Awak CAP 2019

JUNE 16, **2019**

CONSERVATION SOCIETY OF POHNPEI

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Vision

Wasahn kousoan mwakelekel, epwelpen pihl oh kepikipik kan en kak epwelda ni keneinei

Healthy clean environment with management of the natural resources

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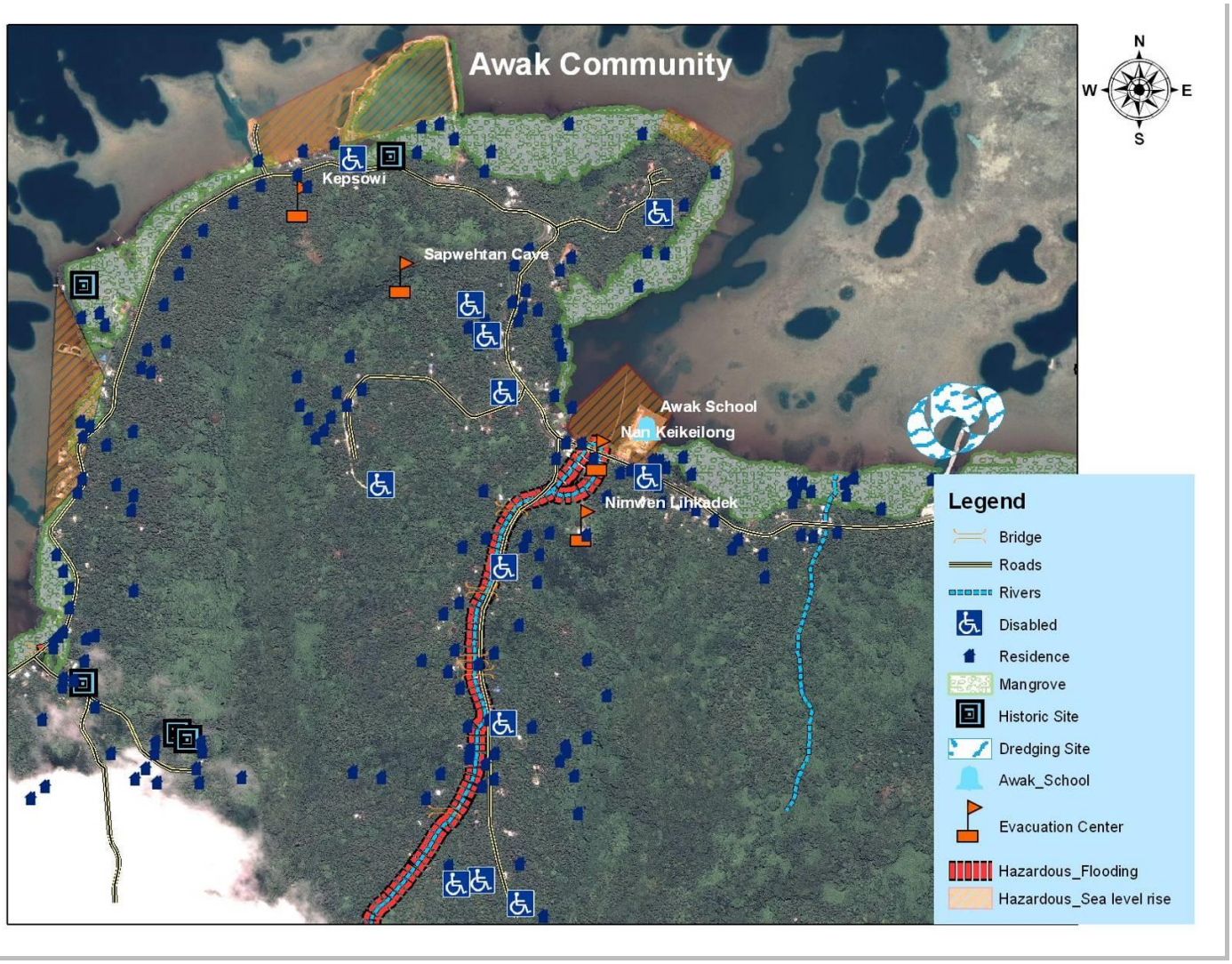

1. Introduction

1.1. A Context for Conservation

Pohnpei State is part of the Federated States of Micronesia located in the north Pacific. Pohnpei is roughly circular in shape with a land area of 345 km2. The island has a population of approximately 40,000, many of which are engaged in fishing, small scale agriculture, and local trade.

The island is mountainous with up to 10 meters of rainfall annually and volcanic soils. Pohnpei is mostly covered with tropical forest other than areas cleared for settlement, infrastructure, and agriculture. The coastline is fringe by mangrove forests, most of which remain relatively undisturbed from clearing or other developments. Some areas are affected by road development and poorly managed land-clearing leads to runoff and sediments affecting the coastal areas and the fringing reefs.

U is one of the municipalities in Pohnpei, which Awak community is located in. There are six villages that make up Awak community. The population size is 1096 individuals based on the 2010 FSM census report. The major occupations and subsistence activities listed for community members are

sakau farming and fishing. The rest of the populations are government and private sector employment, small business owners, fishermen for commercial fishing and farmers.

1.2. Overview of this Report

This report was created to document the results and products of the conservation planning workshops. It is intend to be used by the State and or municipal government, community as reference for the development of the management plan for the sanctuary. The report is organized around the steps of the Conservation Action Planning (CAP) Adaptive Management Cycle (Figure 1), which was also used to organize the workshops. Each step will be described briefly and the main products of that step will be discussed.

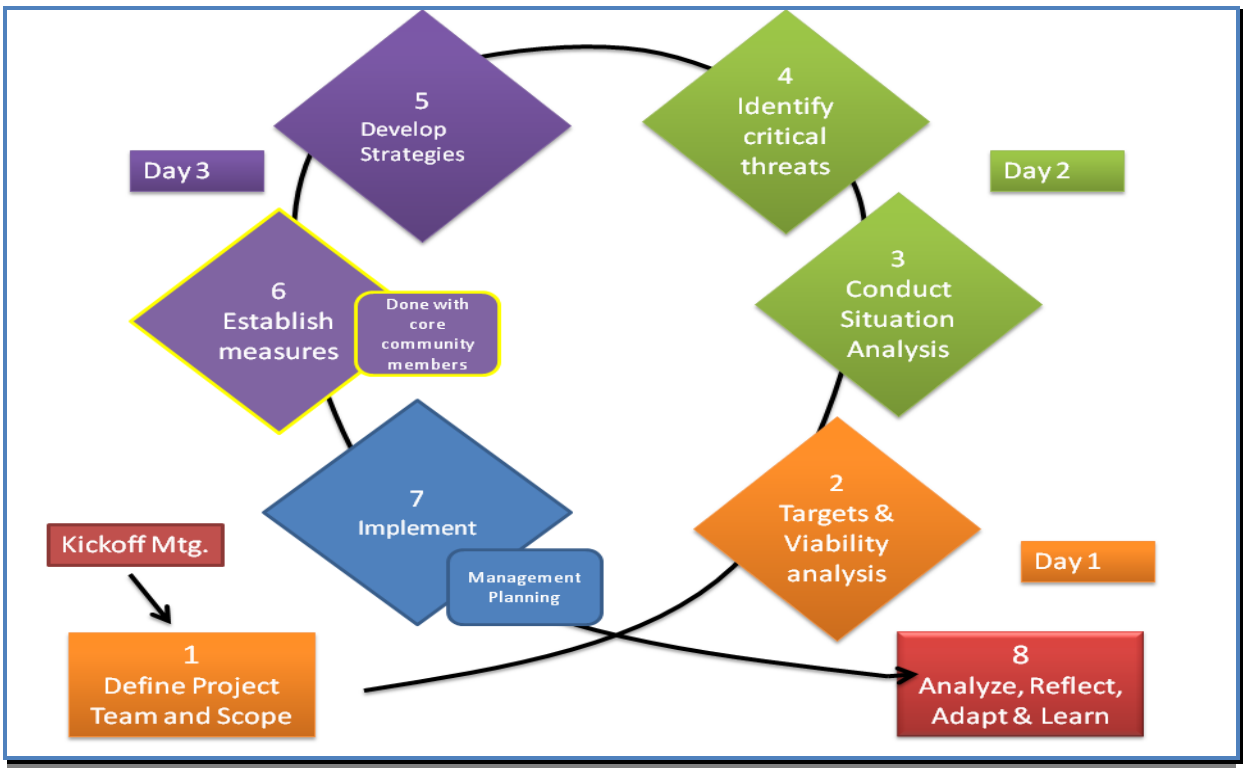

Figure1. Conservation Action Planning (CAP) Adaptive Management Cycle, the project planning method used to organize the planning workshops and this report.

2. Conservation Planning and Adaptive Management

The CAP Adaptive Management Cycle is an interactive process, which helps conservation projects develop and implement strategies, and then evaluate and learn from their experiences. The general steps of the process are to 1) define the project team and scope, 2) identify the conservation targets and assess their viability, 3) identify and assess the critical threats, 4) conduct a situation analysis, 5) develop conservation strategies, 6) establish measures, 7) implement the strategies and measures, and 8) analyze, reflect and learn from the results. The use of adaptive management means that the planning is never fully completed, but is continually refined, improved, and adapted over time. Future work

will include a re-evaluation and refinement of the products to better reflect our growing knowledge and experience.

2.1. Define the Project Team and Scope

The first iteration of the Conservation Action Planning was conducted with Awak community and U Municipal Government Representatives. The participants of the CAP all agreed that the scope of the discussion of conservation in Awak community will include all of the land and coastal marine areas of the village or from mountains to the reefs, Ridge to Reef. The participants believe that in order to ensure effective conservation of land use, marine resources particularly the issue or threat from both sides need to address. The participants decided to focus their discussion on ensuring that critical ecosystems and habitats that support the species for which the communities depend on are maintained ecologically to support long terms viability of these resources.

2.2 Identify Conservation Targets and Assess Viability

Conservation targets are species, communities, or ecological systems that represent the biological diversity of the project area and or what communities care about to conserve and protect. A good set of conservation targets should be designed to include those elements of the system that, if properly conserved, will result in the conservation of the full diversity of the landscape. Coarse-filter targets are intended to capture a large amount of smaller-scale biodiversity, both common and rare, within them, while fine-filter targets should include those small-scale elements that "fall through" the coarse filter and require individual attention.

For project management purposes, the CAP process has tended to restrict the number of targets for a project to eight or less in order to facilitate tracking of each target. This restriction has been successful for the vast majority of CAP projects worldwide. For Awak community, the team selected six targets through a group process of nomination and consolidation. The targets for Awak are described below.

Target Resources:

1. **WATER (RIVERS AND STREAMS).** Pohnpei is consider as one of the wettest places on earth. Water is very important and people cannot live without water. The source of water that the community uses, ground water like springs, rivers and streams. It is important to keep the water sources as healthy as possible for the people.

2. **HISTORICAL SITES (WASA POAD).** Historical sites are considered an important area to consider in the conservation action. Important places that have or objects that have local histories associated with them that bear important cultural exchange in the community. Awak is a small community in U and it is important to consider the historical site to keep the unique Pohnpei tradition. Stone ruins of clans tomb found in Awak, Uh District.

3. **FOREST (NANSAPW/WAHL).** The forest of Pohnpei is considered one of the most diverse in Micronesia. The forest has divided into three categories, upland forest, secondary forest and low land. The upland forest considered to have the most endemic and native plant, trees on the island. The secondary forest consists of agroforestry areas and some of the wetland areas. The low land areas consider to have the most flats areas with marsh, development areas such as roads and houses. The forest located in Awak community is a small portion of the forest compared to the whole island of Pohnpei.

4. **MARINE RESOURCES.** Marine resources include everything that lives in the ocean, like fish, invertebrates and other living organism or creatures in the marine area. Fish and invertebrates are the most common food or meat for Pohnpeians. Other marine resources like sea weed they are still important to the ecosystem.

5. **MANGROVE FOREST (WELINIAK).** Pohnpei has been surrounded by different mangrove species. Based on mangrove distribution map, U has the smallest portion of the mangrove forest ni Pohnpei, but its important to maintain and keep the mangrove as it is. Based on the latest mangrove survey, each mangrove species has a role in protecting the land from sea level rise and strong wind.

6. **WASAHN KOUSOAN.** its very important to consider the environment of the community itself. Each community, each village, each place is very important. Clean and healthy environment makes people life much easier. The community do believe that each village, each house hold need to keep their environment clean and safe to live.

In order to assess the targets' viability, or ability to persist over the long term, the CAP process has developed a system to help teams define what they consider a "healthy" state for each target. The benefit of this exercise is in understanding the current status of the targets, as well as having a clearly defined desired status as a measurable objective toward which to work. The process for doing this involves identifying key ecological attributes (KEAs), indicators, ranges of variation, and rating schemes for each target. KEAs are characteristics of the target that are critical to its biology and that if altered would lead to the loss of the target. KEAs tend to fall into the broad categories of size, condition, and landscape context. Since KEAs are often not directly measurable, associated indicators (key characteristic of a target that can be measured) are selected in order to develop a rating scheme by which to evaluate the target status (Table 1).

Item	Viability Mode	Status	Poor	Fair	Good	Very Good	Type	Source
T1. Water	Simple	Poor						
T2. Historic sites	Simple	Fair						
T3. Wasahn mwahmw llek	Simple	Poor						
T4. Naniak (Mangrove Ecosyst	Simple	Fair						
T5. Marine resources	Simple	Fair						
T6. Health of the people envio	Simple	Fair						

Table1. Summary of viability ranks for Awak community in U Municipality Conservation targets.

Based on information provided by the Awak CAP participants, the overall ranking of the conservations targets is at Fair. Targets such as those heavily used by community members are ranked Poor.

2.3 Identify and Assess Critical Threats

Six threats were identified as reducing the viability of at least one target (Table 2). The threats were ranked according to two factors, contribution and irreversibility in order to gauge the degree of the threat. Contribution is the level at which the threat acting contribute to the source of stress on a given target. Irreversibility is the likelihood for the target to recover given certain threat to that target (Refer to Table 2 for more clarification).

The overall ranking of the threat is affected by the severity and scope of a given stress on the target. Stress is the impairment of key ecological attribute for a given target. Scope is the extent of an area within the conservation target that could potentially be impacted within 10 given current situations. Severity is the level of damage to the conservation target that can be reasonably expected within 10 years under current circumstances.

Description	Ranking			
	Low	Medium	High	Very High
Contribution -- expected contribution of the source, acting alone, to the full expression of a stress (as determined in the stress assessment) under current circumstances (i.e., given the continuation of the existing management/ conservation situation).	The source is a low contributor of the particular stress.	The source is a moderate contributor of the particular stress.	The source is a large contributor of the particular stress.	The source is a very large contributor of the particular stress.
Irreversibility -- reversibility of the stress caused by the Source of Stress (or reversibility of the threat itself if using the alternative threat ranking methodology).	Easily reversible at relatively low cost (e.g., off-road vehicles trespassing in wetland).	Reversible with a reasonable commitment of resources (e.g., ditching and draining of wetland).	Reversible, but not practically affordable (e.g., wetland converted to agriculture).	Not reversible (e.g., wetlands converted to a shopping center).

Table2. Description of criteria used to rank contribution of threat to stress on the target.

Criterion (Description)	Ranking			
	Low	Medium	High	Very High
Scope - Most commonly defined spatially as the proportion of the overall area of a project site or target occurrence likely to be affected by a threat under current circumstances.	Very localized in scope, affect the conservation target at a limited portion of the target's locations.	Localized in scope, affect the conservation target at some of the target's locations.	Widespread in scope, affect the conservation target at many of its locations.	Very widespread or pervasive in scope, affect the conservation target throughout the target's occurrences.
Severity - The level of damage to the conservation target that can reasonably be expected under current circumstances.	Slightly impair the conservation target over some portion of the target's occurrences.	Moderately degrade the conservation target over some portion of the target's occurrences.	Seriously degrade the conservation target over some portion of the target's occurrences.	Destroy or eliminate the conservation target over some portion of the target's occurrences.

Tab

lTable3. Descriptions of the criteria used to rank stress of key ecological attribute on the target.

After the threats were ranked for each target, the CAP excels workbook consolidated threats that occurred for multiple targets and use an algorithm to roll the individual rankings up to an overall rank for that threat. Table 4 summarizes the target ranks and overall rank for each of the 6 threats identified. The "critical" threats, those with overall ranks of medium or higher, and which ranked high for at least one target, are described in more detail in the following pages. In addition, the targets that had at least a threat ranking of medium and low are also discussed.

Threats \ Targets	Marine resources	Health of the people enviornmently free of trash	Wasahn mwahmw llek	Naniak (Mangrove Ecosystem)	Water	Historic sites	Summary Threat Rating
Trash non biodigrable	Low	Medium	High	High	High		High
DREDGING	High		High	High			High
pig pen				Medium	High		Medium
Soil erosion					Low		Low
clearing/development						Low	Low
Out houses				High			Medium
Summary Target Ratings:	Medium	Low	High	High	High	Low	**Overall Project Rating** High

Table4. Summary of rankings for threats that affects Awak community conservation targets

Critical Threats:

1. **Dredging/Filling.** Dredging of sand and coral materials for filling and use in construction projects destroys coral reef habitats. Besides destroying the corals and the reef habitat at the dredging site, dredging also increased turbidity and induce siltation. Dredging destroy mangrove and make easier to the island to experience sea level rise and storm.

2. **Samin sang plastic/Tehnpwoat (Non-biodegradable pollution).** Trash like plastic, cans or non-biodegradable are causing problems to the environment. People are buying more stuff from the stores and at the end of the days, it becomes trash to the environment. These trashes are left outside the houses, in the rivers and end up in our ocean.

3. **Shoreline pollution from pigpen.** Pollution from pigpens is causing more problems to the environment and for this community they would like to address the shoreline piggeries. The community itself is facing more problems from pig waste pollution, polluting their waters and the shoreline. Pigs are considered important to the people but for the health wise, people's health is more important than the pigs.

4. **Peilahn pwehl (soil erosion) Sedimentation.** The threat from sedimentation results from poor land uses and un-compatible agriculture. Sedimentation studies in Pohnpei have shown that poor land use practices from adjacent watershed leads to increased siltation on rivers, estuaries, and coral reefs. Soil erosion that leads to sedimentation can be address through community involvement and support.

5. **Out houses.** Out houses always lead to problem to our waters and the shoreline as well. Out houses causes more streams and rivers are impacted polluted and people are not able to use the waters. Most people live close to the stream and rivers but they cannot depend on these rivers due to the pollution from the out houses. People need to start moving out houses far away from the rivers in order to keep the water clean.

2.4 Situational Analysis

In order to document our understanding of the social and ecological context surrounding threats and targets, the team developed a conceptual model for the targets showing the connections between the threats and the factors assumed to be driving them (Figure 3). The model is by necessity incomplete, and represents the working assumptions of the project team, as opposed to actual ecological relationships. It is intended to be a flexible tool that can be altered over time as our conception of the system develops.

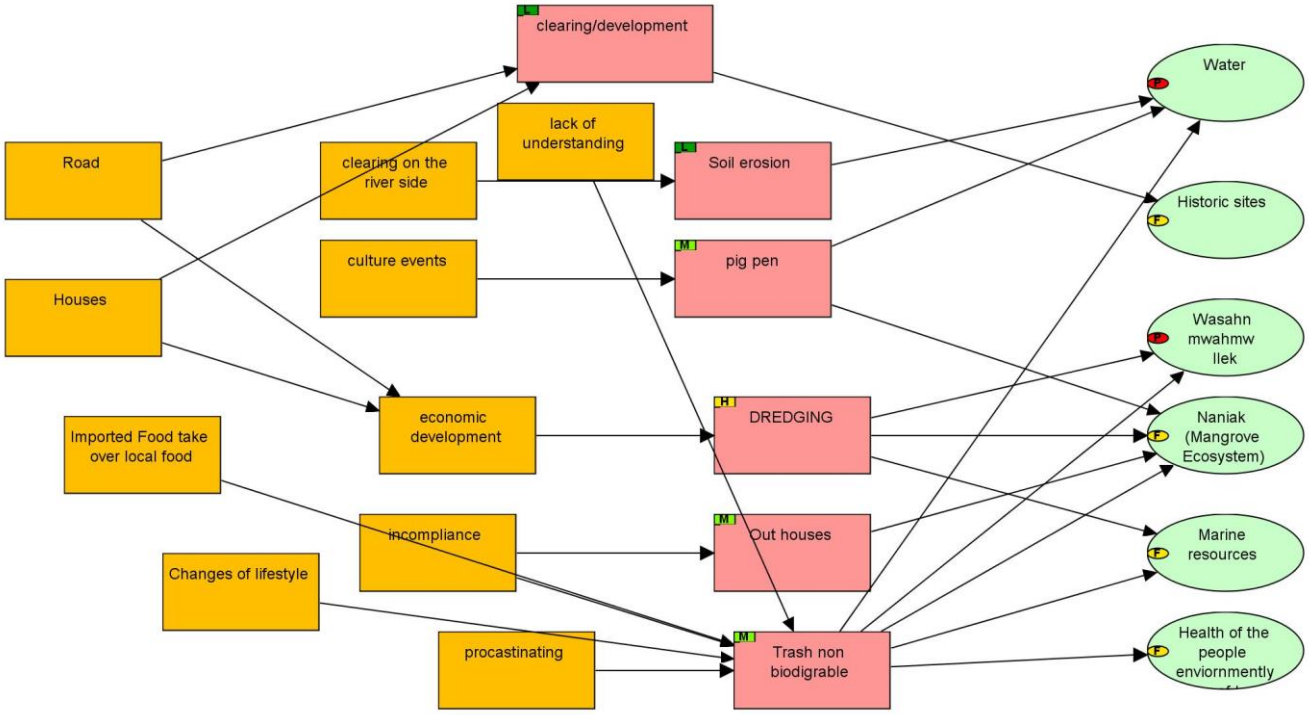

Figure above shows: Situation diagram targets (green), direct threats (pink) and contributing factor dark yellow.

2.5 Conservation Strategies

Strategies consist of one or more objectives, the associated strategic actions, and their action steps. Objectives are detailed statements that describe the desired outcome of the strategy. Actions are the general activities undertaken by the project team to achieve these objectives. Action steps, it's a specific task that required to carry out each strategic actions. Below table 5, list of strategies developed by the team during the workshop.

By end of 2021, Awak community or section one in U will be free from dredge activities. Working group: Village chiefs, Senators from U. 1. Conduct meeting with Chief Minister to address the issue of dredging 2. Community awareness to address dredging issue 3. Community hearing with Pohnpei state Legislature to stop the dredging activities 4. U to adopt new resolution to address dredging
By 2022, Awak community will be able to address and manage the issue of littering, plastic, cans, and other non-biodegradables from the road sites. Working group: Village Chiefs 1. Village meeting to address the issue of littering on the road sites 2. Continue the village effort on cleaning and collecting trash from the road side 3. Work with EPA and other departments on how to address the issue of littering on the road side

4. Work with U municipal police to enforce the littering law 5. Community to use net to collect the trash that coming down from the Awak river to eliminate from entering the ocean. (the net will be place at the bridge near Awak church, to collect the trash from entering the lagoon or getting into the ocean) the community will monitor the site and remove the trash from the net.
By end of 2022 Awak community will work together to better manage the pig waste and human waste from entering the ocean or the waters. Management of pig waste and human waste near the shoreline Working group: Village Chiefs 1. Survey will be conducted in all section one in U, to identify the source of pollutions, and how many pigpens and out houses on the shoreline. 2. Continue promote dry litter piggery in the community 3. Encourage to all houses to flush toil and septic for the human waste
Soil erosion control and management Working group: Village Chiefs 1. Community to work together to identify best method to help prevent soil erosion 2. Develop soil erosion control guideline for the community 3. Community to work together to minimize or control the soil erosion

2.2 Measures and Monitoring

The fundamental question facing conservation project team is: "Are the conservation strategies we are using having their intended impact?" To answer this question, the team will be collecting data on a number of indicators that gauge how well it is keeping the critical threats in check and, in turn, whether the viability of their conservation targets is improving. In addition to biological monitoring the team will need to conduct strategy effectiveness measures (SEM) to determine if strategy being implemented is achieving intended results to support improvement of conservation targets See Table

Target *Indicator*	**Methods**	**Details**
Underground water (pwarer, pilitik) **Water quality & quantity**	Water quality test	EPA
Fresh water eels & other species	Fresh water survey	
Mwahmw (Food fish) Number of fish	Belt transect	CSP, PNI state gov & CCO's
Man pihr (Bird) # of resident bird	Bird Survey	CSP/Forestry
Naniak (Mangrove Ecosystem)	Aerial photography/GPS & GIS	

Table 6. List of indicators for measuring each target with suggested methods for monitoring.

3 Strength, Challenges, Opportunities, and Threats (SCOT) analysis

Strength	Challenges
• Ehupenehn soumas (collaboration between village chiefs) • utuhtpenehn peneinei (families working together) • Weliepen PSL sang lopidi ehu (community member in state Legislator) • Tehtehn doadoahk oh aramas (resources and people with skills) • Tiak (Culture) • Koupoahson keriapak (U constitution)	• Sawehwe (ignorance) • Sou itar en tehte (limited resources) • Soh itar en kaweid en pahpa nohno, soumas en kousapw (lack of sharing advises with the kids and youth group from parents and village chiefs)
Opportunities	**Threats**
• Imwen kaskuhl/mwomwodiso (School and Church • Weliepen pwihn en koukoasoaned (PSL, UMG, UMK • National government (congress) • Market sakau (socializing) • Awak wildlife refuge • Awak farmers association • Lending insitutions	• Kieweklahn mwehi/westernize • Mehn kasahliel ohng youth (• Soukautih • Larcenty (pirap) • Kieweklahn nanwehwe (climate change)

Table 7: SCOT table for Awak Community

4 Conclusion

This report documents the results and products of the conservation planning workshops conducted in Awak community. It is intended to be used by Awak community in U Municipality as reference for the development of the management plan for Awak community. It is important to keep in mind as Awak moves forward that the development of the management plan is an important initial step in an on-going cycle of design, implementation and review of management planning, and should view the plan itself as a "working plan," rather than a final, static document.

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