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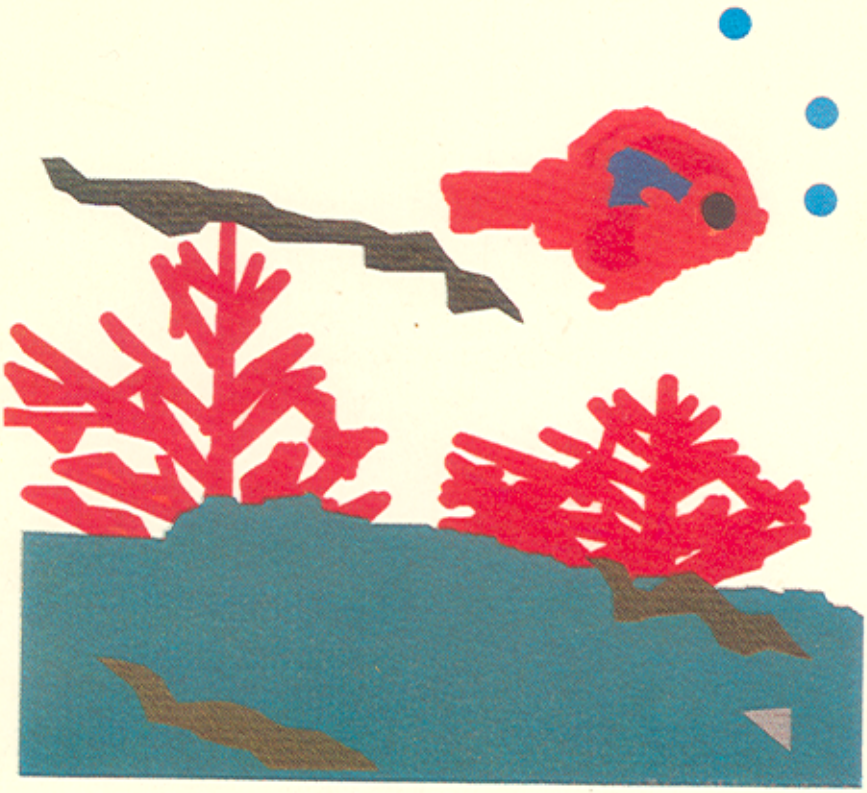
Catalina S. Tejam and S. Adrian Ross



GEF/UNDP/IMO
Regional Programme for the Prevention and Management
of Marine Pollution in the East Asian Seas
DENR Compound, Visayas Avenue
Quezon City, Philippines

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MISSION STATEMENT

The primary objective of the Global Environment Facility/United Nations Development Programme/ International Maritime Organization Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas is to support the efforts of the eleven (11) participating governments in the East Asian region to prevent and manage marine pollution at the national and subregional levels on a long-term and self-reliant basis. The 11 participating countries are: Brunei Darussalam, Cambodia, Democratic People's Republic of Korea, Indonesia, Malaysia, People's Republic of China, Republic of the Philippines, Republic of Korea, Singapore, Thailand and Vietnam. It is the Programme's vision that, through the concerted efforts of stakeholders to collectively address marine pollution arising from both land- and sea-based sources, adverse impacts of marine pollution can be prevented or minimized without compromising desired economic development.

The Programme framework is built upon innovative and effective schemes for marine pollution management, technical assistance in strategic maritime sectors of the region, and the identification and promotion of capability-building and investment opportunities for public agencies and the private sector. Specific Programme strategies are:

- Develop and demonstrate workable models on marine pollution reduction/prevention and risk management;
- Assist countries in developing the necessary legislation and technical capability to implement international conventions related to marine pollution;
- Strengthen institutional capacity to manage marine and coastal areas;
- Develop a regional network of stations for marine pollution monitoring;
- Promote public awareness on and participation in the prevention and abatement of marine pollution;
- Facilitate standardization and intercalibration of sampling and analytical techniques and environment impact assessment procedures; and
- Promote sustainable financing mechanisms for activities requiring long-term commitments.

The implementation of these strategies and activities will result in appropriate and effective policy, management and technological interventions at local, national and regional levels, contributing to the ultimate goal of reducing marine pollution in both coastal and international waters, over the longer term.

Dr. Chua Thia-Eng
Regional Programme Manager
GEF/UNDP/IMO Regional Programme
for the Prevention and Management
of Marine Pollution in the East Asian Seas

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FOREWORD

From 16 to 25 May 1997, the GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas conducted a random survey of residents of coastal and interior municipalities in the Batangas Bay Region, Philippines, a demonstration site under the Regional Programme. The survey was aimed at determining the residents' support and willingness to pay (WTP) for environmental management programs that address key issues facing the Bay and proximate areas. It was also designed as an instrument to assess the degree of public awareness and concern for environmental issues and a method of disseminating information on the status of environmental resources in the Region.

The survey revealed results that have considerable relevance to the implementation of the Strategic Management Plan for the Batangas Bay Region, and the related Integrated Waste Management Action Plan. Respondents showed a high degree of environmental consciousness, and there are indications that residents are willing to participate in and pay for programs that benefit the community now, and in the future.

While providing results that are important to decision-makers and other stakeholders in the Batangas Bay Region, the Contingent Valuation survey also showed merit as a research activity and potential management tool for integrated coastal management (ICM) in general. Its flexibility, low cost and multiple outputs provide a means for rapid assessment of the social and economic climate of ICM sites. Naturally, as experience is gained, the methodology employed and the analysis of information may become more sophisticated and comprehensive. However, even at this early stage, based on the experience in Batangas Bay, the Contingent Valuation is viewed as an effective instrument for determining and incorporating people's participation into environmental management programs in a more proficient and meaningful way.

BACKGROUND

In accordance with its objective to promote the self-reliance and sustainability of marine pollution prevention and management programs, the GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas initiated a review of coastal and marine management projects in East Asia aimed at identifying successful endeavors that should encourage investments in environment management projects and in the environmental industry of the Region.

Several ongoing and completed projects identified in the study manifested firm national commitment, private sector cooperation and community participation to address the issue of marine pollution. However, such endeavors were initiated primarily by national governments, considering huge capital requirements and government interventions to restore the environment or mitigate pollution impacts. Moreover, most of the environmental preservation and sanitation efforts have remained a burden of national governments and, ironically, of little concern to its citizenry. Thus, one still needs to examine whether these activities can ensure sustainable benefits across generations, especially in newly developing countries.

In this light, the Regional Programme developed a *Socio-Economic Impact Assessment (SEIA) Framework for Integrated Coastal Management (ICM) Applications* in 1997, in cooperation with the University of Rhode Island, to define a model for translating the benefits and costs of integrated coastal management (ICM) projects into economic values, using the Batangas Bay and Xiamen Demonstration Projects as pilot sites to test the model. The SEIA Framework consists of concepts and methods to contribute to a better understanding of the potential benefits and costs from ICM, indicators that might be used to assess how well the ICM process is working, and applications of the Framework in the two ICM Demonstration Projects of the Regional Programme.

One of the components of the developed SEIA Framework is the application of a Contingent Valuation (CV) survey. The CV model basically attempts to derive monetary values for non-market goods and services. The Regional Programme developed and implemented a CV methodology for use in the Batangas Bay Demonstration Project (BBDP), aimed at:

1. determining the people's support, priorities and willingness to pay (WTP) for environmental management programs that would address the key resource issues facing the Bay and proximate areas;
2. assessing the people's degree of awareness and concern for environmental issues; and
3. disseminating information regarding the status of environmental resources in the Province.

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Planning and designing the survey questionnaire began in March 1997, involving four separate pre-tests off and on the BBDP site. Survey administration started on 16 May 1997, covering four coastal

and three interior municipalities of Batangas Province, including Mabini, Bauan, San Pascual, Batangas City, San Jose, Ibaan and Lipa City (see Figure 1.1).

The survey was completed on 25 May 1997 with assistance from personnel of the Batangas Bay Demonstration Project (BBDP), the Environment and Natural Resources Office (ENRO) of the Batangas Provincial Government and the Management Training Development Centre (MTDC) of De La Salle Lipa.

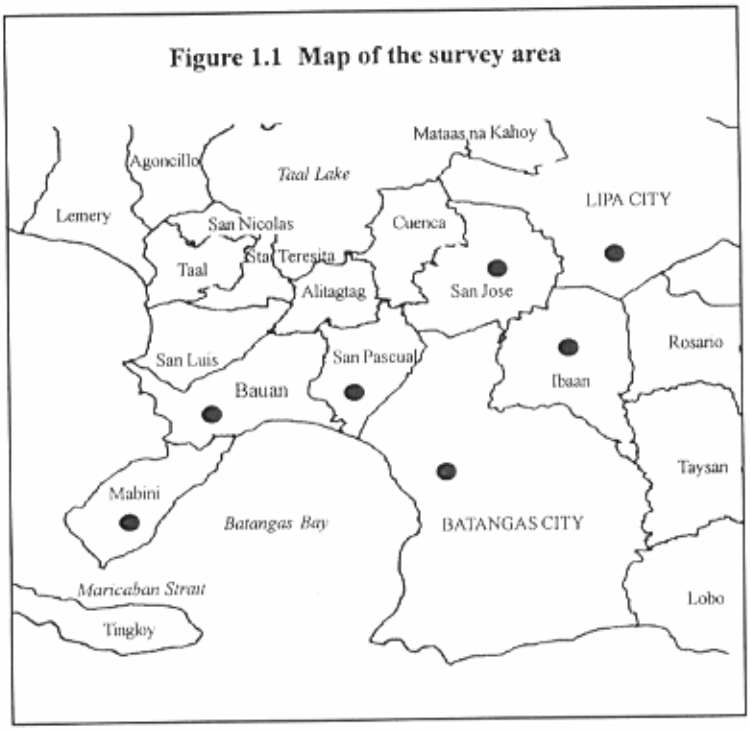


Figure 1.1 Map of the survey area

The survey is intended primarily for two purposes:

1. to prepare and demonstrate the CV methodology as a viable process for establishing public support, priorities and, eventually, benefits derived from ICM; and

2. to determine the public's attitude, support and willingness to pay for resources and environmental management programs in Batangas Bay, Philippines.

This Technical Report contains a brief description of the CV methodology; the survey design and process, including the formulation of questionnaires, selection of sample, sites and enumerators; survey administration; analysis and results. The survey procedures have been published in a separate manual as a capacity building and management tool for ICM practitioners.

METHODOLOGY

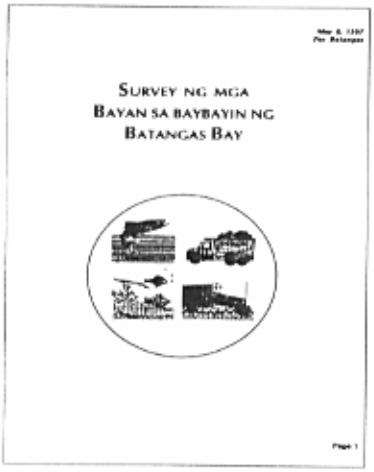
The CV Method

The CV method was defined by the National Oceanic and Atmospheric Administration[1] (NOAA) of the United States as a survey or questionnaire-based approach to the valuation of non-market goods and services, wherein monetary values are obtained for the good or service contingent upon a constructed (hypothetical or simulated) survey scenario involving the good or service described. On this basis, the CV method allows a high degree of flexibility and variety on the part of the survey designer. The survey may be conducted through interviews, telephone calls or by mail. It is currently the only method available for estimating nonuse values.

On the other hand, CV contains certain weaknesses. Estimates are difficult to validate and willingness to pay responses may not reflect the true feelings of the respondent or may be affected by factors beyond rational choice. Therefore, the concept of trade-offs and other experimental combinations are employed to minimize the possibility of bias.

Survey Design

The survey questionnaire was designed with reference to the Peconic Bay survey questionnaire, prepared by the University of Rhode Island, and modified according to the specific issues at Batangas Bay. The first draft of the questionnaire contained nine issues identified in the Coastal Environment Profile of the Batangas Bay Region[2] as significantly affecting its environment. These included: a) forestry; b) agriculture; c) coral reefs; d) fisheries; e) shoreline parks; f) solid waste; g) municipal sewage; h) mining and quarrying; and i) air quality.



Cover of the survey questionnaire

A series of pre-tests reduced the number of significant issues to four—fisheries, coral reefs, garbage and sewage. The questionnaire was redesigned to contain simple, direct and concise statements in Tagalog (the dialect of Batangas Province), with a minimum of trade-off options, in order to facilitate self-administration. Pictures and illustrations replaced words, where possible. Annexes A and B include the English and Tagalog versions of the survey questionnaire.

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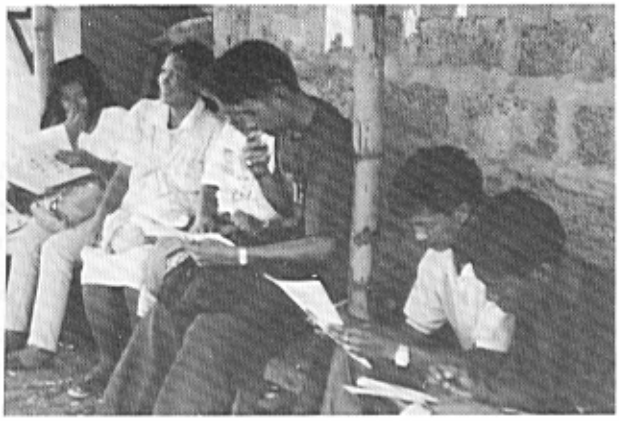
[1] National Oceanic and Atmospheric Administration (NOAA), Coastal Ocean Office, U.S. Department of Commerce. June 1995. Economic valuation of natural resources: a handbook for coastal resource policymakers. NOAA Coastal Ocean Program Decision Analysis Series No. 5, 132 p.

[2] Multidisciplinary Team of Experts (MTE). 1996. The Coastal Environment Profile of the Batangas Bay Region. MPP-EAS Technical Report No. 5, 148 p.



Respondents at the Mabini port

Initially, the questionnaire presents the objective of the survey and the reference area within Batangas Bay that is covered by the questions. The respondent is provided with background information on the status of the environment of the Batangas Bay region and projected conditions in the year 2020.

Section 1 seeks to identify the usual activities participated in by respondents and to determine the intensity of such activities in three bodies of water—Batangas Bay, Calumpang River and Balayan Bay. The next section contains a list of eight actions that would affect the quality of Batangas Bay waters. The respondent is asked to indicate willingness to support each action on a scale of 1 to 5.

A separate page of the questionnaire is designated for the solid waste issue in Batangas Bay. Questions focus on the degree of concern of residents for the issue, their current participation in recycling activities, and their willingness to pay for a new landfill. In this regard, respondents are asked to choose between paying more for a landfill located outside their village versus a landfill within the village boundary.

Thereafter, the respondent is asked to rank four issues—fishery resources, coral reefs, garbage and sewage—according to importance to them, based on the assumption that only one issue can be addressed each year. The next four pages contain three hypothetical programs for each of the four issues discussed earlier. The respondent is asked to choose from three scenarios that address issues in varying ways and involving different costs.

The final section is the respondent profile, which solicits basic information about the respondent's social and economic status.

Interviewing at a store

Sampling and Site Selection

Respondents involved only residents of Batangas Province. Only respondents 15 years old and above were allowed to participate to ensure a relatively good understanding of the issues and well-discerned responses. A sample size of 1,500 was targeted with due consideration for the large population of the coastal municipalities. Additional copies of the questionnaires were produced to cover inadequately completed questionnaires. The number of accomplished survey forms reached 1,902 or 93.7% of the total distributed.

The survey covered residential areas, market places, schools, commercial centers and stalls, transportation stations, port areas, parks, municipal halls, offices and churches. Key sites were selected

according to their proximity to the Batangas port and Calumpang River, to oil refineries and to the area targeted for a sanitary landfill. The 7 surveyed areas covered residents of 10 coastal and 15 interior municipalities.

PROCEDURE

Selection of Enumerators

Graduates of various social science programs at the De La Salle Lipa were recruited especially for the survey. Although few were experienced in the actual conduct of surveys, their enthusiasm and willingness to learn proved useful in the timely completion of the activity. The enumerators were required to undergo a two-hour seminar one day before the actual survey administration, to receive background information about Environmental and Resource Economics, the objectives and components of the Regional Programme, and the survey protocol. The enumerators were divided into 4 groups, with a maximum of 5 members per group to encourage team work and quality output.

Schedule of Administration

Ten days were allocated for the conduct of the survey, with a total of 19 enumerators administering the survey, assuming a minimum of 20 minutes to complete a questionnaire. The survey was designed to be self-administered and applying an intercept approach. This entailed selecting participants randomly in designated heavily populated sites. The approach could not be employed strictly in most cases, due to the Programme's need to obtain information from sectors and sites of special interest. In certain areas of Batangas City, enumerators went door to door in order to complete the questionnaires.

One of the survey enumerators at work

To ensure adequate quality control, accomplished questionnaires were immediately handed over to the team supervisors for inspection. The enumerators were obliged to observe a strict daily regimen—involving short meetings at the start of the day, mid-day and afternoon—which facilitated the exchange of experiences, trouble shooting, problem solving and strategic planning.

Protocol for Administration

Each enumerator had to observe certain procedures—beginning with a cordial approach and ending with a token of appreciation for the respondent—to encourage an honest response and to eliminate

bias to the extent possible. When approaching the respondent, the enumerator provided a capsule introduction of him/herself and the survey objectives. In order to maintain impartiality, the enumerator did not mention any affiliation. Inquiries on the specifics of the survey were entertained only after the questionnaire had been duly accomplished. A list containing rules of conduct in survey administration was provided to the enumerators. Annexes C and D include the Survey Protocol and Rules of Conduct.

Design of the token keychain

Pre-tests and Revisions

There is no limit to the actual number of pre-tests required to develop a survey questionnaire. In this case, 4 pre-tests were conducted on individual and group respondents before the questionnaire was prepared for final printing. Each pre-test led to a revised questionnaire that was dated as the latest version.

The pre-tests served to:

1. redefine and focus on the issues most prevalent in the survey area, eliminating the less significant concerns;
2. refine translation in the vernacular to facilitate readability and comprehension;
3. improve presentation with appropriate pictures, graphics and fonts;
4. observe the average amount of time required to complete the survey; and
5. take note of respondent reactions to the enumerator's approach and their general comments on the survey.

Finance and Supervision

The advantage of a contingent valuation survey using the intercept approach lies in its relative ease of administration and low cost. The bulk of administrative work involved selecting respondents and quality control.

Supervisory tasks—involving administrative duties, quality control and documentation—were divided among senior staff, each assigned to supervise a team of enumerators.

Statistical Analysis

Upon completion of the survey, data were encoded into a database (i.e., FoxPro) software package. Two types of analytical procedures were applied to the database. The set involving answers to specific questions were subjected to the chi-square test (i.e., χ^2 test) or test for independence to measure the degree of association of variables. The χ^2 statistic is used to compute actual and expected frequencies in the cell of a matrix. If two variables were independent, the value of χ^2 would be larger. The computed χ^2 value is compared to figures in the χ^2 distribution table that provides values corresponding to an upper tail area of the distribution curve and specified number of degrees of freedom.

The second set of procedures involved finding the relationship between respondent characteristics and their responses, using the one way analysis of variance (ANOVA).

The procedure for applying the χ^2 test and ANOVA is beyond the scope of this paper and is available in any textbook on statistical methods.

Reporting and Presentation

The database can be employed to provide insight into information in such a way that may be used independent of each other, such as:

1. the degree of public awareness of environmental issues;
2. public opinion of priority issues that should be addressed;
3. information for benefit-cost analysis of environmental management programs; and
4. a possible fee system according to levels of income and willingness to pay for environmental preservation and management.

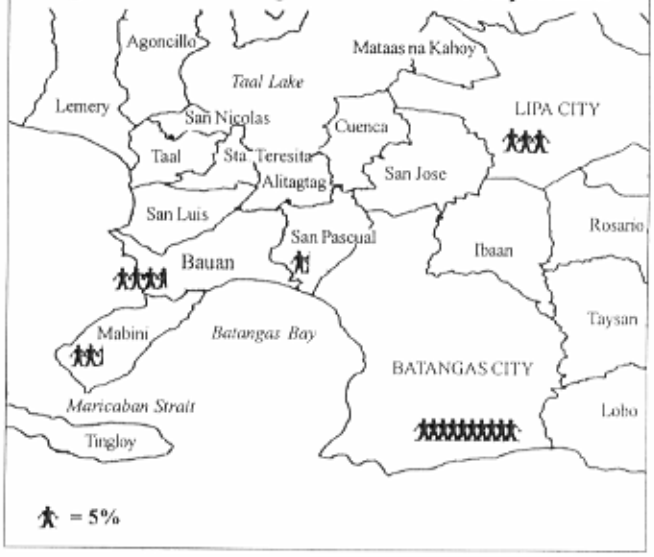
Thus, several outputs may be derived from the conduct of a CV survey depending on the researcher's perspective and interests. In addition, the survey produces benefits over and above those directly expected. Information contained in the questionnaire proved to be both educational and entertaining, exposing the people to the concept of corals reefs as nurseries and sanctuaries; and introducing the sanitary landfill as a better alternative to the open dump. The briefing seminar exposed the enumerators to Environmental and Resource Economics and Integrated Coastal Management (ICM) concepts, techniques and applications, which were totally new to them; while actual administration of the questionnaires helped build their self-confidence and enhanced their skills at speaking and listening to people.

THE SURVEY OF COASTAL MUNICIPALITIES ALONG BATANGAS BAY

Profile of the Respondents

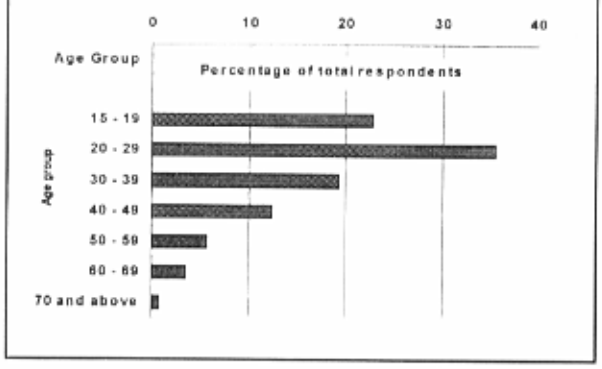
Almost half of the respondents (46.7%) to the survey were from Batangas City. The coastal municipalities of Bauan, Mabini and San Pascual made up 37.8% of the respondents, while inland municipalities including Lipa City accounted for 16.0% (Figure 4.1). "Sentinel" or key areas were identified in order to assess public support for activities relevant to Programme targets. In these areas, 5.8% of the total household population were covered as respondents to yield a significant vote. These barangays (or villages) included Sta. Clara, Cuta, Wawa, and Sta. Rita in Batangas City; Sinala in Bauan; and Poblacion and Danglayan in San Pascual—barangays surrounding the Batangas City port, at the mouth of Calumpang River, close to oil refineries, and within the area of the proposed sanitary landfill. In these areas, 5.8% of the total household population were covered as respondents to yield a significant vote.

Figure 4.1 Percentage distribution of respondents



The distribution of males and females was 50.7% and 48.6%, respectively. A little more than 50% of the respondents were single. The respondents were relatively young (Figure 4.2), with the majority (89.8%) below 50 years old. Most were in their teens (22.7%) or in their twenties (35.5%).

Figure 4.2 Respondent distribution according to age



Almost half (41.9%) were college graduates, implying a high literacy level. A large proportion (37.2%) were high school graduates, while a small percentage indicated that they completed graduate school (Figure 4.3). Sixty -two percent of the respondents were employed mostly (42.3%) in full time jobs. A small portion (17.1%) were government employees while an equal number (10.7%) were members of a civic organization and/or environmental organization.

Household size was large with more than half (62.2%) of the respondents indicating that their household size was from 4 to 7. A few households (0.9%) were extremely large, suggesting extended families and, possibly, room lessees. The average household size was 6.6. Almost all respondents (97.7%) indicated that 1 to 7 household members were at least 18 years old. A majority of all respondents (75.7%) earned below P10,000 per month (Figure 4.4), with almost 15% indicating that their income was less than P1,500 per month. A few (7.2%) indicated that they earned more than P20,000 per month.

Figure 4.3 Respondent distribution according to educational attainment

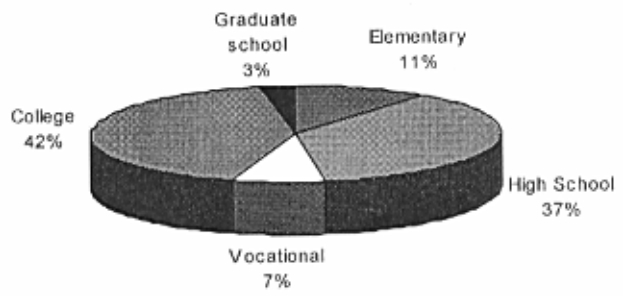
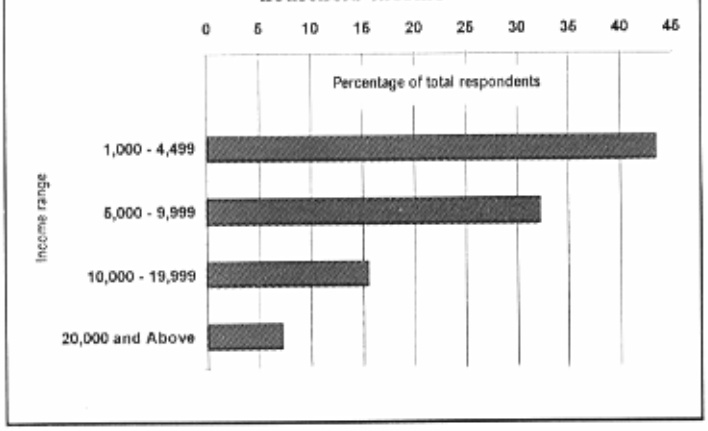


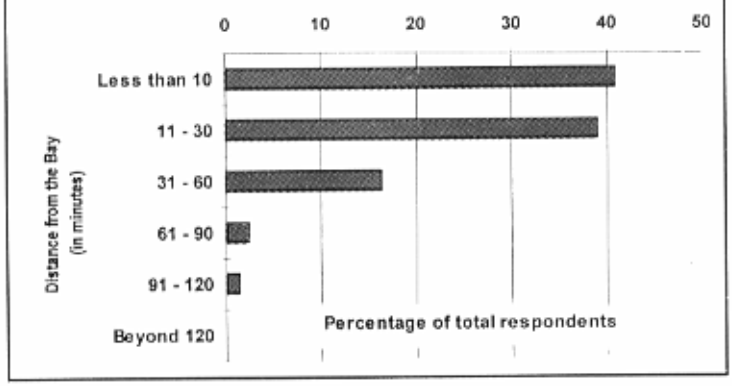
Figure 4.4 Respondent distribution according to monthly household income



Almost all respondents (81%) owned their house, with only 18% renting their housing unit. A majority of the respondents (71.5%) have lived in the area from 11 to 40 years. The length of residence, however, fluctuated significantly (i.e., standard deviation = 24.72) from an average of 26.05 years. A majority of the respondents (79.8%) indicated that their residence is located at a distance not more than 30 minutes away from Batangas Bay (Figure 4.5), implying that most of the respondents lived around the Bay and tended to be more familiar with issues surrounding the area.

The above respondent characteristics generally corresponded to the demographic features described in the Coastal Environment Profile of the Batangas Bay Region.

Figure 4.5 Respondent distribution according to distance from Batangas Bay

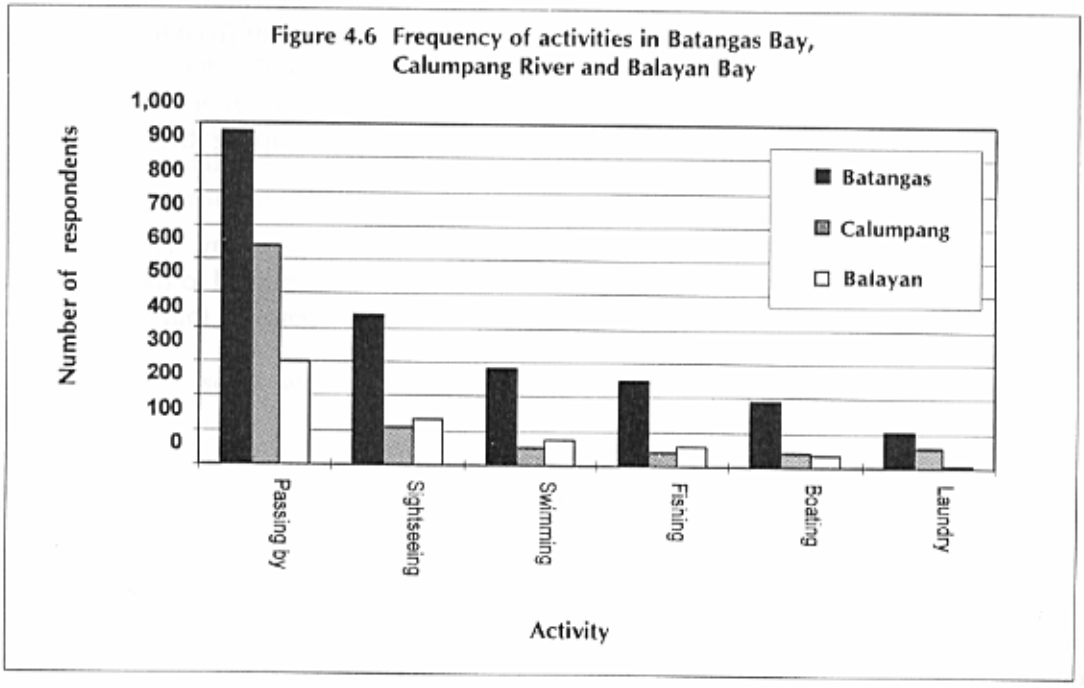


Activities Participated in around Batangas Bay, Calumpang River and Balayan Bay

Respondents were requested to indicate which activities they usually participate in in the three major bodies of water—Batangas Bay, Calumpang River and Balayan Bay—of Batangas Province. The activities listed include fishing, swimming, sightseeing, laundry, boating and passing by. The information should serve as an indicator of intensity of water use and potential for pollution.

Results show that passing by and sightseeing dominate as the most frequent activity in all three bodies of water (Figure 4.6), suggesting that resident activities have a minor impact on the marine environment of the bays and river. Activities appeared to be more intense in Batangas Bay than in Balayan Bay or Calumpang River.

Figure 4.6 Frequency of activities in Batangas Bay, Calumpang River and Balayan Bay



Degree of Support for Actions affecting Water Quality in Batangas Bay

Each respondent was provided a list of eight actions that would affect water quality in Batangas Bay. They were asked to choose from a scale of 1 to 5, with 1 representing strongest support and 5 representing strongest opposition. The actions and results are listed below:

1. Better enforcement of environmental regulations in your municipality or city

On the above action, a majority of the respondents (84.4%) indicated support for the strict implementation of environmental regulations. Their support is affected by their place of residence. For

instance, respondents in Bgy. Sinala, Bauan—site of an existing garbage dump—indicated overwhelming support for the action than in other areas. Residents of Bauan tend to be relatively more conscious about waste management than other coastal municipalities, due to efforts of the Municipal Government of Bauan to promote solid waste management with an ordinance on waste collection and efforts at waste segregation.

2. Zone to guide future development

Most respondents (83.2%) also agreed that zoning is necessary for sustainable development, even as there is no apparent segmentation of the respondents with respect to this issue. The concept of zoning generally appeals to Batangas residents, even though there is no existing zonation plan for Batangas Bay waters.

3. Prohibit dumping of waste and oil from vessels

There was overwhelming support (86.2%) for the prohibition of oil and garbage dumping from ships. The response is affected by the place of residence, with all respondents from Bgy. Wawa, Batangas City indicating support and almost all from Bgy. Cuta, Batangas City and Bgy. Sinala, Bauan indicating strong support to the proposal. Wawa and Cuta are barangays at the mouth of the Calumpang River, which drains into the Bay. Tidal flow tends to move slowly near the Calumpang River and wash oily and solid wastes upshore.

On the other hand, Sinala in Bauan Municipality is an interior barangay. The strong support of Sinala residents against dumping of waste and oil from vessels may be related to their proximity to an existing garbage dump. During the survey, respondents complained about the foul odor, flies and litter falling from trucks carrying garbage into their barangay.

4. Restrict commercial fishing in Batangas Bay

Respondents appeared divided on the issue of commercial fishing. Although a large proportion (67.4%) agreed that commercial fishing should be banned in Batangas Bay, a significant proportion (15.9%) are still undecided, while a few (8.5%) disagree with the idea. Respondents in Bgy. Sta. Rita followed by Cuta indicated the most support to the idea. Both Sta. Rita and Cuta in Batangas City are settlements of communities (Figure 4.7) dependent on small scale fishing for their source of income.

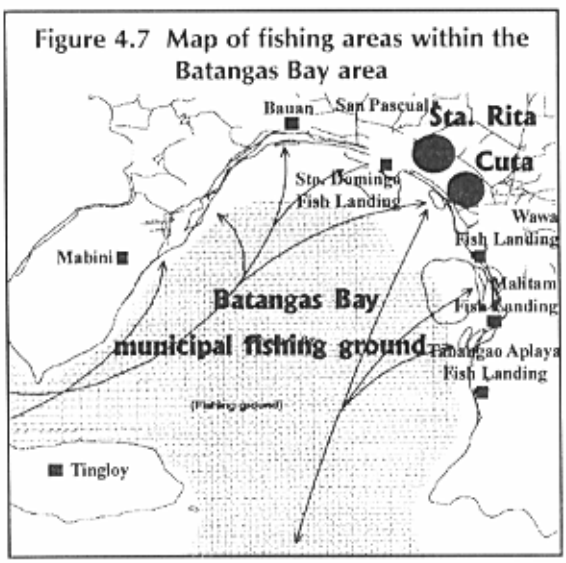


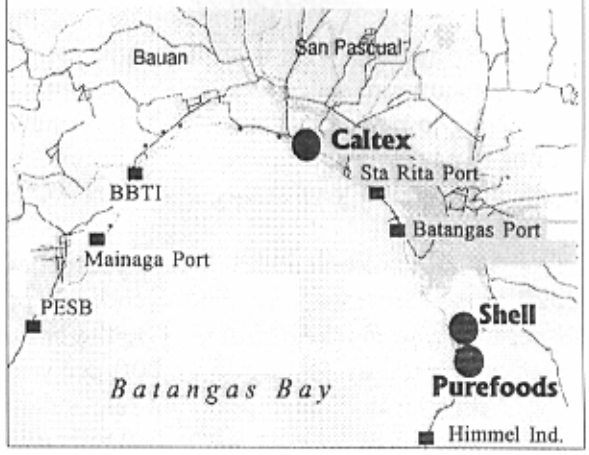
Figure 4.7 Map of fishing areas within the Batangas Bay area

5. Control discharges of waste from industry

Most respondents agreed that strict regulations against industrial pollution is necessary, but a small portion—possibly employees of industrial plants—were undecided or disagreed with the idea. Residents of Bgy. Sinala in Bauan, Bgy. Poblacion in San Pascual

and Bgy. Sta. Rita in Batangas City indicated the most support to the idea, possibly due to the latter two barangay's proximity to the Bay and, therefore, greater exposure to pollution from oil refineries and other industries (Figure 4.8). Residents of Bgy. Sinala appeared to be generally anxious over any type of waste, as industrial wastes are also disposed in their dumpsite.

Figure 4.8 Map showing industries within the Batangas Bay Area



6. Improve garbage collection in all barangays

7. Require pumpouts of existing septic systems

8. Promote public information campaign on the environment

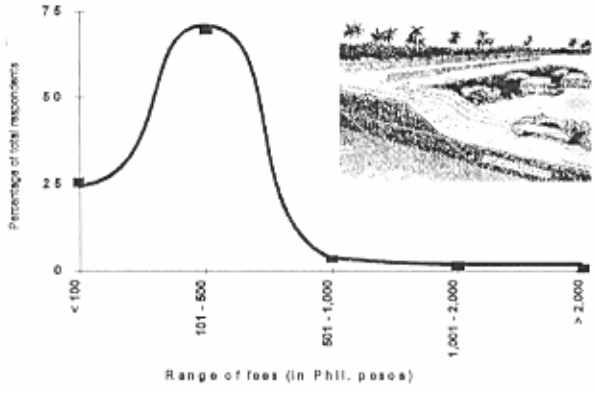
Respondents generally agreed to more effective garbage collection in their barangay, to the maintenance of septic tanks and to an active public information campaign on the environment. However, there was no apparent stratification to their responses to these issues.

Solid Waste

1. Concern for solid waste and recycling

Households typically recycle their old newspapers, used bottles and metals. As an indicator of environmental awareness and concern, respondents were asked how important the issue of solid waste was to them, and whether they extended recycling activities outside those typically engaged in by their families. Results show that the majority (91.7%) believed that the issue of solid waste was important, with 62.3% practicing recycling beyond the typical materials. This shows there is a very high environmental awareness in Batangas, and particular concern for waste management issues.

Figure 4.9 Respondent distribution according to maximum fee for a new landfill



2. Support for a sanitary landfill

The respondents were shown an alternative method of disposing garbage through a landfill, which was described as a more efficient and sanitary way of disposing

garbage. Then, they were asked in they would be willing to support a sanitary landfill project, assuming that this requires a fee higher than the P120 per year they already pay for garbage collection in Batangas.

The vast majority (80%) indicated that they will support an increase in fees for a new sanitary landfill (Figure 4.9), but the maximum amount that they committed averaged P207.9 only per year or P17.32 per month. This is an indefinite estimate since the standard deviation is high at 401.75. The maximum amount stated was P5,000 per year; however, a very small number (1.9%) indicated that they are willing to pay more than P1,000 for a new landfill. The maximum amount that respondents are willing to pay for a new landfill varies according to their distance from Batangas Bay, length of residence in the area, gender, civil status, age, household size and monthly income.

When presented with three hypothetical programs to solve the garbage problem until the year 2020, respondents were inclined to choose a program which would collect 100% of their garbage for disposal in a sanitary landfill outside the barangay where they reside. In this case, most respondents were willing to pay fees up to P2,000 per year, with a weighted average amounting to P1,069.40 or P89.12 per month. This implies that respondents are willing to pay higher fees for integrated programs, than for piecemeal projects, when they fully understand the expected outputs of the proposed programs.

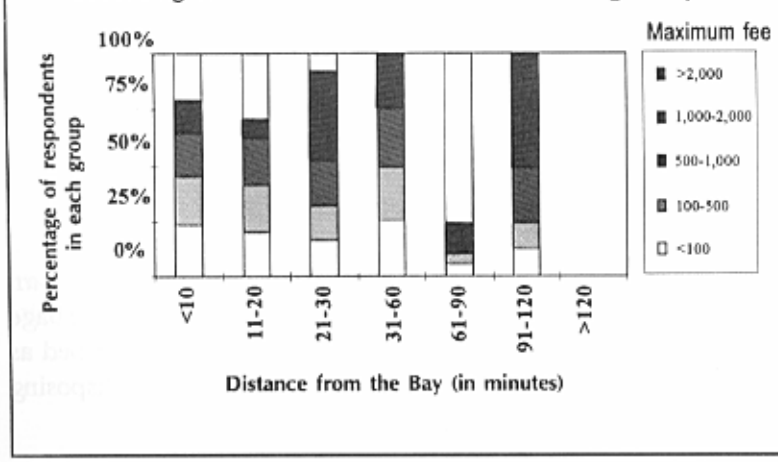
Figure 4.10 shows that around 50% of respondents living in areas less than 60 minutes away from Batangas Bay are inclined to indicate a fee between P100 and P500 a year for a new landfill; while those residing in areas beyond 60 minutes away tend to indicate fees over P500. This suggests that garbage tends to be a more significant problem for residents of inland municipalities or cities—such as San Jose, Ibaan and Lipa City—rather than coastal municipalities. The higher willingness to pay of residents of interior barangays may also be influenced by their proximity to schools and business centers that provide more exposure to media, and access to education and better paying jobs.

Newer residents also indicated higher amounts than those who have been long time residents. In relation to their comments at the end of the questionnaire, there is indication that elderly residents are more skeptical of new developments, especially those involving a new fee scheme.

Larger households indicated higher amounts than smaller households. The latter responses maybe expected, considering the likelihood that there are more income earners within the household. As shown in Figure 4.11, with the exception of the lowest income group, at least 50% of all income groups are willing to pay at least P500 per year for a new landfill, that is, an amount four times over the current garbage collection fee.

Male respondents commited higher amounts than females. Single respondents committed higher amounts than others. This is

Figure 4.10 Willingness to pay for a sanitary landfill according to distance of residence from Batangas Bay

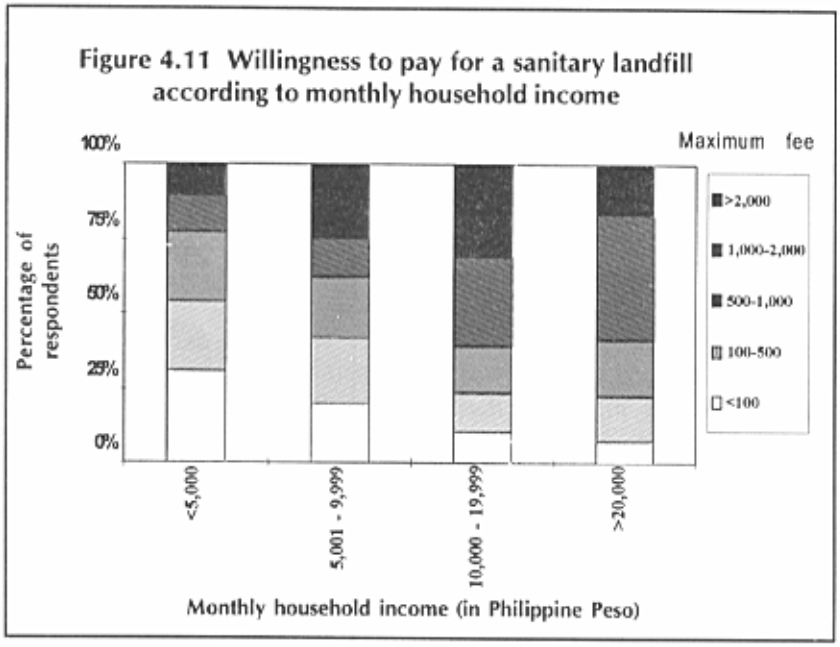


probably related to the traditional role of married females as custodians of the family purse; and, thus, their tendency to prioritize basic needs over public goods.

Surprisingly, educational attainment did not significantly influence the respondents' willingness to pay for a sanitary landfill project. This implies that Batangas residents have a relatively high awareness of environmental issues and concerns, beyond what they have acquired from regular schooling.

Rank the Issues

Given a situation where they could influence which environmental programs would be implemented every year for four years, respondents were asked to rank environmental programs according to the importance of specific resources and issues.



Results show that repondents find fishery resources as the most important, suggesting food security and production income as of utmost priority. This is followed by garbage, which is a nagging concern, especially for residents close to dumpsites. Corals came as third priority, described as the habitat and breeding grounds for fish but associated by respondents with beaches, tourism and recreation. Finally, there is sewage, which is associated with problems concerning effluents from households and industries.

1. Fishery resources

Respondent prioritization of fish as food is affected by their place of residence and monthly income. Respondents from Bgys. Sta. Clara, Cuta and Wawa (Batangas City)—barangays located at the mouth of Calumpang River, where fish are often unloaded—ranked fish mostly as first or second priority. Those in the lower income bracket ranked it mostly as first priority, understandably due to their concern for affordable sources of food.

2. Coral reefs

Prioritization of corals as breeding grounds is affected by gender, household size and age. Males ranked the resource higher than females, smaller households and younger respondents tended to rank corals higher than their counterparts. Gender and age factors may be related to preference for clean and scenic beaches. The significance of household size may be related to the possibility of excess funds for recreation in households with less people partaking of the family pie.

3. Garbage

Prioritization of garbage is affected by length of residence, work status, and monthly income. Long time residents appeared to be more concerned about the cleanliness of their surroundings. Employment status may be associated with better education, higher incomes and job stability.

4. Sewage

Prioritization of issues on sewage is affected by gender and educational attainment. Gender may affect the degree of concern for sanitation. Educational attainment is associated with environmental awareness and consciousness.

Willingness To Pay

Respondents were presented with four hypothetical environmental management programs which should affect the condition of Batangas Bay in the year 2020. Respondents were asked to decide which type of program they would choose for implementation in relation to a specific natural resource or environmental concern. There were three choices: A, B and C; with A representing the *status quo* or no additional cost for implementation; and B and C representing two scenarios with different costs.

Most respondents are willing to pay P1,000 per year to conserve fishery resources, with a weighted average amounting to P1,109.88. The choice of amount is affected by educational attainment, monthly income and place of residence.

Most respondents are willing to pay P1,500 per year to conserve coral reefs, with a weighted average amounting to P968.19. The choice of amount is affected by educational attainment and monthly income.

Most respondents are willing to pay P2,000 per year to solve the garbage problem, with a weighted average amounting to P1,069.40 or P89.12 per month. The choice of amount is affected by length of residence, educational attainment and monthly income. The choice of Program B, which has a 300% differential on fees over Program C, indicates heavy preference for a landfill outside the barangay they reside in.

Most respondents are willing to pay P1,800 per year to solve the sewage problem, with a weighted average amounting to P1,278.76. Their choice of amount is affected by educational attainment, monthly income and place of residence.

Results show that most respondents tend to choose the higher paying program for all issues, except for fishery resources. This is due to the availability of relatively cheaper substitutes to fish, including beef, pork and poultry products. However, fish resources are especially important to fishing communities that depend on them for a source of income.

As shown above, educational attainment and monthly income appear to be the overriding factors affecting respondents' willingness to pay for environmental resources and services. Educational attainment understandably contributes to environmental awareness and concern; while monthly income affects the respondents' willingness to shell out extra funds for a good cause. Length of residence tends to influence willingness to pay, possibly influenced by the concern over the cleanliness of the surroundings. Place of residence is associated with proximity to places of work.

Interviewing at a funeral parlor

Remarks

The last portion of the survey provides the respondents with an opportunity to vent their views and comments about anything they wish to say for the record. Remarks were grouped according to specific issues raised.

Several comments related to the need for sincere, honest and committed government officials who have the political will to implement environmental laws and programs. Others voiced their displeasure over poor employment opportunities, high taxes and prices of goods, and the special treatment afforded foreign investors.

Remarks pertaining to environmental issues and actions concerned the protection of the Bay waters, a solution to the garbage problem and preservation of natural resources. There were indications of overwhelming support for environment programs and projects and hopes for success. A few expressed concern over dynamite fishing and pollution caused by makeshift houses along the Bay. Only two persons indicated unwillingness to pay due to their belief that government should be solely responsible for the environment.


Respondents at a store

More specific suggestions included a call to involve the youth in environment programs, to move an existing dumpsite away from Bgy. Sinala, a relocation program for residents affected by the

development of the Batangas Bay international port, construction of adequate septic tank and drainage systems, improved access to clean water, provision of garbage bins at corners, better garbage collection services, proper zonation, prohibition of tree cutting, a program to instill discipline and control the population, information campaigns and a solution to the traffic and drug problem.

CONCLUSION

The survey reveals several views important for the successful implementation of the Batangas Bay Demonstration Project and potential environment management projects in Batangas Province. It manifests the high degree of environmental consciousness of residents of Batangas and their willingness to participate in and pay for programs that shall benefit themselves and generations to come, especially with regard to fishery resources and waste management.

It should be noted that figures expressed as fees should be considered with caution. It may be an indication of general openness to an increase in fees. However, a larger sample may be required to reach a more stable figure for implementing any new fee schemes. Also, when planning to upgrade an existing fee scheme, it would be best to begin with the more conservative amount (i.e., a lower estimate) in a range of fees in order to avoid backlash by the public.

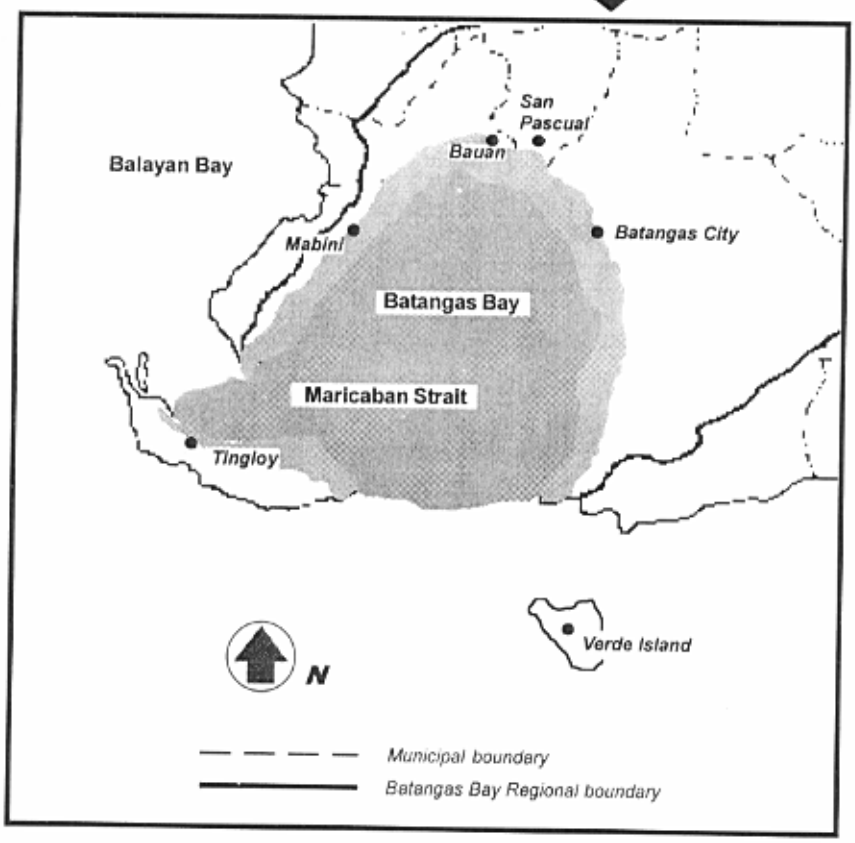
The Contingent Valuation survey, as a research activity and management tool, has proven to be useful instrument to measure public support and the general willingness to pay for environmental management projects. Its flexibility, low cost and multiple outputs make it a valuable procedure for assessing the social and economic climate of an area.

ANNEX A

SURVEY OF THE COASTAL MUNICIPALITIES ALONG BATANGAS BAY

OBJECTIVE:
TO KNOW YOUR OPINION ABOUT RESOURCE ISSUES IN THE BATANGAS BAY AREA

SCOPE OF THE SURVEY:



I. ***Please check the activities you participate in around the following locations:***

ACTIVITIES	*Batangas Bay*	*Calumpang River*	*Balayan Bay*
Fishing	☐	☐	☐
Swimming	☐	☐	☐
Sightseeing	☐	☐	☐
Laundry	☐	☐	☐
Boating	☐	☐	☐
Passing by	☐	☐	☐

II. ***The following actions would affect water quality in Batangas Bay.***

Please indicate how strongly you <u>support</u> or <u>oppose</u> each action, by circling a number.

a) *Better enforcement of environment regulations in your municipality or city.*

1	2	3	4	5	NA
strongly support	support	neutral	oppose	strongly oppose	no opinion

b) *Zone to guide future development.*

1 2 3 4 5 NA

c) *Prohibit dumping of waste and oil from vessels.*

1 2 3 4 5 NA

d) *Restrict commercial fishing in Batangas Bay.*

1 2 3 4 5 NA

e) *Control discharges of waste from industry.*

1 2 3 4 5 NA

f) *Improve garbage collection in all barangays.*

1 2 3 4 5 NA

g) *Require pumpouts of existing septic systems.*

1 2 3 4 5 NA

h) *Public information campaign on the environment.*

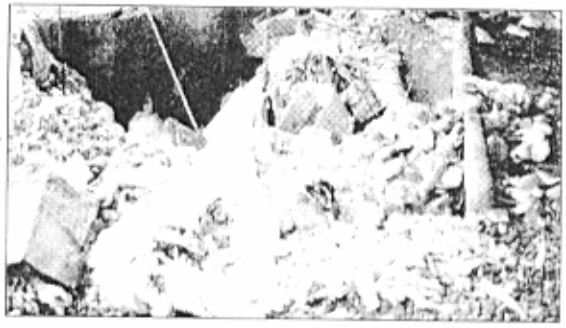
1 2 3 4 5 NA

III. SOLID WASTE

SOLID WASTE includes garbage generated by residences, market places and commercial centers. Uncollected waste ends up on streets, vacant lots and waterways.

A **DUMP SITE** is:

- A site, like Smokey Mountain, where solid waste is dumped.



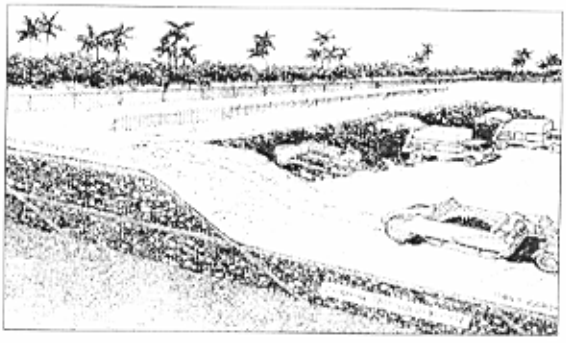
QUESTION: How concerned are you about solid waste?

- ☐ No opinion
- ☐ Not concerned
- ☐ A little concerned
- ☐ Very concerned

QUESTION: Aside from recycling old newspapers, used bottles and metals, are you involved in any other recycling activities in your area? ☐ YES ☐ NO

In a **SANITARY LANDFILL**:

- Solid waste is buried underground.
- Obnoxious odors are eliminated.
- Health hazards are prevented.



At present, <u>YOUR FAMILY PAYS P120 EACH YEAR</u> for garbage collection.

QUESTION: If your family will pay a higher fee each year for a new landfill, would you support the new landfill? ☐ YES ☐ NO

What is the <u>HIGHEST AMOUNT EACH YEAR</u> you would be willing to pay for the new landfill? P ☐

IV. BACKGROUND INFORMATION

A bigger picture = increased quantity
Smaller picture = decreased quantity.

APPROXIMATE CONDITIONS IN 1985

Fish catch:
6,000 tons

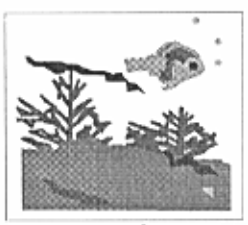
Corals:
24% good

Solid waste:
40 tons each day

Sewage:
BOD of 4,000 tons

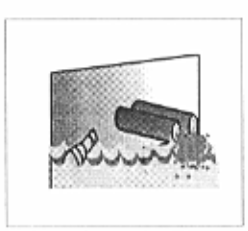
APPROXIMATE PRESENT CONDITIONS

Fish catch:
3,600 tons



Corals:
37% good

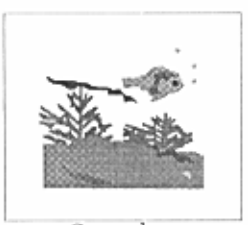
Solid waste:
56 tons each day



Sewage:
BOD of 6,700 tons

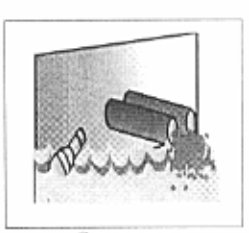
If no new action is taken: APPROXIMATE CONDITIONS IN 2020

Fish catch:
2,000 tons



Corals:
25% good

Solid waste:
80 tons each day



Sewage:
BOD of 8,000 tons

To preserve what we have, new actions are needed!

However, it is very expensive to solve all environmental problems.

We are trying to learn WHICH RESOURCES are most important to you.

And its VALUE IN MONETARY TERMS.

Consider each question carefully.

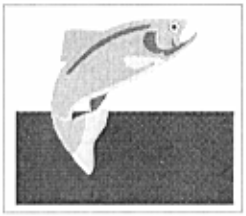
Do not add up the figures.

V. *RANK THE ISSUES*

Place a number from 1 to 4 on each issue according to its importance to you.

1 - first priority
2 - second priority
3 - third priority
4 - fourth priority

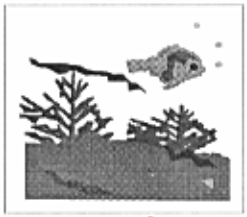
Number: _____



Fish

- ***Food***
- ***Source of income for fisherfolk***

Number: _____



Corals

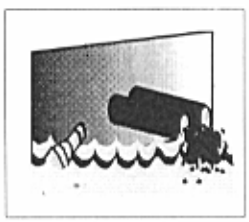
- ***Sanctuary and nursery of fish stock***

Number: _____

Garbage

- ***Solid waste from domestic and commercial activity***

Number: _____

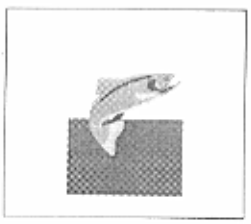
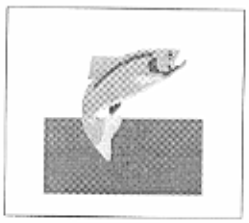
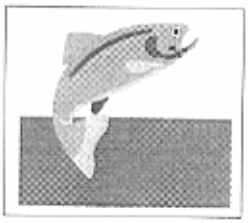


Sewage

- ***Waste waters draining into rivers and seas***

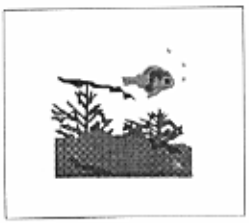
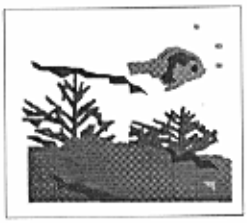
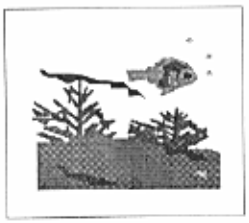
VI. ***If you had the opportunity to choose one of the 3 options to preserve our natural resources until the year 2020, which would you choose? Please check (✓).***

☐ *A* ☐ *B* ☐ *C*

A (No New Action)	*B*	*C*
		
Fish catch: 2,000 tons	*Fish catch: 3,600 tons*	*Fish catch: 4,500 tons*
₱ 0 *each year*	***₱ 1,000*** *each year*	***₱ 2,000*** *each year*
Additional fee for households	*Additional fee for households*	*Additional fee for households*

If you had the opportunity to choose one of the 3 options to preserve our natural resources until the year 2020, which would you choose? Please check (✓).

☐ A ☐ B ☐ C

A (No New Action)	B	C
		
Corals: 25% good	Corals: 37% good	Corals: 30% good
~~₱ 0~~ each year	~~₱ 1,500~~ each year	~~₱ 800~~ bawat taon
Additional fee for households	Additional fee for households	Additional fee for households

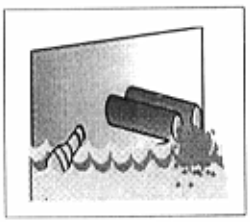
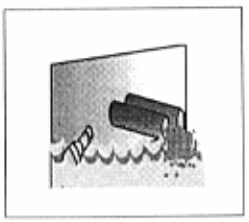
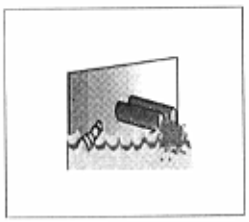
If you had the opportunity to choose one of the 3 options to enhance government services until the year 2020, which would you choose? Please check (✓).

☐ *A* ☐ *B* ☐ *C*

A (*No New Action*)	*B*	*C*
		
Solid waste: 60% collected and disposed in a dump site	*Solid waste: 100% collected and disposed in a landfill outside your barangay*	*Solid waste: 100% collected and disposed in a landfill inside your barangay*
₱ *0* each year	₱ *2,000* each year	₱ *500* each year
Additional fee for households	*Additional fee for households*	*Additional fee for households*

If you had the opportunity to choose from 3 options to enhance government services until the year 2020, which would you choose? Please check (✓).

☐ A ☐ B ☐ C

A (No New Action)	B	C
		
Sewage: Remains untreated	Sewage: 50% treated	Sewage: 90% treated
~~₱ 0~~ each year	~~₱ 1,000~~ each year	~~₱ 1,800~~ each year
Additional fee for households	Additional fee for households	Additional fee for households

Notice: Your answers to these questions will remain strictly confidential.

PROFILE OF THE RESPONDENT:

- *Do you:* ☐ *own your home* ☐ *rent*
- *Where is your home located?*
  Municipality/City _____ *Barangay*_____
- *How many minutes does it take you to reach Batangas Bay from home?*_____
- *How long have you been a resident of Batangas?* _____ *years*
- *Are you:* ☐ *Male* ☐ *Female*
- *Are you:* ☐ *Single* ☐ *Married* ☐ *Widowed* ☐ *Separated*
- *Which age bracket do you belong to:*

☐ *15-19*	☐ *20-24*	☐ *25-29*	☐ *30-34*
☐ *35-39*	☐ *40-44*	☐ *45-49*	☐ *50-54*
☐ *55-59*	☐ *60-64*	☐ *65-69*	☐ *70 and above*

- *What is the highest level of education you have attained?*

☐ *Elementary*	☐ *High School*	☐ *Vocational/Technical*
☐ *College*	☐ *Graduate school (e.g., MA/MS/PhD)*	

- *Are you employed?* ☐ *Yes* ☐ *No*
  If yes: ☐ *full-time or* ☐ *part-time*
- *Are you a member of any:*

Government office?	☐ *YES*	☐ *NO*
Civic organization (e.g.,Rotary Club)?	☐ *YES*	☐ *NO*
Environmental organization?	☐ *YES*	☐ *NO*

- *Including yourself, how many people live in your household?* ____
- *Excluding yourself (and your spouse), how many people in your household over 18 years of age are gainfully employed?* ____
- *What is your MONTHLY HOUSEHOLD INCOME before taxes?*

☐ *1,000-1,499*	☐ *1,500-1,999*	☐ *2,000-2,499*
☐ *2,500-2,999*	☐ *3,000-3,999*	☐ *4,000-4,999*
☐ *5,000-5,999*	☐ *6,000-7,999*	☐ *8,000-9,999*
☐ *10,000-14,999*	☐ *15,000-19,999*	☐ *20,000 and above*

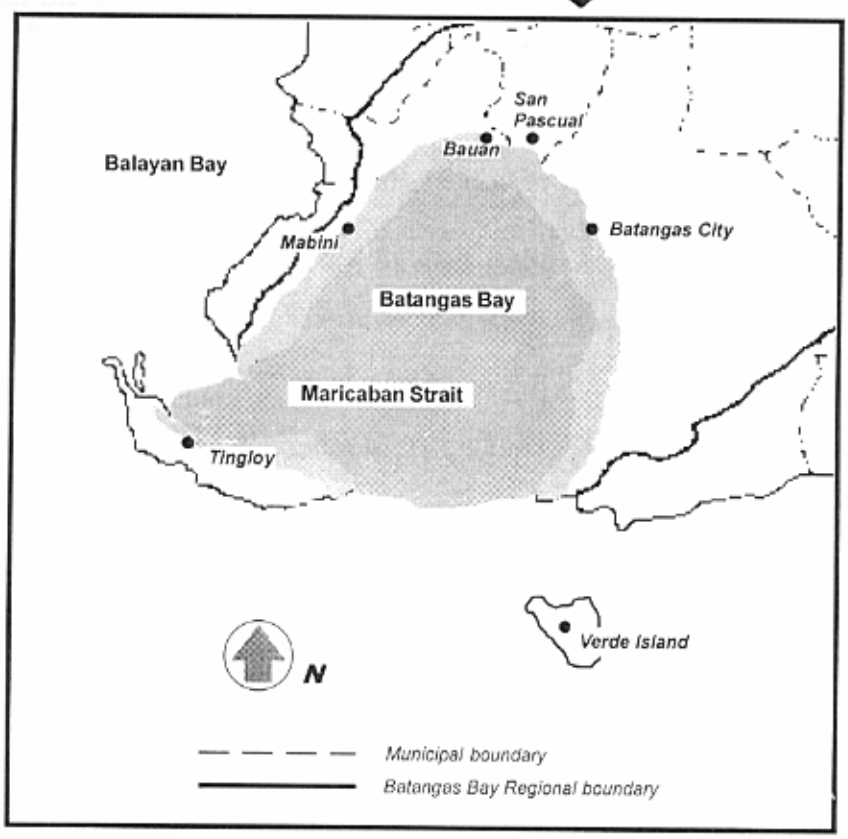
- *Do you have any other comments?* _____

Thank you very much

SURVEY NG MGA BAYAN SA BAYBAYIN NG BATANGAS BAY

LAYUNIN:
MALAMAN ANG INYONG OPINYON TUNGKOL SA LIKAS NA YAMAN NG BATANGAS BAY

ANG SAKOP NG SURVEY:



KARANIWANG GAWAIN	Batangas Bay	Calumpang River	Balayan Bay
Nangingisda	☐	☐	☐
Naglalangoy	☐	☐	☐
Namamasyal	☐	☐	☐
Naglalaba	☐	☐	☐
Namamangka	☐	☐	☐
Dumadaan	☐	☐	☐

II. ***Ang mga sumusunod na pagkilos ay nakaaapekto sa kalidad ng tubig sa Batangas Bay.***

Bilugan ang numerong nagpapahiwatig ng iyong <u>pagsuporta</u> o <u>di pagsuporta</u> sa bawat nabanggit na hakbang.

a) *Mahigpit na pagpapatupad ng environment regulations ng munisipalidad o lungsod.*

1	2	3	4	5	NA
labis na sumusuporta	sumusuporta	walang kinikilingan	hindi sumusuporta	labis na hindi sumusuporta	walang opinyon

b) *Zoning o pag-sona para sa maayos na pag-unlad.*

1 2 3 4 5 NA

c) *Pagbabawal sa pagtapon sa dagat ng mga basura at langis mula sa mga barko.*

1 2 3 4 5 NA

d) *Pagbabawal sa commercial fishermen sa Batangas Bay.*

1 2 3 4 5 NA

e) *Paghihigpit laban sa polusyon galing sa mga industriya.*

1 2 3 4 5 NA

f) *Pagpapabuti ng pangongolekta ng basura sa lahat ng barangay.*

1 2 3 4 5 NA

g) *Pagpapalinis ng mga poso negro o septic tank.*

1 2 3 4 5 NA

h) *Public information campaign tungkol sa environment.*

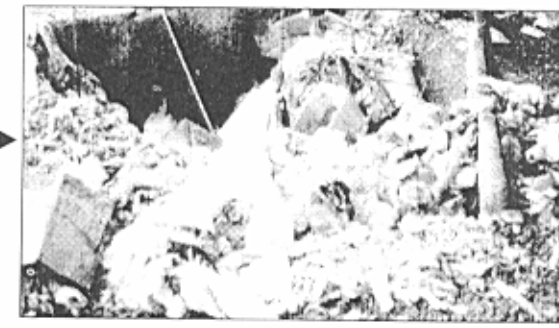
1 2 3 4 5 NA

III. SOLID WASTE

Ang **SOLID WASTE** ay dumi at basura mula sa mga bahay, palengke at kalakalan. Ang di nahahakot na basura ay kumakalat sa mga kalsada, bakanteng lote at daluyan ng tubig.

Ang **DUMP SITE** ay:

- Tambakan ng dumi at basura tulad ng Smokey Mountain.



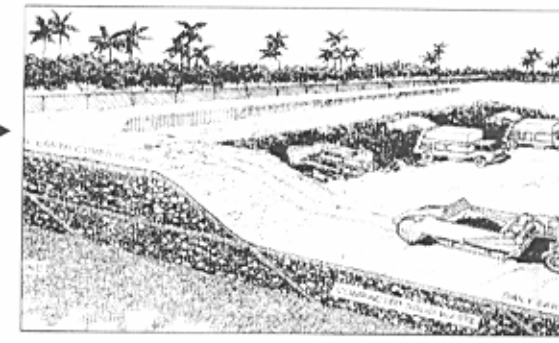
TANONG: Gaano kahalaga sa iyo ang isyu ng solid waste?

- ☐ Walang opinyon
- ☐ Hindi mahalaga
- ☐ Medyo mahalaga
- ☐ Labis na mahalaga

TANONG: Bukod sa dyaryo, bote at bakal, nag-rerecycle ka ba ng mga gamit at kasangkapan? ☐ OO ☐ HINDI

Sa **SANITARY LANDFILL**:

- Tinatabunan ng lupa ang mga tinipong dumi at basura.
- Walang masamang amoy.
- Walang panganib sa kalusugan.



Sa kasalukuyan, <u>P120 BAWAT TAON ANG BINABAYAD NG IYONG PAMILYA</u> para sa pangongolekta ng basura.

TANONG: Kung kailangan magbayad ang iyong pamilya ng mas malaking halaga bawat taon para sa bagong landfill, susuportahan mo ba ang bagong landfill? ☐ OO ☐ HINDI

Ano ang <u>PINAKAMATAAS NA HALAGA BAWAT TAON</u> na maaari mong ibayad para sa bagong landfill? P ☐

Kailangan nating kumilos ngayon!

Ngunit kailangan ng malaking halaga upang mapangalagaan ang kalikasan.

Ibig naming malaman kung ANONG LIKAS NA YAMAN ang mahalaga sa inyo.

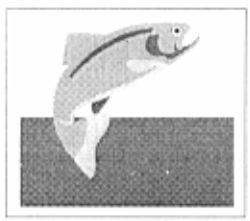
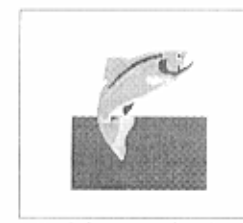
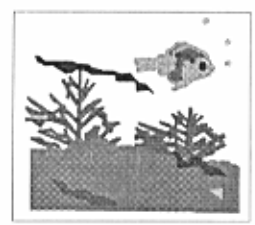
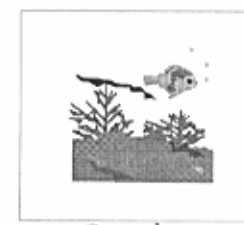
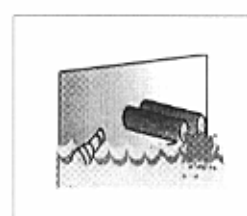
At kung ano ang KATUMBAS NITO SA SALAPI.

Pag-aralan maigi ang bawat katanungan.

Huwag sumahin ang mga bilang.

IV. BACKGROUND INFORMATION

Paglaki ng larawan = pagdami
Pagliit ng larawan = pag-unti.

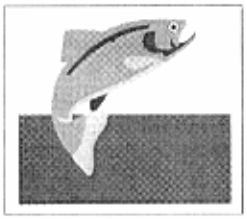
KALAGAYAN NOONG 1985	***KALAGAYAN NG KALIKASAN NGAYON***	*Kung walang hakbang na gagawin:* ***KALAGAYAN SA 2020***
 *Huli ng isda: 6,000 tonelada*	 *Huli ng isda: 3,600 tonelada*	 *Huli ng isda: 2,000 tonelada*
 *Corals: 24% good*	 *Corals: 37% good*	 *Corals: 25% good*
 *Basurang hindi nahakot: 40 tonelada bawat araw*	 *Basurang hindi nahakot: 56 tonelada bawat araw*	 *Basurang hindi nahakot: 80 tonelada bawat araw*
 *Sewage: May 4,000 toneladang dumi ng tao*	 *Sewage: May 6,700 toneladang dumi ng tao*	 *Sewage: May 8,000 toneladang dumi ng tao*

V. PAGSUNUD-SUNURIN

Lagyan ng numero 1 hanggang 4 ang bawat isyu ayon sa halaga nito sa iyo.

1 - pinakamahalagang isyu
2 - pangalawang mahalagang isyu
3 - pangatlong mahalagang isyu
4 - pang-apat na mahalagang isyu

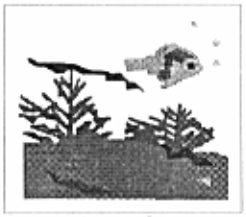
Numero: _____



Isda

- ***Pagkain***
- ***Pinagkakakitaan ng mangingisda***

Numero: _____



Corals

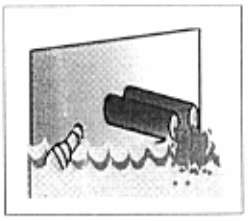
- ***Tahanan at nursery ng mga isda***

Numero: _____

Basura

- ***Basura mula sa mga tahanan at kalakalan***

Numero: _____

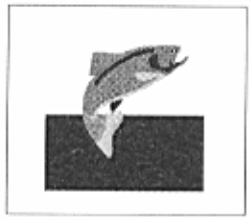
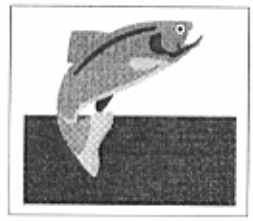


Sewage

- ***Maruming tubig na dumadaloy sa mga kanal***

VI. ***Alin sa 3 programa ang pipiliin mo upang mapangalagaan o mapagbuti ang ating likas na yaman hanggang taon 2020? Paki-check (✓) lang.***

☐ *A* ☐ *B* ☐ *C*

A (Walang Pagkilos)	B	C
		
Huli ng isda: 2,000 tonelada	*Huli ng isda: 3,600 tonelada*	*Huli ng isda: 4,500 tonelada*
~~₱~~ *0* bawat taon	~~₱~~ *1,000* bawat taon	~~₱~~ *2,000* bawat taon
Dagdag na singil sa bawat tahanan	*Dagdag na singil sa bawat tahanan*	*Dagdag na singil sa bawat tahanan*

Alin sa 3 programa ang pipiliin mo upang mapagbuti ang serbisyo ng gobyerno hanggang taon 2020?
Paki-check (✓) lang.

☐ *A* ☐ *B* ☐ *C*

A (Walang Pagkilos)

Basura:
60% kinokolekta at tinatapon sa dump site

~~₱~~ 0
bawat taon

Dagdag na singil sa bawat tahanan

B

Basura:
100% kinokolekta at tinatapon sa landfill sa labas ng iyong barangay

~~₱~~ 2,000
bawat taon

Dagdag na singil sa bawat tahanan

C

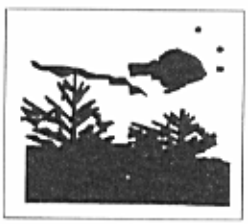
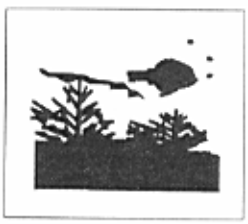
Basura:
100% kinokolekta at tinatapon sa landfill sa loob ng iyong barangay

~~₱~~ 500
bawat taon

Dagdag na singil sa bawat tahanan

Alin sa 3 programa ang pipiliin mo upang mapangalagaan o mapagbuti ang ating likas na yaman hanggang taon 2020?
Paki-check (✓) lang.

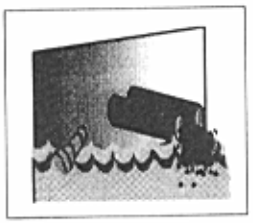
☐ *A* ☐ *B* ☐ *C*

A (WALANG PAGKILOS)	B	C
		
Corals: 25% good	*Corals: 37% good*	*Corals: 30% good*
₱ 0 bawat taon	₱ 1,500 bawat taon	₱ 800 bawat taon
Dagdag na singil sa bawat tahanan	*Dagdag na singil sa bawat tahanan*	*Dagdag na singil sa bawat tahanan*

Alin sa 3 programa ang pipiliin mo upang mapagbuti ang serbisyo ng gobyerno hanggang taon 2020?
Paki-check (✓) lang.

☐ **A** ☐ **B** ☐ **C**

A
(WALANG PAGKILOS)

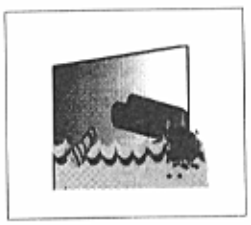


Sewage:
Mananatiling marumi

~~₱~~ **0**
bawat taon

Dagdag na singil sa bawat tahanan

B

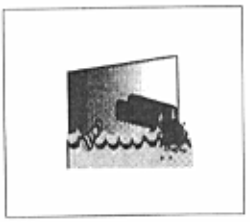


Sewage:
Malilinis ang 50% ng dumi

~~₱~~ **1,000**
bawat taon

Dagdag na singil sa bawat tahanan

C



Sewage:
Malilinis ang 90% ng dumi

~~₱~~ **1,800**
bawat taon

Dagdag na singil sa bawat tahanan

Paunawa: Ang mga sagot mo sa bawat katanungan ay mananatiling lihim (confidential)

MGA KATANUNGAN UKOL SA TUMUTUGON:

- *Ang tinitirhan ko ngayon ay:* ☐ *sariling bahay* ☐ *inuupahan*
- *Nasaan ang bahay mo?*
  *Munisipalidad/Lungsod ng*_____*Barangay*_____
- *Ilang minuto ang layo ng Batangas Bay sa tinitirhan mong bahay?*_____
- *Ilang taon ka nang residente ng Batangas?* _____ *taon*
- *Ikaw ba'y:* ☐ *Lalaki* ☐ *Babae*
- *Ikaw ba'y:* ☐ *Walang asawa* ☐ *May asawa* ☐ *Balo* ☐ *Hiwalay*
- *Paki-tsek ang edad na iyong kinabibilangan:*

  ☐ *15-19* ☐ *20-24* ☐ *25-29* ☐ *30-34*
  ☐ *35-39* ☐ *40-44* ☐ *45-49* ☐ *50-54*
  ☐ *55-59* ☐ *60-64* ☐ *65-69* ☐ *70 pataas*
- *Ano ang pinakamataas na antas ng pag-aaral na iyong tinapos?*

  ☐ *Elementarya* ☐ *High School* ☐ *Vocational/Technical*
  ☐ *College* ☐ *Graduate school (e.g., MA/MS/PhD)*
- *Ikaw ba'y may trabaho?* ☐ *Mayroon* ☐ *Wala*
  Kung Mayroon, ang trabaho mo ba'y: ☐ *full-time o* ☐ *part-time*
- *Ikaw ba'y kasapi ng isang:*

  Government office? ☐ *OO* ☐ *HINDI*
  Civic organization (e.g.,Rotary Club)? ☐ *OO* ☐ *HINDI*
  Environmental organization? ☐ *OO* ☐ *HINDI*
- *Kasama ang iyong sarili, ilang tao ang nakatira sa iyong tahanan?* ____
- *Maliban sa iyong sarili (at iyong asawa), ilang katao na edad 18 pataas ang may trabaho sa iyong tahanan?* ____
- *Ano ang <u>BUWANANG KITA NG IYONG PAMILYA</u> bago magbayad ng buwis?*

  ☐ *1,000-1,499* ☐ *1,500-1,999* ☐ *2,000-2,499*
  ☐ *2,500-2,999* ☐ *3,000-3,999* ☐ *4,000-4,999*
  ☐ *5,000-5,999* ☐ *6,000-7,999* ☐ *8,000-9,999*
  ☐ *10,000-14,999* ☐ *15,000-19,999* ☐ *20,000 pataas*
- *Mayroon ka bang nais ipabatid?* _____

_____

Maraming salamat

ANNEX C

SURVEY PROTOCOL

1. **Approach the respondent with a greeting and smile:**

   Good Morning/Afternoon

2. **Introduce yourself**

   I am (first name) of La Salle Lipa. We are conducting a survey on residents of Batangas. Are you a resident of Batangas Province?

   If yes, continue.
   If no, say: "Thank you. Sorry for disturbing you."

3. **Introduce the survey and its objectives:**

   We would just like to know your opinions about environment issues concerning Batangas Bay.

   We have no political affiliation. The survey has no time limit and all your answers will remain confidential.

4. **Administer the survey.**

   If the respondent has questions on the survey and the Batangas Bay project, tell them you will answer them after he/she completes the questionnaire.

5. **Collect the questionnaires, thank the respondent and hand a token.**

6. **You may entertain questions now.**

   For questions difficult to handle, refer respondent to survey supervisor.

ANNEX D

RULES OF CONDUCT

1. **Observe rules of courtesy.**

- Approach the respondent with a smile and a greeting.
- Briefly introduce yourself and the survey objectives.
- Address an older respondent appropriately with Sir or Madame. Be courteous, even to respondents your age or younger.
- If a person approached is unwilling to participate, do not force him/her to do so. Any reason for unwillingness is a good reason. Unwilling respondents may become liabilities instead of assets to the survey. They may not be able to give well thought of answers. Just say "Thank you" for taking their time.
- Do not forget to thank respondents who have completed the questionnaire.

2. **Observe professional conduct.**

- Always conduct yourself in a manner becoming of a professional. Practice initiative, integrity and honesty. Do your best in every endeavor at any cost. Your efforts will always be rewarded, in monetary or non-monetary terms (e.g., experience, skills, self-confidence).
- Complete all requirements of your job in accordance to procedure and schedule. Your contract binds you your word.
- Always come on time. Tardiness reflects sloppiness, unreliability and inefficiency, and entails losses on other people's productive time.

3. **Keep your neutrality.**

- Answer only questions clarifying what the questionnaire statements mean.
- Avoid feeding answers to the respondent.
- Answer a clarifying question with another question. For example: when the respondent asks you, "What is a landfill?" Answer, "What do you think?"
- Encourage the respondent to answer questions as they understand them, and not as you understand them.

4. **Be firm but cordial.**

- Avoid reacting to negative comments or emotional outbursts. You are not in a position to answer all their questions or to correct all their misinterpretations.
- Remember that everyone is entitled to his/her own opinion, no matter how right or wrong they are to you.
- Entertaining all their questions will be a waste of your time. Politely ask them to hold their questions until they have completed the survey questionnaire.
- Refer unmanageable respondents to your supervisor.

REFERENCES

National Oceanic and Atmospheric Administration (NOAA), Coastal Ocean Office, U.S. Department of Commerce. June 1995. Economic valuation of natural resources: a hand book for coastal resource policymakers. NOAA Coastal Oceanic Program Decision Analysis Series No. 5, 132 p.

Multidisciplinary Team of Experts (MTE). 1996. The coastal environment profile of the Batangas Bay Region. MPP-EAS Technical Report No. 5, 148 p.

PUBLICATIONS OF THE MPP-EAS

- Integrated Coastal Management in Tropical Developing Countries: Lessons Learned from Successes and Failures. 90 p.
- Enhancing the Success of Integrated Coastal Management: Good Practices in the Formulation, Design and Implementation of Integrated Coastal Management Initiatives (*Available in English, Vietnamese, Bahasa Indonesia, French, Portuguese, Swahili, Korean, Chinese and Thai).* 32 p.
- Strategic Environmental Management Plan for the Batangas Bay Region. 96 p.
- Coastal Environmental Profile of the Batangas Bay Region. 148 p.
- Integrated Waste Management Action Plan for the Batangas Bay Region. 76 p.
- Strategic Management Plan for Marine Pollution Prevention and Management in Xiamen. 60 p.
- Coastal Environmental Profile of Xiamen. 110 p.
- Sustainable Financing Mechanisms: Public Sector-Private Sector Partnership. 352 p.
- Oil Spill Modelling in the East Asian Region *with Special Reference to the Malacca Straits.* 304 p.
- Malacca Straits Environmental Profile. 259 p.
- Manual of Practice: Contingent Valuation Survey for Integrated Coastal Management (ICM) Applications 28 p.
- Marine Pollution Updates *(quarterly publication).*
- Tropical Coasts *(bi-annual newsletter).*
- Annual Report 1996. 46 p.

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