



SOCIOECONOMIC MONITORING DRAFT PLAN LAOLAO BAY

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SOCIOECONOMIC MONITORING DRAFT PLAN

LAOLAO BAY

I) BACKGROUND OF SITE

a. Site and monitoring population target(s)

All watersheds in the islands are considered coastal watersheds. Under CNMI law, the Coastal Resource Management office (CRM) has regulatory jurisdiction over all lands of the Commonwealth. Laolao Bay is located on the south eastern side of the island of Saipan. Three watersheds have direct influence on the waters of Laolao Bay; Laolao, Dan Dan, and Kagman.

Laolao watershed is 926 acres, Kagman watershed is 3,666 acres, and Dan Dan watershed is 1,517 acres. These three watersheds cover a total of 6,109 acres.

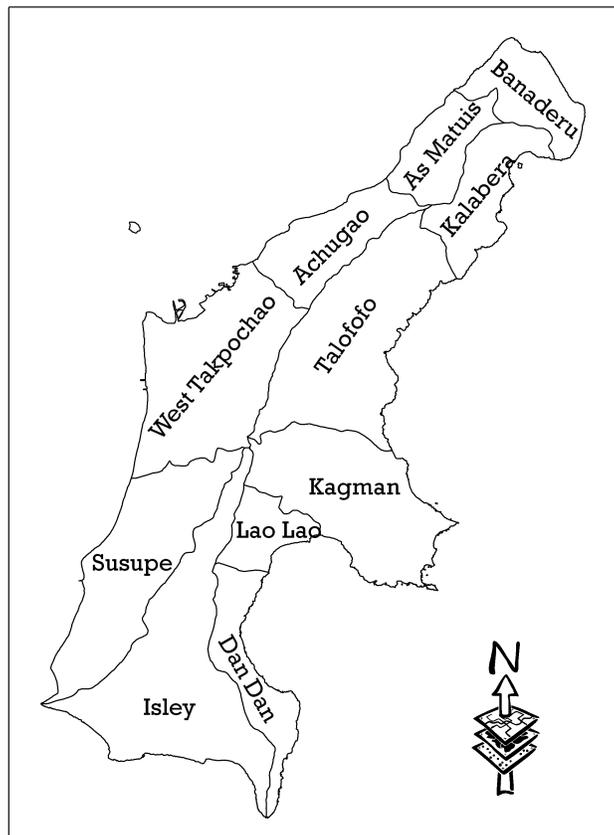


Figure 1: Watersheds of Saipan (CNMI) from Laolao Bay Conservation Action Plan

Two agencies partner to manage these lands, the Bureau of Environmental and Coastal Quality and the Division of Fish and Wildlife (DFW), within the Department of Lands and Natural Resources (DLNR).

Laolao Bay contains steep upland areas already experiencing severe erosion problems, and drains into a large coral reef. The Bay has one of the most popular dive sites on island, with considerable year-round traffic from local residents and tourists with dive operators. There are a number of undeveloped private lots located near the shore, and the roadway that services them and the dive site is frequently in poor repair. The roadway is held by both public and private landowners. Heavy rainfall associated with typhoons causes rutting in the roadway and erosion of the upland soil. DEQ and CRM are currently working with other agencies in this region to reduce non-point source pollution, but the presence of private land is a complicating factor. Acquisition of some of that land would assure that the area does not undergo further development, which would exacerbate the problem.

Culturally, Laolao Bay has a rich and diverse history. Archeological investigations have uncovered both WWII artifacts and ancient artifacts dating from 1600 to 1420 BC. It is also a very valuable spot for fishers, divers, tourists, medicinal plants and local recreational users.

Socioeconomic monitoring in Laolao will focus on the users of the Bay and its surrounding areas. Initially, this will not include tourists and will focus on local users including fishers, divers, medicinal plant collectors, recreational users, and tour operators. However, in the future after establishing a monitoring effort that focuses on residents, it would be ideal to expand and include tourists. This will take substantially more resources as it will involve translating surveys into at least four different languages. Saipan's tourism market is dominated by Chinese, Koreans, Russians, and Japanese.

b. Management plan

A Conservation Action Plan was developed in 2009 to facilitate the interagency management of the Laolao Bay area. This document was the result of representatives coming together from various government agencies, community groups, and other organizations. Together the group developed a vision and a mission statement:

VISION:

Laolao is world renowned as a beautiful tropical destination where natural, cultural and historical resources, knowledge and values are abundant for all to enjoy above and below the waves of Saipan.

MISSION STATEMENT:

In appreciation of the cultural, historical, and environmental significance and educational, economic, and social values that benefit all stakeholders—indigenous people, residents, tourists, traditional fishermen, dive operators and divers—we pledge to protect, preserve, restore, and manage Laolao Bay through stakeholder-driven sustainable resource management practices.

The Laolao Bay Conservation Action Plan, which covers critical aspects of managing the Laolao Bay area can be found at:

<http://cnmicoralreef.com/uploads/cnmi/Images%20and%20documents%20for%20individual%20pages/Laolao%20Bay%20CAP.pdf>

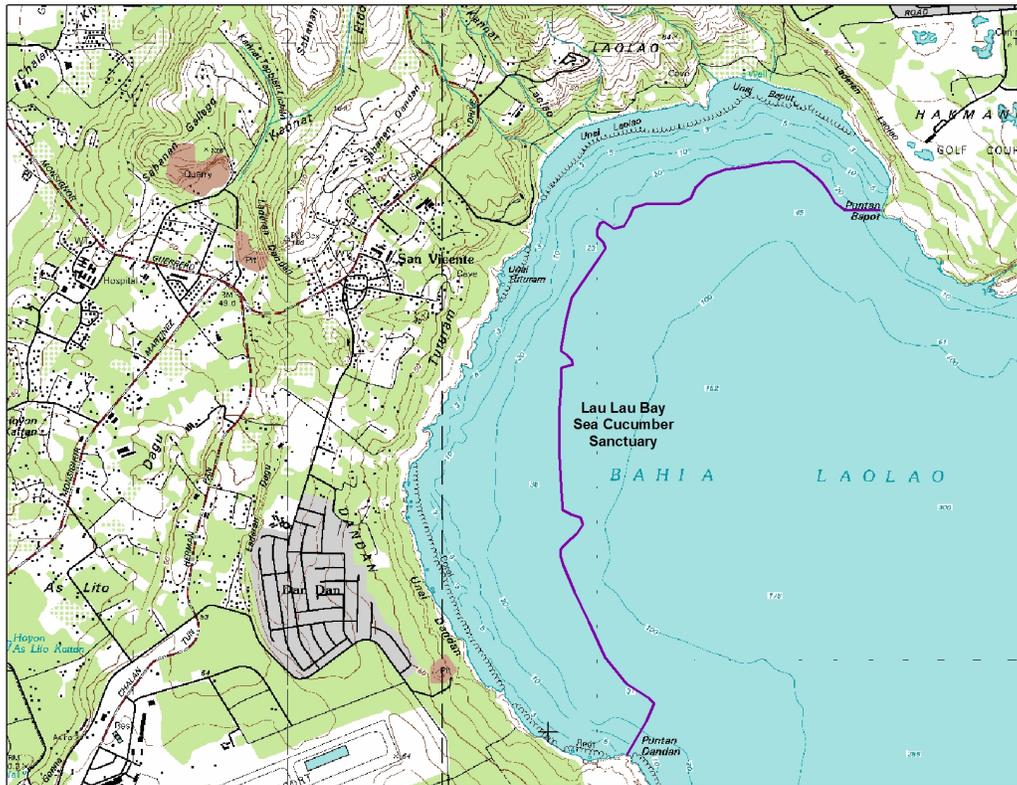


Figure 2: Image from Laolao Bay Conservation Plan

c. Purpose and history of monitoring

A variety of socioeconomic surveys have been conducted on the island of Saipan. In 2005 a “Know Your Watershed” survey was carried out for the purpose of gathering a baseline assessment of socio-economic information on local residents of Laolao Bay watershed. The purpose of the survey was to better understand the knowledge, attitude and perceptions of local residents to help further develop the design of future outreach campaigns. Ninety-two households were surveyed in Laolao Bay. Of that, 66% of respondents were willing to participate in future surveys or to be contacted by the government. While this survey was useful, it did not contain all the information needed to determine the current trends and future management needs of local resources. This includes information on site access, number and type of resource users, tenure and trends among local communities and their dependence on managed areas.

In 2009, a SEM-Pasifika assessment was developed and implemented for Laolao Bay users. This was followed by a re-assessment in 2014 (see survey on Appendix A), spearheaded by Bureau of Environmental & Coastal Quality (BECQ), Division of Coastal Resources Management (DCRM).

The objectives of these assessments were to:

1. Conduct follow up assessment in order to monitor change
2. Identify recreational users for natural resources
3. Identify perceived threats and changes to natural resources
4. Identify perceived frequency of damaging activities
5. Explore perceived effectiveness of existing management
6. Provide baseline assessment of Micronesia Challenge indicators

In 2013, in partnership with CNMI BECQ, a Rare Pride campaign¹ was implemented focusing on the Laolao Bay Watershed. This campaign included the implementation of a pre-campaign and post-campaign socioeconomic assessment. The assessment surveyed households from the villages surrounding the Bay.

d. Stakeholders

The main stakeholder groups in Laolao include fisherman, recreational users, divers, tour operators and landowners/homeowners. Continued efforts to engage stakeholders are critical to the success of the monitoring process.

2) MONITORING OBJECTIVES

1. Understand demographic background of users of the natural resources of the Laolao Bay area
2. Identify perceived threats and changes to natural resources
3. Identify activities taking place and frequency of activities
4. Explore perceived effectiveness of existing management
5. Provide information for Micronesia Challenge indicators²

3) LONG-TERM INDICATORS, DATA COLLECTION METHODS

The following indicators were selected following SEM-Pasifika Guidelines (Wongbusarakum and Pomeroy 2008):

1. Number and demographic profile of visitors (D2),³including age (D4) sex (D6), education/Literacy (D7), ethnicity/clan (D8), language (D10) and occupation (D11)
2. Coastal and marine activities (C1)
3. Perceived resource conditions (T2)
4. Perceived threats to coastal and marine resources (T3)

¹ Rare is a international conservation NGO focusing their work on marketing campaigns, called Pride campaigns, to inspire communities to take pride in their natural resources.

² The Micronesia Challenge Socioeconomic Monitoring Indicators were identified and agreed upon in 2012 by a group of conservation and natural resource management representatives from the different jurisdictions of the region. The indicators were slightly modified during the 2nd Micronesia Challenge Social Measures in September 2015.

³ The codes in the parentheses of indicators 1 through 5 represent corresponding indicators in the SEM-Pasifika Guidelines. Those from 6 though 9 are from the Micronesia Challenge Indicators

5. Perceived coastal management problems (T4)
6. Availability of locally sourced marine and terrestrial foods (MC1)
7. Household participation in natural resources management planning or decision making (MC2)
8. Community awareness of the Micronesia Challenge (MC8)
9. Community support for the Micronesia Challenge (MC9)

Data collection methods:

Indicator	Data Collection Method
Demographic Information (age, sex, education, ethnicity, language, and occupation)	Survey
Coastal and marine activities	Key informant interviews ⁴ , observation, and survey
Perceived resources conditions	Key informant interviews and survey
Perceived threats to coastal and marine resources	Key informant interviews and survey
Perceived coastal management problems	Key informant interviews and survey
Availability of locally sourced marine and terrestrial foods	Survey
Household participation in natural resource management planning	Survey
Community awareness of the MC	Survey
Community support for the MC	Survey

4) SAMPLING DESIGN

Users of the bay will randomly be asked to participate in the survey. The Laolao Bay area has a single road that connects from San Vicente to Kagman. The Kagman entrance is at times impassable. By having enumerators stationed at two sites along the coast of the Bay we are able to identify nearly all users of the area. From past assessments most who are asked to participate in the survey agree. In 2014 an intercept survey targeting resource users was conducted over a 43-day period from 8:00 a.m. to 6:00 p.m. Convenience sampling design was used for the survey with Lao Lao Bay users. Tour operators leading the dive groups are included in the survey.⁵

In the future a random sampling design will be developed for the Lao Lao Bay users and data will be collected in both dry (April-June) and rainy seasons (August-December). The survey will take place during pre-determined timeframes, consistent with those of the previous assessments. To ensure the sample is taken at random, enumerators will survey every 3rd person visiting the area.

For key informant interviews, individuals should be selected based on their knowledge about critical issues facing the bay such as fishing, diving, cultural importance, and sedimentation.

⁴ Key informants will be selected based on their knowledge, experience, and expertise of Laolao Bay.

⁵ There is an identifiable number of tour groups who bring tourists to the bay. They are the same operators throughout the week bringing different tourists every day. These operators are surveyed once although they frequent the site multiple times throughout the survey period. The enumerators speak to all willing operators once during the survey period.

For focus groups, representatives from various stakeholder groups including fishers, tour operators, divers, land-owners, and residents of the area should be selected based on their familiarity with the area and the issues facing it.

5) DATA COLLECTING INSTRUMENTS

To implement the survey, the 2014 survey questionnaire (See Appendix B) will be used as a basis.

For key informant and focus group interviews, following semi-structured questions will be used to guide the discussions:

Fishermen

- Describe your use/relationship/history in the bay.
- What are the main changes you have observed in the bay over the years, especially as they relate to your fishing?
- What changes would you like to see?
- What do you think of the status of the resources in Laolao?
- Are there any threats to your use of the bay?
- Describe your experience (if any) interacting with divers in the bay.
- What do you think about the management of Laolao? What are your suggestions?

Dive Operators

- Describe your use of the bay
- Tell us about your customers and their experiences when diving in the bay?
- What challenges do you face as an operator in Laolao?
- What changes would you like to see?
- What do you think of the status of the resources in Laolao?
- Describe your experience (if any) interacting with fishermen in the bay.
- What do you think of the management of Laolao? What are your suggestions?

Landowners/residents

- Describe your relationship/history in the bay.
- What are the main changes you have observed in the bay over the years?
- What do you think about the status of the resources in Laolao?
- What changes in Laolao would you like to see?
- What do you think of the management of Laolao? What are your suggestions?

Recreational users

- Describe your activities at Laolao.
- What are the changes you have seen?
- Are there any existing threats to your use of the bay?
- What do you think about the status of resources in Laolao?
- What do you think of the management of Laolao? What are your suggestions?

6) MONITORING FREQUENCY AND SCHEDULE

Monitoring is planned to take place every 3 years. In each you, the data will be collected in the dry (between April and June) and rainy season (August-December). Prior to the monitoring partners will convene to review the assessment and make any changes necessary. First the key informant interviews and observations will be implemented and analyzed. Following their implementation and analysis the survey will be implemented.

7) DATA ANALYSIS PLAN

Using available data analysis software, Excel, SPSS, and software for qualitative data, the team will analyze all questions included in the survey and key informant interviews. In addition, some questions may be cross-referenced to gain a deeper understanding of the site. Following the initial analysis, tables, graphs, and charts will be developed for data found to be particularly informative and helpful. How qualitative data will be analyzed will be determined at a socioeconomic monitoring data analysis and data management plan, which is tentatively scheduled in June 2016. Possibilities include using Nvivo.

8) MONITORING TEAM AND TASKS (including training needs if relevant)

Micronesia Islands Nature Alliance will lead the monitoring effort with the partnership of government agencies and the community.

9) MONITORING BUDGET PER ASSESSMENT YEAR

Total \$29,000

Monitoring coordinator (40% annual salary of selected resource manager): \$14,000

Enumerator stipends: \$3,000

Implementation supplies/printing: \$2,000

Fuel: \$1,000

Community meeting, key informant interview and observation supplies: \$1,000

Data entry & analysis: \$5,000

Data analysis software \$3,000

10) MONITORING RESULTS COMMUNICATION PLAN

Audience	Communication method	Key points
Landowners, residents, fishermen, tour operators	Community meeting, one-pager for distribution	TBDD (to be drawn from data)
Natural resource agency managers, Conservation NGO partners	Presentation, report	TBDD

II) GUIDING QUESTIONS TO FACILITATE USING RESULTS FOR MANAGEMENT PLANNING OR ADAPTIVE MANAGEMENT

1. What are the identified recreational uses for natural resources? The monitoring will provide information for managers regarding the use of the bay and better raise awareness of changes over time. As a result, the management will be able to better understand the activities taking place and identify how they can support environmentally benign activities and address harmful activities.
2. What are the perceived threats and changes to natural resources? Because users of the Bay are most aware of what is happening there, they can provide important insight into the threats and changes. In addition, this information can help to develop and target education and outreach efforts to address these threats and changes.
3. What is the perceived frequency of damaging activities by the various users? This information can be provided to enforcement and management to help gain an additional understanding of how often damaging activities are taking place and their nature, and help us continue to work address those threats.
4. What is the perceived effectiveness of existing management? Sometimes management can happen in a bubble and the public is not always aware of the hard work that is taking place. Other times management is not always aware of the issues that are of most importance to resource users. This information will help to ensure that communication between resource managers and users is happening. Management may want to communicate efforts underway through different methods and the community might have excellent input into additional opportunities to make things better and what is working well already.
5. What is current the status of identified Micronesia Challenge indicators? These questions will allow the CNMI to partner with the rest of the region in measuring the MC SEM Indicators.

REFERENCES

Laolao Bay Conservation Action Plan. Division of Environmental Quality, Saipan. 2009.

Supin Wongbusarakum and Bob Pomeroy, *Socioeconomic Monitoring Guidelines for Coastal Managers in Pacific Island Countries*. Secretariat of the Pacific Regional Environment Program: Apia, Samoa, 2008.

Coastal Use and Management at Laolao Bay Saipan: A follow up SEM-Pasifika study of resources users at Laolao Bay, Saipan, Commonwealth of the Northern Mariana Islands, September 29-November 10, 2014.

APPENDICES

Appendix A: Assessment checklists (based on Appendix A and Worksheet 9 in SEM-Pasifika Guideline)

Appendix B: Visitor survey questionnaire from 2014 Assessment

Appendix A: Assessment Checklist/Workplan

Activity	Person Responsible	Local Team Support	Start Date	End Date	Budget
Review and confirm assessment objectives and indicators					
Consult with stakeholders					
Assemble monitoring team					
Design data collecting methods					
Pretest and revise interview questions and survey					
Ensure assessment addresses objectives					
Establish database and plan for analysis					
Train data collection team					
Arrange logistics for field data collection					
Collect data					
Code and enter data					
Complete analysis					
Discuss key learnings					
Draft assessment report					
Draft management recommendations					
Review results with community					
Circulate report					
Finalize report					
Review results with key decision makers					
Determine actions for management changes					
Determine needs for further assessments					

Appendix B: Questionnaire from 2014 Assessment

Laolao Bay Intercept Survey

Name of Enumerator: _____

Survey ID: _____

Date (month/day/year): _____

Greetings! (Buenas dias, Buenas tatdes, Buenas noches)

My name is _____. The Bureau of Environmental & Coastal Quality (BECQ) is conducting a survey to find out what activities are going on in Laolao Bay and what people think and feel about Laolao Bay. This information will be provided to our natural resource agencies to help build environmental programs in Laolao. We expect that this will take approximately 20 minutes of your time. There are no right or wrong answers and you don't have to answer any questions you are not comfortable with. All responses will be kept confidential. Would you be willing to participate?

If no: Say "Ok, thank you for your time."

If yes: Continue

First, I am going to ask some questions about you:

[VERIFY THEY ARE 18 OR OLDER]

1. **DO NOT ASK ALOUD:** Male Female

2. What village do you live in? *Write in answer. If respondent does not live on Saipan, say thank you and end survey now.* _____
3. What is your ethnicity? *Do not read choices. Circle all that apply*
 - a. Chamorro
 - b. Carolinian
 - c. Other Micronesian (Palauan, Chuukese, etc.)
 - d. Japanese
 - e. Caucasian
 - f. Korean
 - g. Chinese
 - h. Russian
 - i. Filipino
 - j. Other: _____

4. What language are you most comfortable speaking? Tell me one or two languages. *Do not read choices.*
 - a. Chamorro
 - b. Carolinian
 - c. Other Micronesian
 - d. Japanese
 - e. English
 - f. Korean
 - g. Chinese
 - h. Russian
 - i. Tagalog
 - j. Other: _____

5. What is the main way you support yourself and/or family? [CHOOSE ONLY ONE]
- Salary from employment
 - Fishing
 - Farming
 - Retirement/pension/Social Security
 - Business owner/self employed
 - Supported by parents/family
 - Other: _____

6. In addition to the main way, do you have other ways of supporting your family? *Please choose all that apply:*
- Salary from employment
 - Fishing
 - Farming
 - Retirement/pension/Social Security
 - Business owner/self employed
 - Other: _____

7. May I ask your age?
- 18-30
 - 31-40
 - 41-50
 - 51-60
 - 61 and over

Thank you. Now I am going to ask you some questions about Laolao Bay, why you visit, and what you think about the area.

8. What is the MAIN reason you come to Laolao? *(Do not read options, select only one)*
- Secluded and peaceful
 - Less crowded with tourists
 - Beautiful scenery and marine life
 - Good fishing grounds
 - Good place to BBQ
 - Good for kids
 - Good place for snorkeling and diving
 - Alternative dive site when others are too rough
 - Other: Please explain

9. What activities do you participate in when in Laolao? I'll read a list. Please say *yes or no* to each one. *Check only the activities they participate in.*
- Fishing
 - Diving
 - Picnic/BBQ
 - Swimming/snorkeling
 - Walking/hiking/running
 - Camping
 - Hunting
 - Mountain biking
 - Collecting herbal medicines
 - Beach cleanup
 - Other: _____

10. In the last year, how often have you visited Laolao?
- 1-5 times in the year
 - 6-10 times in the year
 - 1-3 times per month
 - 1-3 times per week
 - More than three times a week

11. Do you think there are any threats to Laolao Bay?
- Yes [Continue to next question]
 - No [Skip to question #13]
 - Unsure [Skip to question # 13]

12. We would like to know what you think are the two top threats to Laolao. *Do not prompt for answers.*
- Erosion and runoff
 - Littering
 - Illegal Dumping
 - Jungle burning
 - Driving on the beach
 - Too much fishing
 - Harmful fishing practices
 - Illegal harvesting
 - Too many divers
 - Irresponsible diving
 - Poorly maintained road

I. Other: _____

13. What do you think of the health or current status of the following categories of Laolao? I will read you a list and ask you to rate the health of each.

Category	Very Healthy	Somewhat Healthy	Somewhat Unhealthy	Very Unhealthy	Unsure
Water Quality					
Sea urchins					
Beach area					
Sea cucumbers					
Coral					
Turtles					
Forest/Grasslands					
Fish					

14. About how many years have you been coming to Laolao?

- 1-3 (*skip to question 16*)
- 4-7 (*cont. to next question*)
- 8-11 (*cont. to next question*)
- 12-15 (*cont. to next question*)
- 16-19 (*cont. to next question*)
- 20-23 (*cont. to next question*)
- 24-27 (*cont. to next question*)
- 28-30 (*cont. to next question*)
- 31-or more (*cont. to next question*)

15. What changes have you noticed at Laolao Bay over the past four years? I will read you a list of changes; please say Yes or No or Not sure to each one.

	Yes	No	Not sure
More garbage cans			
More frequent garbage collection			
More pavilions			
Paved road			
Improved drainage			
Barriers to prevent beach driving			
Improved parking areas			
Other: _____			

16. Are there changes or improvements you would like to see at Laolao? YES / NO [Circle one]
[If yes, go to #17. If no skip to #18]

17. What improvements would you like to see?

[DO NOT READ LIST]

	Yes
More garbage cans	
More frequent garbage collection	
More pavilions	
Paved road	
Improved drainage	
Barriers to prevent beach driving	
Improved parking areas	
Other	

18. In the past year, have you seen or heard of anyone doing any of these activities? I'll read a list of activities in Laolao. Please say if you have seen or heard about it once, a few times, regularly, or never.

	I have seen or heard about it once	I have seen or heard about it a few times	I have seen or heard about it regularly	I have never seen or heard about it
Burning				
SCUBA diving				
Talaya fishing				
Scuba Spearfishing				
Collecting and harvesting trochus				
Collecting and harvesting sea cucumbers				
BBQ				
Trash dumping				
Driving on the beach				
Fishing with rod and reel				
People standing on or breaking coral				
Collecting medicinal plants				

19. What do you think the reasons are for trash dumping and littering in Laolao? I am going to read you a list of possible reasons and I would like you to rate each one as a strong reason, somewhat of a reason, not a reason, or you don't know.

	Strong reason	Sort of a reason	Not a reason	Don't know
The transfer station is too far				
There is no home trash pickup				
It is easy to do/not likely to get caught				
They don't know it is illegal				
They don't know it can harm the environment				
There aren't enough trash bins				
Trash bins aren't emptied often enough				
They don't care				
People are lazy				
Other:				

20. Do you think these areas are being managed effectively in Laolao Bay? Please answer Yes, No, or Unsure for each one..

Management of	Yes	No	Unsure
Road maintenance			
Trash Disposal			
Fire prevention and response			
Forest/ Grassland management			
Coral Reef & Fisheries Management			
Beach use			

21. What are your top two sources of information about the environment? *Read the list and ask for two top choices:*

- a. Newspaper
- b. Radio
- c. TV
- d. Brochure
- e. Informational signs
- f. Community members
- g. Community meeting
- h. Work
- i. Environmental official
- j. Other: _____

22. Do you have any management suggestions for Laolao?

23. Have you heard of the Micronesia Challenge?

- a. Yes
- b. No
- c. Unsure

IF RESPONDENT ANSWERS NO, END SURVEY AND THANK THEM FOR THEIR TIME. IF THEY ANSWER YES, CONTINUE.

24. If yes, do you support the Micronesia Challenge?

- a. Yes
- b. No
- c. Unsure

25. What are the main goals of the Micronesia Challenge? [NOTE TO ENUMERATOR: THE GOALS OF THE MICRONESIA CHALLENGE ARE TO CONSERVE 30% OF MARINE RESOURCES AND 20% OF TERRESTRIAL RESOURCES BY 2020] [LEAVE BLANK IF DID NOT ANSWER YES].

- a. Respondent got the answer exactly right
- b. Respondent knew it was about conservation but didn't quite get the answer right

c. Respondent didn't know anything about the goals of the Micronesia Challenge

d. Prefer not to answer

26. What do you think you can do to help the CNMI reach the Micronesia Challenge

goals? _____

THANK YOU!