This implied a weakened pur-
chasing power of households and a decrease in their access to basic services.

The household survey also indicated that the proportion of families who rated themselves poor rose from 40 percent in 1997 to 43 percent in 1999. Such self-rating was highest among fishing and upland communities and among households in urban poor communities. The results were confirmed in surveys done by the Social Weather Stations which showed an upward trend in self-rated poverty between 1997 and 1998. The increase in poverty incidence by itself was not very large but is still a cause for concern because the level is already high to begin with.

It should also be noted that while some households had lower incomes, a significant number of the respondents (38 percent) indicated that their well-being improved in spite of the crisis while another 30 percent said they were unaffected. The least affected were the middle-income communities.

Education
In the education sector, lower enrolment rates and higher dropout rates are the primary effects of the crisis as gathered from the FGDs. These data are most especially true in depressed communities such as the urban poor, sustenance farming, and upland and fishing communities. Among the reasons cited were financial difficulties; inability to cope with higher tuition fees and school expenses; higher transportation, school project costs and similar expenses; and the need to give priority to more essential items such as food. The increase in dropout incidence was more greatly felt in public secondary schools and did not seem to be very large in elementary and private secondary schools.

Based on government reports, the growth in enrolment rate in both elementary and secondary schools for academic years 1997-1998 and 1998-1999 was lower than the historical average. The decline in enrolment in Grade 1 and first year of the secondary level indicated that families have postponed the enrolment of new entrants. Based on the significant drops in enrolment in private schools, it is also speculated that there was a shift in enrolment from the private to public schools at the elementary level.

Health

The more significant and evident impact of the crisis on the health sector as perceived by the FGD respondents was the reduced availability of medicine supplies and vaccines and other health services such as immunization. The FGD respondents complained of poorly-maintained health facilities and suspended free health services. These observations were consistent with the drop in government health expenditures both at the national and local levels.

Vulnerable groups

The financial crisis also affected the disadvantaged groups. In the case of farming communities, the severity of the El Niño phenomenon aggravated the situation. Among farming and fishing communities, the crisis had an impact on the prices of agricultural inputs. Although fisherfolks faced better market price for their produce, it was not enough to offset cost increases. The situation was worse for farmers who could not sell their produce at higher prices as they were usually at the mercy of traders and landowners.

Meanwhile, the adverse effect of the crisis on children and youth was evident through the coping mechanisms...
To establish social safety nets and assist displaced workers.

To cushion the poor from economic difficulties, the government carried out various measures consisting of food and health care assistance to vulnerable groups affected by the crisis and the drought.

Adopted by poor families which, in general, have compromised the health, education and overall development of these young individuals. Women, on the other hand, had to stretch the household budget and took on the additional burden of taking on income-earning opportunities as well as looking for access to credit sources to pay off previous loans.

With regard to the country's social fabric, it seems to have been left relatively unscathed by the financial crisis. Inspite of the economic and financial difficulties faced by individuals and families, communities in general have remained peaceful. Only a few communities, particularly the urban poor and fishing villages, showed an increased frequency of drug-related problems and criminal incidents.

Responses to the crisis and coping mechanisms

Many sectors responded to the crisis by employing distinct and individual coping mechanisms. The business sector, for instance, which was doubly hit by the crisis through weaker demand and higher costs, resorted to cost-cutting measures such as freezing of salary increases and cutting down of working hours. Meanwhile, the coping mechanisms employed by households included looking for additional income-earning opportunities and adjusting their respective household budgets. The government, on the other hand, implemented certain measures to establish social safety nets and assist displaced workers.

To cushion the poor from economic difficulties, the government carried out various measures consisting of food and health care assistance to vulnerable groups affected by the crisis and the drought. These included the establishment of sari-sari stores that would sell basic food commodities at lower prices, continuation of the program on the comprehensive and integrated delivery of social services (CIDSS) to address the unmet needs of the poor, selling of rice at discounted prices by the National Food Authority (NFA) rolling stores in targeted poor municipalities, and other forms of emergency assistance.

The government also provided assistance to displaced workers in rural works projects specifically in Mindanao and in the CARAGA region; an emergency loan package for displaced sugar workers; job facilitation services; loan programs and measures to ease repayment of loans by SSS members; and training and retraining intervention program through the Technical Education and Skills Development Authority (TESDA).

Based on the "Survey of Philippine Industry and the Asian Financial Crisis" undertaken in late 1998 by Mario Lamberte and Josef Yap of the PIDS, many manufacturing firms cut down on the number of work hours or days to minimize job losses. Other firms implemented cost-cutting measures like the freezing of salary increases, imposition of forced vacation, enforcement of compressed work week, and implementation of salary cuts as undertaken by a small number of firms. The FGD results also cited other cost-cutting measures such as job rotation, longer working hours without additional pay, hiring of workers on a contractual basis, and employment of women at below minimum wage.

Many of those who lost their jobs, based from the FGD results, sought some part-time work in retail trade and other odd jobs. In households where the males were displaced, women augmented the household income by seeking jobs, going into direct selling or setting up sari-sari stores or carinderia. In certain cases, children were also forced to work as laborers or domestic helpers.

Most households had to adjust their budgets to cope with the rising costs of essential items such as food, education, medical/health, transportation and housing expenses.
nonessentials, having one viand per meal, eliminating snacks, sleeping longer hours, and resorting to cheaper food substitutes.

To meet their financial needs, majority of the households surveyed likewise resorted to borrowing money, mostly from the informal sector or from relatives and friends. When credit was not accessible or available, some households sold their assets.

**Assessment of existing monitoring systems**

Most of the studies on the impact of the crisis had to rely on very limited information because of the inadequacy of existing monitoring systems to assess the social impact in terms of timeliness, identification of affected sectors, and provision of a full picture of the impact on the affected sectors. Unlike economic indicators, social indicators are generally fewer and are not collected frequently. Some data are available at the local level but it takes a long time before they are collected at the national level. On the other hand, some indicators are too aggregated to provide useful information for targeted interventions. These problems have made the provision of an appropriate and timely response to the crisis very difficult.

At the national level, there is no single monitoring system that tracks the country’s performance vis-à-vis the different aspects of human development. There are different data sources that can provide indicators on the different dimensions of welfare but a more comprehensive and integrated assessment and analysis is done only about every three years when the national development plan is either formulated or updated.

Recently, there had been various efforts at the community level to come up with community-based monitoring systems. These are integrated with various projects like the following: Micro Impacts of Macroeconomic Adjustment Policies (MIMAP); Comprehensive and Integrated Delivery of Social Services (CIDSS); and the Minimum Basic Needs (MBN) of the former Presidential Commission to Fight Poverty (PCFP), which is now merged with the newly-created National Anti-Poverty Commission (NAPC). The experiences of these projects could be used to establish a community-based monitoring system that could serve as the anchor for a national social monitoring system.

**Conclusions and recommendations**

It is clear that the 1997 financial crisis, together with the El Niño and La Niña phenomena, has affected the vulnerable groups through reduced employment and higher prices which resulted in lower real incomes. This condition forced the affected households to look for other income opportunities and make adjustments in their spending and consumption patterns. Because of financial difficulties, the households’ need for public social services increased. Unfortunately, because of the fiscal crunch, the delivery of social services, especially in health, by the government suffered.

On the whole, the social impact of the crisis in the Philippines does not appear to be very serious relative to the crisis-related experiences in Indonesia and Thailand as initially reported. On the other hand, some indicators are too aggregated to provide useful information for targeted interventions. These problems have made the provision of an appropriate and timely response to the crisis very difficult.

In view of the importance of providing timely and adequate information on the social impact of a crisis to come up with an immediate and effective response, it is necessary that an appropriate monitoring system be put in place.

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The country's welfare situation was already very serious to begin with and any further slippage, no matter how small, is thus not acceptable.

Sadly, an adequate social response system is lacking in the Philippines to address the adverse impacts of shocks. Traditional household-based safety nets dominated the government-provided safety nets and these were insufficient and very limited in coverage.

On the fiscal side, it is unfortunate that the provision of basic social services was curtailed when these were most needed. Worse, access to the services by affected persons or families was not assured under the present social service delivery system. This problem was reinforced by the absence of a strong monitoring system that would identify target individuals and groups.

How then can the problem be addressed?

There are two ways that may be considered by the government and other concerned parties, namely:

One, necessary resources should be made available to reach identified families or individuals at the right time.

Analysis indicated that although the social service sectors were protected from the fiscal crunch relative to other sectors, the large shortfall in government revenues effectively reduced the budget coverage of basic social services. Undoubtedly, there was a need for additional sources to finance the deficit. Domestic borrowing, however, carries the risk of raising local interest rates which may then stifle nascent recovery efforts.

Thus, there is a need for government to look at external sources of finance such as assistance from donor agencies in the form of budget support. Given this perspective, such budgetary support may be arranged with conditions on government commitments to (1) increase resources allotted to the social service sectors, and (2) rationalize the allocation of resources within the social service sectors.

Two, a more effective allocation and utilization of resources should be ensured through well-focused targeting mechanisms and effective projects which are foreseen to have immediate or significant impacts. A targeting mechanism that is more community-based and can be brought down further to the barangay level should be pursued.

The barangay is deemed to be the most appropriate focal point for identifying beneficiaries, determining their needs, and delivering the required services. The minimum basic needs (MBN) approach which promotes participatory planning at the community level can be strengthened and supported.
To support a community-based targeting mechanism that will provide timely and adequate response to a crisis, a strong social monitoring system has to be established and maintained. The following are the recommended functions of the system: 1) Obtain and integrate existing information from various sources (administrative reports, official statistics, censuses and surveys) at the national, provincial/city and community levels; 2) Create appropriate data banks in each geopolitical level; 3) Strengthen and expand the MBN community-based information system; 4) Integrate the community-based monitoring system with the local planning process; and 5) Designate an agency responsible for the coordination and maintenance of the social monitoring system and the reporting of performance results.

In addition to ensuring the availability of resources and adopting a community-based targeting mechanism, specific issues in various areas of concern have to be addressed. The specific recommendations along this line are as follows:

* **Access to basic commodities.** Support programs that enhance access of targeted beneficiaries to basic commodities during crises.

* **Employment.** Undertake pump-priming programs that will create employment opportunities. The use of more labor-intensive techniques in infrastructure projects and the adoption of the Community and Employment Development Program (CEDP) is recommended.

As a medium and long-term strategy, address structural problems that persistently cause high unemployment. This should be tied to the agriculture modernization program and to efforts that will address the weaknesses in the manufacturing sector. Improved weather tracking, drought resistance seeds and infrastructure support to agriculture should be pursued. Meanwhile, educational reforms should be carried out to ensure that skills are matched with market requirements.

* **Credit.** Promote credit programs that match the collateral base and cash flow of borrowers. Grameen-type programs in providing the poor access to credit should be encouraged. Nongovernment organizations (NGOs) or cooperatives may be tapped in the implementation of these credit programs.

* **Health, Nutrition and Population.** To address structural issues, focus on the provision of primary and public health care services rather than curative care. At the same time, pursue a social insurance-based financing for access to curative care.

For women, provide more consistent support for family planning programs and more human capital investment opportunities. Increase funding for contraceptive supplies to arrest the decline in contraceptive prevalence.

Women should be provided with more human capital investment opportunities. In this regard, the government may promote credit programs that match the women borrowers’ collateral base and cash flow.
considered to be important to R&D activities, are:

* stable macroeconomy – this means managing the inflation rate and interest rate well and keeping risk premiums at a minimum;
* institutional protection – this comes in the form of patents and IPRs;
* access to cheap capital and financing especially by the SMEs – there is a need to eliminate distortions in the financial system to lower the cost of capital;
* good R&D and S&T infrastructure – this is to (a) strengthen the educational system which can produce a work force with adequate R&D capabilities, good and updated data bases and information system; (b) gain wide and easy-to-access network on technology developments; (c) come up with a mechanism whereby Filipino scientists and engineers working abroad can come back home to work; and (d) come up with a mechanism whereby research results and outputs of research institutions and universities can easily be delivered to the end-users;
* fiscal incentives - Patalinghug (1998) suggests that there is a need to “design an incentive package with strict qualifying requirements on what constitutes R&D activities to truly encourage private sector R&D. An external peer review committee is recommended to act as the screening mechanism;” and
* financial grants and remunerations for researchers in government agencies need to be competitive.

Institutional arrangement and S&T coordination system

Finally, there is a strong clamor for reforms in the institutional arrangement and S&T coordination mechanism. In this regard, Patalinghug (1998) made a number of recommendations:

* The Department of Budget and Management (DBM) must be involved with the Department of Science and Technology (DOST) in the S&T plan formulation stage so that resources are available to implement the plan;
* A Science and Technology Coordinating Council (STCC) must draft a Medium-Term Science and Technology Development Plan a year before the drafting by NEDA of the next Medium Term Philippine Development Plan. An inter-agency joint committee must integrate the S&T plan to the NEDA plan by decomposing them into an annual budget plan, annual S&T plan, and annual economic plan, and then harmonizing its goals, projects, programs, strategies, resource requirements and timetables;
* The DOST must establish a Project and Program Monitoring Unit to coordinate the selection of projects through competitive bidding as well as of external evaluators and reviewers for the different projects and programs implemented under the S&T plan; and
* The STCC chaired by the President must meet at least once every three months to address current problems that pose obstacles to the implementation of the S&T plan.

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As a short-term response, provide special support for the immunization program. Well-targeted feeding programs should also be expanded.

* Education. To address the structural issues, rationalize government investments in tertiary education. In basic education, pursue cost-recovery schemes in areas such as textbooks. Efforts at choosing more cost-effective options as opposed to that of providing an elementary school in each barangay and a high school in every municipality should be made. Providing bus service and dormitory housing for students in far-flung areas should be considered.

Short-term measures should include the redesigning of the Government Assistance to Students and Teachers in Private Education (GASTPE) program to allow an increase in the support value of the subsidy. Out-of-pocket costs, on top of the usual coverage, should be considered.

**Water**


