

Managing the Environment and Natural Resources: *Lessons from City Program Innovations*

Local governments today have a greater role in managing their environment with the enactment of the 1991 Local Government Code. The Code gave local governments full responsibility to chart their own environmental destiny which, in the long run, also means their survival as a polity. Think of the implications of a city buried under its own trash and you get the picture.

For that matter, local governments now have sole responsibility over the management of solid waste disposal in their localities and share in the responsibility for tourism development and promotion. Local governments have also been deputized to enforce laws on community-based forestry projects, pollution control, small-scale mining, and mini-hydroelectric projects for local purposes.

Window of opportunity

For some Philippine cities, these added responsibilities of governance were not seen as burdens, but rather as opportunities. Some cities have in fact flourished as a result of city-sponsored environmental programs where others merely paid lip service to the task. The question now is whether the success of a few cities can also be a success in many other cities.

As we shall see in the following narrative, there is real hope for economically-sound environmental management programs making it on a nationwide scale. Although the strategies employed and programs undertaken vary in focus and form, the essence remains the same. The six cities featured here all share the twin qualities of dynamism and innovation. Here's the story of six cities which ventured to make a difference.

Puerto Princesa City: steward of the last frontier

Puerto Princesa, capital city of Palawan, has taken upon itself the task of guarding the country's last frontier before it becomes the lost frontier. Two city-sponsored programs on the environment—*Oplan Linis* and *Bantay Puerto*—gained Puerto Princesa both national and international recognition.

PIDS Policy Notes are observations/analyses written by PIDS researchers on certain policy issues. The treatise is wholistic in approach, and like the PIDS Executive Memo, it aims to provide useful inputs for decisionmaking.

This *Notes* was recast and repackaged by Wilbert R. San Pedro based on PIDS Discussion Paper No. 98-32 of the same title authored by Ruben G. Mercado, Research Associate at the Institute. The views expressed are those of the authors and do not necessarily reflect those of PIDS or any of the study's sponsors.

Oplan Linis. With a land area of 253,982 hectares, Puerto Princesa now claims to be larger than Davao City, making it the largest city in the world. Despite this vastness, the city was able to successfully manage its environment through *Oplan Linis*.

Puerto Princesa's secret for being the cleanest and greenest is the sustained implementation of the *Oplan Linis* program. This was achieved through program institutionalization and community participation. *Oplan Linis* is managed by a full-time staff of one project manager, two assistants and a supervisor each for the project's component programs. The seven components are cleanliness, sanitation, maintenance of coastal areas, beautification, maintenance of air quality, solid waste management and an information and education drive.

Bantay Puerto. Faced with environmental assault in both forests and seas, Puerto Princesa responded with *Bantay Puerto*. The program aims to minimize, if not totally eliminate, illegal logging, *kaingin* farming, and dynamite, cyanide and *muro-ami* fishing. It has four components: city forest protection (*Bantay Gubat*), city coastal areas protection (*Bantay Dagat*), a special task force, and a special monitoring unit. A cyanide detection laboratory was added recently and accredited by the National Bureau of Investigation (NBI) to assist in legal cases of cyanide fishing.

A special task force unit (STFU) and a special monitoring unit (SMU) lend support to both *Bantay Gubat* and *Bantay Dagat*. The STFU evaluates and disseminates intelligence information and maps out a plan of action to stop illegal activities and apprehend violators. It is composed of a task force leader from the Philippine National Police (PNP), a civilian task force leader, ten PNP personnel and nine civilians. Meanwhile, the SMU is composed of ten officers tasked to monitor the program and gather information on specific areas of concern. *Bantay Puerto* is managed by the city mayor assisted by the project managers of each of the program components.

Table 1 gives a summary of the features of this program.

Baguio City: cool changes

Clean and Green Program. For Baguio, the challenge of keeping its environment clean and green has been great considering its multiplicity of roles. Besides serving as the regional administrative center of the Cordilleras, Baguio is also the commercial and retail trade center for agricultural products in Benguet province. Add to this the city's role as center for higher learning in the North and its popularity as a major tourist destination. This wide array of activities entails a higher rate of use of resources that invariably strain the city's environment. The Clean and Green Program is Baguio's way of coping with these strains.

The program was made possible by the partnership among the city government, NGOs such as the Baguio Re-greening Movement (BRM) and *Alay sa Kalinisan* (ASK), and national government agencies. Financing the program was also a joint undertaking. The organizational structure of the Clean and Green Program (Figures 1 and 2) shows the extent to which the program has involved almost everyone. Of course, the involvement of Baguio residents is a recognition of their important role in the sustainability of the program.

The various components and activities of the program are outlined in Table 2.

Eco-Walk Program. Baguio City received the *Galing Pook* Award in 1995 for the program *Eco-Walk: An Environmental Awareness Program for Children*. Through the program, the city officials hope to impart to children a positive value towards the environment. Children are thus accompanied by guides on an eco-walk to the Busol watershed, the city's major source of water.

Due to denudation, the Busol watershed now produces only between 250 to 300 gallons per minute (gpm) from its original generating capacity of 4,000 gpm. The eco-tour hopes to make children aware of the importance

Table 1. Bantay Puerto Program

Program Component	Objectives	Strategies/Activities
<i>Bantay Gubat</i>	<p>To address the alarming reduction of forest cover in Palawan which reportedly decreased from 75 percent in 1976 to 50 percent in 1992.</p> <p>To conserve, preserve and rehabilitate the forest areas of the City, particularly in the identified 24 environmentally critical rural barangays.</p>	<p>Intensify information dissemination campaign regarding preservation and conservation of the City's forests;</p> <p>Strengthen partnership and cooperation of the City with DENR, DA, DILG-PNP, NGOs and PVOs in the enforcement of forest-related laws;</p> <p>Organize and train 24 community-based forest protectors serving as project managers in the identified critical areas;</p> <p>Establish four checkpoints (2 in the north and 2 in the south) equipped with radio communication system and motorcycles;</p> <p>Plan and conduct operations/raids against illegal activities;</p> <p>Apprehend and/or seize illegal forest products, equipments used in the commission of the crime including the violator/s;</p> <p>Investigate/resolve alleged involvement of any government and military official/s or employee/s in illegal logging, timber cutting, gathering or collection of forest products;</p> <p>Endorse to authorities concerned any confiscations or seizures for proper custody; and</p> <p>Organize/create a foot patrol group in most critical areas.</p>
<i>Bantay Dagat (Baywatch)</i>	<p>To lessen, if not eliminate, the depletion of marine resources due to illegal fishing activities.</p>	<p>Daily (average of 8 hours) patrol of the four strategic bays of the City;</p> <p>Intensify information dissemination campaign regarding preservation and conservation of the City's coastal areas;</p> <p>Strengthen partnership and cooperation of the City with government agencies especially the Philippine Coast Guard and NGOs;</p> <p>Maintain six outposts placed strategically in the different bays of the City;</p> <p>Plan and conduct operations/raids against illegal activities;</p> <p>Apprehend and/or seize illegally-caught marine products and equipment used in the commission of the crime including the violator/s; and</p> <p>Endorse to authorities concerned any confiscations or seizures for proper custody.</p>

Sources of basic data: Puerto Princesa City Government Documents (4th City Sharing Workshop Paper and Galing Pook Award¹ Application Materials)

¹The *Galing Pook* Program is a national program that aims to recognize local governance or best practices in the following areas: health services, environmental management, public finance, peace initiatives, integrated approach to development, socio-cultural development, employment generation/livelihood and productivity improvement.

Table 2. Baguio City Clean and Green Program

Program Component	Activities
Solid waste management	Daily garbage collection Organization of Quick Response Team tasked to be on call for emergency garbage collection especially during peak seasons of summer and Christmas Advocacy campaign through training of barangay residents on the 3Rs principle of solid waste management (re-use, reduce and recycle) Local Clean and Green contest Annual purchase of one garbage truck
Liquid waste management	Installation of more lateral and secondary sewer lines Intensified monitoring of pollution levels in creeks and natural and man-made waterways within the city
Environmental sanitation and management	Conduct of regular inspections of food centers, recreational facilities, night spots and transient housing facilities including dormitories and boarding houses in terms of compliance with health and sanitation standards
Abattoir operations	Establishment and strict maintenance of a clean and sanitary environment for the new abattoir facility
Anti-smoke belching	Intensified compulsory testing of all motor vehicles especially diesel-fed vehicles
Parks maintenance and reforestation	Regular maintenance of city parks and street islands Reforestation
Advocacy	Tri-media advocacy campaign to generate people participation and enthusiasm
Source of basic data: Office of City Planning and Development Coordinator (OCPDC), Baguio City, 1997 "Always Clean, Ever Green"	

ernment agencies have since volunteered their services as well.

The city's public information office coordinates the program which started out with minimal funding. Proceeds of a fund drive—earning P50,000—were used to construct a picnic shed. The city has a current standing budget of P20,000 for reforestation tools. The BRM and the *Timpuyog Ti lit* also shelled out P10,000 and P30,000 for the program, respectively. Funds, however, are still needed for a tree nursery, audio-visual equipment and personnel. Some 15,000 elementary school children have already planted 25,000 tree seedlings in the Busol watershed by 1995.

Olongapo City: cash rids trash

American withdrawal from Subic and the Mount Pinatubo eruption spelt economic losses for Olongapo.

of the forest and how they can do their share to conserve the city's water supply.

Eco-Walk is a revival of a 1992 program started out by the Baguio Re-greening Movement which faded quietly in the background for lack of hiking guide volunteers. In 1993, the nongovernment organization *Timpuyog Ti lit*, whose members are mainly *barangay* captains, volunteered its services to the program. Other NGOs and gov-

To attract more investments in the area, one strategy was to improve the quality of the city's environment.

Olongapo City is a pioneer innovator in solid waste management. As with most cities, Olongapo faces two of the biggest problems in garbage management: the people's irresponsible disposal of waste and a disorganized collection system.

Since the city has limited funds for a solid waste disposal system, the next best option was to collect user fees. This was initially met with strong opposition which soon died down with the city government's show of sincerity.

The city's solid waste management program was financially self-sustaining in its first two years through user fees netting some P2 million during this period. Collection of garbage fees dwindled between 1991 and 1993 due to out-migration: the effect of Mount Pinatubo and the American bases withdrawal. When the dust settled, in-migration from returnees and those displaced by the calamity elsewhere swelled the city's population anew. They were lured back by projects under the Subic Bay Metropolitan Authority.

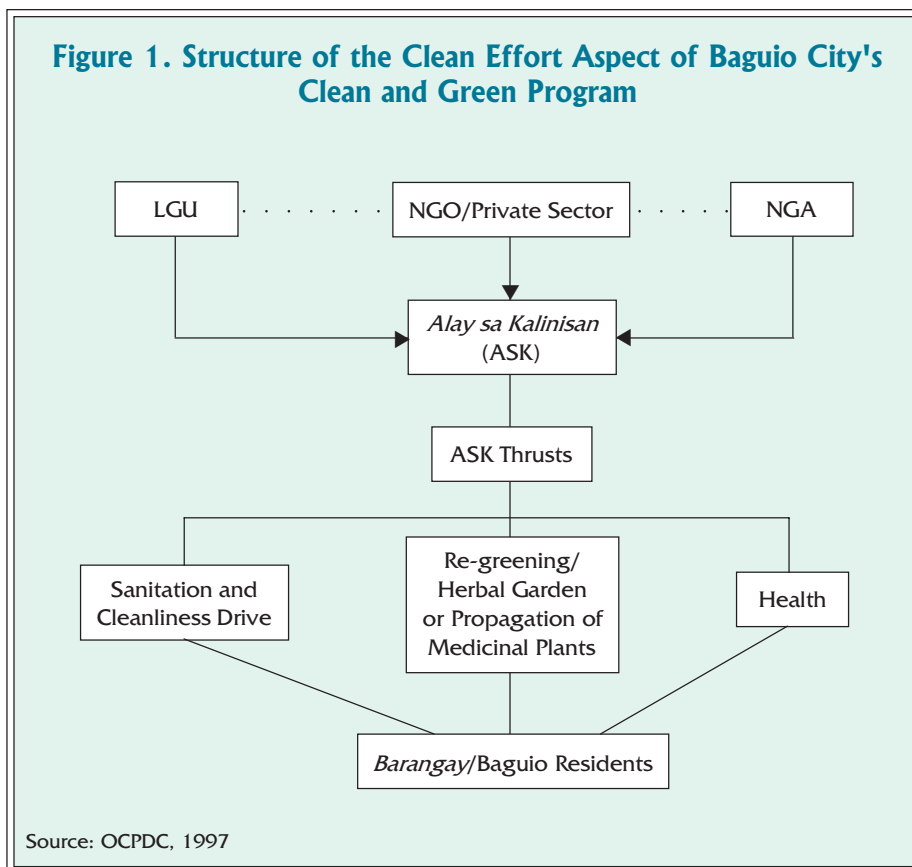
Increasing expenditure on solid waste management and relatively small increases in garbage fees put the program in deficit by 1992 and have contributed to the city's total budget deficit since 1995.

New ordinances to amend the 1989 program of garbage collection fees and use of a landfill site were issued in 1997. They aim to raise cash to sustain the program. The mayor has consulted with the people on new rates which will be up from P10-20 to P30-40 for households and from P30-300 to P50-500 for business establishments.

Table 3 presents the major features of the City's solid waste management program.

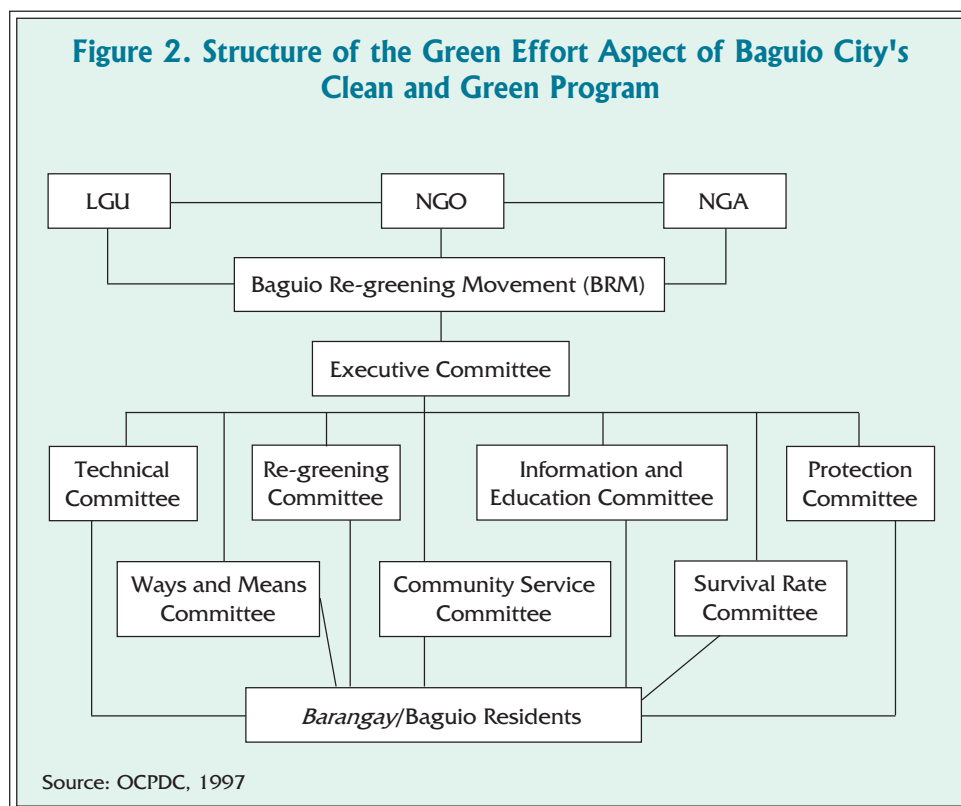
Marikina City: a river runs through it

Started out in 1992, the Marikina River Development Program, more popularly known as the Save the Marikina River Project, has received numerous citations and awards from regional and national bodies. It has been an inspiration to the current efforts to rehabilitate the Pasig river, of which the Marikina river is a tributary.



The original objective was to revert the river area to its traditional use as a people's park: its popular use up to the 1970s.

Since squatter lodgings have lined the river banks, the project has to work in stages. The first task was to resettle the squatters. A resettlement site within the city was therefore chosen. At first, it was thought that convincing the squatters to resettle would be a piece of cake.



This was not, however, the case. Community development experts were hired to mediate and only after a year of discussion were the squatters finally convinced to resettle in the Malanday and Tumana areas. The squatters cooperated mainly because the city ensured that the resettlement sites have water, electricity and sewerage. Since the resettlement area is privately-owned, the city helped the squatters organize themselves and facilitated their enrollment in a community mortgage program that will eventually make them owners of the site they occupy.

Done with the squatter problem, the city's next task was to issue ordinances that would penalize dumping of garbage in the river. A fine of P2000 was set for violators. The ordinance was strictly enforced and those who cannot pay were asked to do community service instead.

Next was the construction of five kilometers of biking, jogging and walking lanes passing through the ma-

jority of *barangays*. Electric lights were installed and park benches put up along the river stretch. In cooperation with the Department of Environment and Natural Resources, 800 ornamental trees were planted along the river banks. Carps, *plaplas* and *tilapias* were seeded and continue to thrive in the river. Numerous structures rose, including playgrounds, picnic groves, camping grounds, basketball courts, a skating rink, a floating restaurant and water fountains.

Today, the Marikina river prides itself as the only biologically-living river in Metro Manila.

From 1993 to 1997, the city spent P34.7 million on the project. It received funding from the national government, P1.6 million of which was funneled through the countrywide development fund of two senators. The private sector donated in kind. The Chinese Chamber of Commerce built a Chinese pagoda while the Marikina Zonta Club designed a Roman garden.

Table 3. Olongapo City Solid Waste Management Program, 1989-present

Component	Activities/Innovations
Collection and monitoring	<p>Residents required to put garbage in plastic bags or else they will not be collected. They are encouraged to use the prescribed plastic bags as follows:</p> <p><i>Yellow</i> plastic bags (dry recyclable wastes) to be collected on following schedule: Zone 1 – Mondays Zone 2 – Tuesdays Zone 3 – Wednesdays</p> <p><i>Green</i> plastic bags (wet biodegradable wastes) Zone 1 – Thursdays Zone 2 – Fridays Zone 3 – Saturdays</p> <p><i>Orange</i> plastic bags (hazardous wastes such as hospital and clinical wastes) to be collected on a designated day and disposed through incineration</p> <p>Collection schedule is strictly followed (twice a week in residential areas and daily in commercial zones and markets).</p> <p>Garbage collectors (called <i>Garbage Technicians</i>) and truck drivers wear uniforms and IDs (to mark professionalism in the service).</p> <p>Sanitary inspectors from City Health Office regularly inspect the assigned areas. Citation tickets are issued to residents and establishment owners violating the sanitation ordinances.</p> <p>Junk dealers, scavengers, pushcart boys, ambulant and sidewalk vendors are organized and integrated in the program. Children are strictly kept out of the dumpsites.</p>
Information and value education	<p>Garbage trucks have public address system broadcasting jingles and reminders for people to guard their health, keep surroundings clean and dispose garbage properly. Garbage trucks are emblazoned with slogans as “Keep Olongapo Clean” and “<i>Bawal ang Tamad sa Olongapo.</i>”</p> <p>Slogan, essay-writing and poster-making contests are conducted through DECS.</p> <p>City Tourism Council organized cleanliness competitions among 17 <i>barangays</i> which facilitated the adoption of the program by the <i>barangays</i>.</p>
Organization	<p>The Environmental Sanitation and Management Office (ESMO) headed by the Public Service Officer oversees the entire program. ESMO is divided into three sections: garbage collection, street cleaning and motorpool.</p> <p>City Planning and Development Office (CPDO) provides technical assistance through program documentation, interagency negotiation and sharing the city’s experience with visitors and researchers.</p> <p>City Health Department provides support through its Sanitary Inspectors who issue citation tickets to violators.</p>
Financing	<p>Garbage fees collected. To make collection easier and efficient, garbage fees are imbedded in the electricity bill: P10 to P20 for households depending on floor area of housing structure P30 to P300 for business establishments depending on the type of business</p> <p>Garbage trucks financed through donations.</p>
Legal orders	<p>Ordinance No. 31, Series of 1988 (Use of the Material Recovery Plant at New Cabalan) amended by Ordinance No. 13, Series of 1997</p> <p>Ordinance No. 34, Series of 1988 (Schedule of Fees for the Use of Sanitary Landfill Area at New Cabalan) amended by Ordinance No. 7, Series of 1997</p> <p>Ordinance No. 1, Series of 1989 (Schedule of garbage fees and other requirements for proper waste disposal) amended by Ordinance Nos. 6, 8, and 33, Series of 1997</p> <p>Ordinance No. 56, Series of 1995 (An Ordinance Adopting an Environment and Sanitation Code of Olongapo City) embodying the city residents’ goals, aspirations, efforts and discipline with respect to environment and sanitation management</p>

Source of basic data: Various Olongapo City Government Documents and Personal Interviews with City Officials

The Marikina River Park Authority (MRPA), under the Mayor's Office, oversees the river park program. It is manned by 50 personnel. The program receives airtime from the city's radio broadcast facility, DZBF, which airs public service programs and information about city programs daily. Marikina is the only local government unit in Metro Manila providing public information through radio to its constituents.

General Santos City: adopting beauty

Ninety years ago, a volcano erupted in the vicinity of General Santos City which made its situation then similar to the fate Pampanga is now experiencing. Even today, lahar is still evident along the city's dirt roads making the place dusty. The planting of trees around the city helps screen dust. As early as 1959, tree planting has become an integral part of the city's cleanliness project.

The city has been in the midst of an economic boom in recent years, resulting from major infrastructure projects in the area. To attract more investments, the task of cleaning and greening the city has been elevated to the level of aesthetics.

The City Environment and Natural Resources Office (CENRO), with the mayor's support, started a beautification drive of the city's two major parks and seven road islands. Due to meager resources, the city called on the private sector. Businesses, schools and NGOs were asked to "adopt" (that is, develop and maintain) a park or a road island.

Initially, the city formulated a landscape design of the parks and road islands. It then forged an agreement with private groups to execute the plan. Private groups are further given the responsibility of maintenance. For its part, the city provides plant seedlings and assists in watering.

Bombo Radyo, a local broadcast station, has been tasked to monitor the maintenance scheme of participating entities. Recently, Bombo Radyo joined the program and adopted a road island of its own.

The city government initially spent P25,000 for each road island covering landscaping expenses and purchase of plants. Thereafter, maintenance cost is being shouldered by private groups with the local government subsidizing watering expenses.

The parks and road islands in the city's core have brought beauty to the city and increased people's awareness and concern for the environment.

Las Piñas City: reliving the city's historic past

Las Piñas has recently been declared a city (it was formerly a town) and is one of the cleanest and greenest in Metro Manila. It is the site of the Las Piñas Church with its famed bamboo organ. Realizing that the city can develop further its tourism potentials by restoring its historical sites, a unified architectural theme in building structures has been adopted by the Las Piñas City's Historical Corridor Project.

The Historical Corridor Project plans to develop a 3.4 kilometer stretch into a historical corridor showcasing its Spanish heritage. This covers the old district of Father Diego Cera Avenue stretching from *barangays* Manuyo, Daniel Fajardo, E. Aldana, Ilaya, and Pulang Lupa towards Zapote. Under the scheme, public historical buildings will be restored while private structures will be prescribed to build in the style of the Spanish colonial period. A prominent architect was commissioned to draw the city's architectural design.

In 1995, Republic Act 8003 declared these sites as priority tourist spots: Las Piñas Church and the Bamboo Organ, Las Piñas Bridge, Asinan Area, the Father Cera Bridge and the Old District Hospital. The Department of Tourism was instructed to incorporate these sites in its development program. A city ordinance was enacted in 1997 further including other areas for development.

Congress's countrywide development fund was tapped to start restoration in the Old District Hospital, the Manpower School and the Daniel Fajardo Public Library. The private sector pitched in. The Las Piñas Cham-

ber of Commerce and Industry organized a fund drive for the project. The Las Piñas Garden Club offered its services in propagating plants to grace old Filipino homes in the vicinity. The Zonta Club of Las Piñas donated P5000 for the purchase of two lamp posts. The Philippine Dental Association-Las Piñas Chapter also donated P1000 and the Las Piñas Lions Club pledged for the construction of a Spanish-design waiting shed.

As an incentive, the city is considering tax deductions for those who comply with the prescribed architectural styles for edifices put up in the vicinity.

Lessons learned: key elements for program success

From the experiences of these six cities, what key elements surface that spell program success? The following section lists down seven key factors. It should be noted that no particular element stands alone to guarantee program success. All elements are interwoven and should not be taken in isolation.

Involvement of local institutions and people in implementation and funding. The involvement of as many sectors of society as possible helps ensure program results. Participation should not be limited to the implementation of the program. Participation should also be solicited in the aspect of resource mobilization.

Participation is especially critical in environmental management and does not necessarily refer to quantity (that is, number of groups and individuals enlisting) but more importantly, to the quality of participation. Local government environmental programs extend beyond normal bureaucratic responsibility and demand greater collaboration among institutions. The setting up of a framework and organization to effect participation and some kind of a machinery to resolve conflicts is important in this regard.

Improving knowledge and understanding through effective communication. Effective communication is

necessary to achieve program success and to solicit meaningful participation. A well-informed citizenry is a must if one is to expect a smoothly-implemented program.

Leadership: vision, popular support, clout and managerial acumen. Four leadership themes gain prominence: vision, popular support, clout and managerial acumen. Leadership is not confined to the city mayor but applies to other leaders in the city as well.

Visionary leadership is the ability to see the big picture: what to achieve, how to get there. Without vision, people perish. This may be trite but it is true nonetheless. Popular support derives from the leader's ability to communicate the vision to the people and rally them behind that vision. Credibility and trust is more important than personal charisma and proficiency in public speaking. Credibility is gained through consistency in public utterances and actions.

Clout is the capability to influence critical institutions and individuals to support the program. The ability to influence the city council is important so that legislations and ordinances are passed and budgets approved. The skill to solicit support from government agencies, business groups, NGOs and the media is also important. Managerial acumen is the administrative capability to lead and intelligently choose people to oversee program implementation.

Program design: adopting local cultures, values and beliefs. In Puerto Princesa, the transformation of the yearly Irawan town fiesta into *pista y ang cageban* (feast of the forest) gave new meaning to this religious festival, one that creates concern on the need to reforest Irawan. Baguio's eco-walk program has adopted the concept of *muyong*, an Ifugao term for man-made forests which had been the source of water for the Banawe rice terraces. The term is applied to specific areas of the Busol watershed where children planted trees. *Muyong* tradition forbids entry to a *muyong* without the permission of its "owners." The sacredness of this concept has

led outsiders to respect the Busol watershed allowing for the high survival rate of tree seedlings.

Availability of various funding sources, not just the city's budget. Limited financial resources of local governments should not pose a constraint in implementing sound environmental programs. There are other sources of funds and alternative programs that achieve the same ends. Moreover, when people realize the worthiness of a program, they will share resources voluntarily.

Program regularity and institutionalization. Successful programs stand the test of time. Undertaking regular activities contribute to program institutionalization.

National support. National government assistance can come in various forms. The devolved powers and increased internal revenue allotments (IRA) of cities have given them greater clout to undertake programs. National awards to local program innovators continue to motivate local governments to innovate and sustain laudable programs.

Postscript: some notes to reflect on

A note on solid waste disposal

While each local government unit is expected to craft its own environmental program, there are instances that inter-local programs have to be made in view of program interdependencies and economies of scale. This is especially true in solid waste disposal. Many cities have been successful in cleaning their surroundings but more need to be done in the final disposition of waste. The huge cost of establishing and maintaining sanitary landfills, obviously a constraint, leads to the less expensive alternative of dumpsites. In this regard, inter-local arrangements show a lot of promise for joint financing and maintenance.

Regulatory mechanisms should reflect full environmental costs

At present, a number of local governments are relying heavily on market mechanisms, particularly fines, to

manage the environment. However, these fines do not as yet reflect the full cost of environmental damage since they are not based on sound scientific costing. In the long-term, the scientific accounting of environmental damages and use of natural resources needs to be done. Local governments can use this information to determine the true cost of environmental activities which can be the basis for regulatory instruments that minimize environmental damage. 📄

For further information, please contact

The Research Information Staff
Philippine Institute for Development Studies
NEDA sa Makati Building, 106 Amorsolo Street
Legaspi Village, Makati City
Telephone Nos: 8924059 and 8935705;
Fax Nos: 8939589 and 8161091
E-mail: mruben@pidsnet.pids.gov.ph,
jliguton@pidsnet.pids.gov.ph

List of Policy Notes for 1998

- | | |
|-------|--|
| 98-01 | Fiscal Policy: Some Difficult Choices
<i>Gilberto M. Llanto</i> |
| 98-02 | Economic Reform and Macroeconomic Stability:
A Delicate Balance
<i>Josef T. Yap</i> |
| 98-03 | The Downward Drift in ASEAN Tariffs:
Implications on Philippine Trade
<i>Chulia J. Azarcon</i> |
| 98-04 | The International Economic Environment
and the Philippine Economy
<i>Ponciano S. Intal, Jr. and Leilani Q. Basilio</i> |
| 98-05 | Employment: Can We Keep Old Jobs and Create
New Ones?
<i>Gonzalo M. Jurado and Ma. Teresa C. Sanchez</i> |
| 98-06 | Health Care Financing Reform: Issues and Updates |