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Global Prepositioning Network Supportability Analysis in Palau

June 2024

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Prepared for the Naval Postgraduate School, Monterey, CA 93943.

ACQUISITION RESEARCH PROGRAM
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ABSTRACT

This thesis explores the establishment of a Global Prepositioning Network (GPN) site in Palau, focusing on the application of previous research methodologies and frameworks from studies conducted in the Philippines. Under the directives of Marine Corps Logistics Command and sponsored by the Naval Research Program, this research extends the Force Design 2030 initiative to develop three GPN ashore sites in the Indo-Pacific by September 2025. By analyzing existing policies, strategic capabilities, and contracting methods, the study assesses Palau's suitability for GPN implementation. This includes an evaluation of the geopolitical and operational environment of Palau and its alignment with U.S. strategic military objectives. Recommendations are provided for leveraging policy adjustments and infrastructure enhancements to optimize the supportability and effectiveness of GPN operations in Palau. This work aims to assist executive-level decision-making, furthering a comprehensive understanding of the strategic and logistical dynamics involved in expanding the Marine Corps' prepositioning capabilities into the Pacific region.

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Lastly, we extend our gratitude to our fellow students, and the faculty and staff who aided us with this research. We hope that this research proves to be a useful resource in the furtherment of the Marine Corps' prepositioning program as well as a guide to those conducting similar research.

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LIST OF ACRONYMS AND ABBREVIATIONS

AO	Area of Operations
AOR	Area of Responsibility
CAT	Civic Action Team
CM	Contracting Method
CMC	Commandant of the Marine Corps
COFA	Compacts of Free Association
COR	Contracting Officer's Representative
CPG	Commandant's Planning Guidance
CRS	Congressional Research Service
DOD	Department of Defense
EABO	Expeditionary Advanced Base Operations
EUCOM	U.S. European Command
FAR	Federal Acquisition Regulation
FAS	Freely Associated States
FFP	Firm Fixed Price
FY	Fiscal Year
GPN	Global Prepositioning Network
HQMC	Headquarters Marine Corps
I&L	Installations and Logistics
ICASS	International Cooperative Administrative Support Services
INDOPACOM	U.S. Indo-Pacific Command
LCE	Logistics Combat Element
LOGCAP	Logistics Civil Augmentation Program
LOM	Level of Maintenance
MAGFT	Marine Air Ground Task Force
MARCORLOGCOM	Marine Corps Logistics Command
MARFORPAC	Marine Forces Pacific

MCED-P	Marine Corps Engineer Detachment – Palau
MCPP – N	Marine Corps Prepositioning Program – Norway
MCPP	Marine Corps Prepositioning Program
MEU	Marine Expeditionary Unit
MLR	Marine Littoral Regiment
MOE	Measures of Effectiveness
MPF	Maritime Prepositioning Force
NDS	National Defense Strategy
NMCB	Naval Mobile Construction Battalion
O&M	Operations and Maintenance
OCS	Operational Contract Support
ODC	Office of Defense Cooperation
P	Policy
POP	Proof of Principle
PRC	People's Republic of China
QASP	Quality Assurance Surveillance Program
ROMO	Range of Military Operations
SC	Strategic Capability
SIF	Stand-in Forces
SOP	Standard Operating Procedures
USG	United States Government

I. INTRODUCTION

According to *Marine Corps Doctrinal Publication 4*, "logistics provides the resources of combat power, brings those resources to the battle, and sustains them throughout operations" (Headquarters, Marine Corps [HQMC], 1997, Foreword). The current National Defense Strategy (NDS) and the 38th Commandant of the Marine Corps' planning guidance prioritize the Indo-Pacific Area of Operations (AO) due to strategic competition with China, the implementation of the Marine Corps' Expeditionary Advanced Base Operations (EABO) for enhanced forward presence, and the need to secure vital sea lines of communication, particularly in the South China Sea. Marine Corps Logistics Command aims to conduct a global prepositioning network (GPN) supportability analysis in areas aligning with the Commandant's Planning Guidance (CPG). The anticipated GPN may require contracted supply and maintenance operations, normally executed by the U.S. government (USG) personnel, in select locations outside the continental United States. Achieving GPN effectiveness will require support from the U.S. government, large businesses, and strategic host nations. Hence, the USG needs to comprehensively assess the available support entity abilities to provide critical GPN skillsets in each region of interest. This assessment should be informed by historical experience, along with current and future labor market trends, economic factors, restrictions, and barriers to inform GPN supportability options, impacts, and costs. Furthermore, identifying feasible USG actions is necessary to maximize competition and facilitate GPN operational effectiveness with an acceptable efficiency level in each target region (MARCORLOGCOM [Marine Corps Logistics Command], 2023).

A. OVERVIEW

The Indo-Pacific theater, while not a new domain for the U.S. military, bears the weight of historical lessons from World War II that remain critical for preparing for conflicts in the vast region. One significant challenge is the logistical support required to operate across the Pacific's immense theater. Unlike in other theaters, where the U.S. military has recently operated, the vast distances across the Pacific Ocean complicate the

delivery of military resources. Islands spread over thousands of miles, and varying infrastructural capacities across different locations, add difficulties to logistical planning. Because of these reasons, it is impractical to expect the same readiness and availability of supply and maintenance resources throughout the entire AO. Understanding these constraints is essential for grasping the logistical hurdles the U.S. military faces in providing the right resources at the right place and time. The Marine Corps' Tentative Manual for EABO explains the problem:

> Minimizing the traditional 'iron mountain' requires developing a web of supply sources that are forward, persistent, and capable of meeting the demand of Naval units ashore and afloat in the Marine Corps GPN and Maritime Prepositioned Force, anticipated delivery based on data-driven predictive analytics, and operational contract support (OCS) provide commanders options during EABO to reduce footprint ashore, decrease customer wait time, reduce physical and administrative signature, and increase flexibility in their concepts of logistics support. (HQMC, 2023)

Given the expectations and constraints of the EABO concept, the question arises: Which supply and maintenance operations, required by the GPN, can be outsourced to potential support entities to allow Marines to maintain a smaller physical footprint without compromising capabilities? Existing literature synthesizes the claim that forming partnerships with local host nation suppliers and maintenance workshops could significantly reduce the Indo-Pacific operational footprint. For Marines in EABO environments, sustaining equipment and maintenance is crucial. Developing redundancy to shorten supply and maintenance wait times in the GPN will alleviate pressure on host nations and businesses. Thus, the envisioned GPN aims to evolve the prepositioned program into a responsive network of ashore and afloat capabilities to sustain EABO operations.

The alliance between the United States and the Republic of Palau is a strategic partnership that has advanced significantly over the years. Central to this relationship is the Compacts of Free Association (COFA), which has facilitated a mutual exchange of economic support and strategic military access since its enactment in 1994 (Lum, 2024). Palau's strategic location in the Pacific has made it an invaluable partner to the U.S.,

especially given the current geopolitical landscape marked by increased competition with China.

Recently, the U.S. agreed to extend economic assistance to Palau for 20 years starting in Fiscal Year (FY) 2024, signifying the former's strong commitment to the stability and security of the Pacific region. This agreement of approximately $900 million from FY2024-FY2043, emphasizes America's strategic priorities of environmental protection, climate change preparation, healthcare, education, and infrastructure development in Palau (Lum, 2024). Lum (2020) outlines key provisions of the COFA:

- The U.S. will defend the Freedom Associated States (FAS) against attack or the threat of attack.
- The U.S. may exercise the right to block FAS policies inconsistent with its duty to defend the FAS.
- The U.S. has the right to reject military use or strategic access to the FAS by third-party countries.
- The U.S. may establish military facilities in the FAS.
- FAS citizens may reside and work in the U.S. as lawful non-immigrants.
- FAS citizens may volunteer for service in the U.S. armed forces.

While the basing rights may be most attractive to the U.S. military, Palau's former President, Tommy Remengesau, noted, "The U.S. military's right to establish defense sites in the Republic of Palau has been under-utilized for the entire duration of the compact" (Newsham, 2020).

The COFA demonstrates how the mutual priorities of the United States and Palau have improved their relationship by sustaining regional security, stability, and prosperity. Truly, the extension of the COFA's economic assistance and the ongoing defense cooperation reflect a shared commitment to counterbalance the rising influence of China and promote a strategic and resilient partnership in the Pacific.

Our research plans to thoroughly review logistic partnerships aligned with NDS and CPG priorities. By building on existing husbanding agents, we intend to expand the supply network, easing logistic burdens and shrinking the operational footprint for forces that will relocate on short notice. We will also ensure that supply source vetting procedures in expeditionary environments are optimized for the swift support necessary for Indo-Pacific forces.

B. PURPOSE AND APPROACH

This study primarily aims to conceptualize and refine an adaptable framework to establish and sustain GPN sites in Palau. This framework, informed and refined through comparative analysis with analogous research conducted in the Philippines and other Marine Corps' prepositioning programs, seeks to illuminate Palau's strategic capabilities and integration potential with joint partners. The research examines the roles of policy, contracting, and strategic capability in assessing Palau as a prospective GPN location. This will involve conducting a detailed qualitative analysis of Palauan policies, operational contracting methods, and the strategic military capabilities necessary to support the Marine Corps' presence. The framework seeks to distill actionable insights to optimize the GPN's effectiveness in Palau, considering the distinct operational and geopolitical factors that shape U.S. military operations and regional security dynamics.

To assess Palau's viability as a GPN, we concentrated on the following research questions:

1. What operational and strategic resources would be required for the Marine Corps to establish a GPN site in Palau, encompassing necessary equipment, infrastructure, and personnel?
2. Does the strategic advantage offered by a joint force presence in Palau, through a GPN site, outweigh the anticipated financial, political, and operational costs?

3. How can Untalan et al.'s (2023) framework principles for optimal GPN sites be applied to Palau's unique geopolitical and operational environment?

The subsequent chapters of this thesis analyze the strategic and logistical implications of establishing a GPN site in Palau. The Background and Literature Review chapter delves into the evolution of the MCPP, examining its adaptability in response to shifting strategic demands and how these inform current efforts in Palau. The Methods and Data chapter outlines the qualitative methodologies we used to adapt and apply a framework suitable for assessing Palau's strategic value and operational feasibility. The Analysis chapter presents a detailed application of the Measure of Effectiveness (MOE) framework to evaluate the policy, contracting, and strategic capability elements for a successful GPN site. This thesis aims to offer actionable insights and recommendations, ensuring that a proposed GPN site in Palau aligns with U.S. Marine Corps objectives while enhancing regional stability and operational readiness in the Indo-Pacific theater.

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II. BACKGROUND AND LITERATURE REVIEW

Under the direction of General Berger, the 38th Commandant, the U.S. Marine Corps is reevaluating its Global Prepositioning Network, centering on Palau's role within this framework. Recognizing Palau's strategic importance in the Pacific entails adapting the GPN to ensure operational viability within contested zones where adversaries might challenge U.S. power projection. The goal is to develop a sustainable strategy for Palau, underpinning the forward-deployed logistics essential for maintaining a credible deterrent and rapid response capability in the Indo-Pacific theater.

A. BACKGROUND

Understanding the Marine Corps' vision for the evolution of its prepositioning network necessitates a profound analysis of the current Marine Corps Prepositioning Program (MCPP), its history, operational concepts, and its role in future force sustainment. The MCPP was initiated during the Cold War as a strategic response to rapidly deploy forces and equipment to critical regions, minimizing response time in crises. This program strategically stores large caches of combat equipment and supplies at various global locations, allowing for quick mobilization. Originally focused on supporting operations during the Cold War, especially in Norway, the program has evolved to include sites in the Pacific and the Middle East to adapt to changing global military and geopolitical needs. Since its inception, the MCPP has evolved like many military organizations, programs of records, and operational concepts. According to Marine Corps Order 3000.17,

> Marine Corps prepositioning programs continuously evolve. Shifting national priorities and availability of Department of Defense (DOD) resources have prompted the Marine Corps to re-evaluate its priorities. Therefore, the Marine Corps prepositioning program must have the inherent flexibility to address the changing strategic landscape while maintaining the ability to address the myriad of threats across the full Range of Military Operations. (HQMC, 2013, p. 1)

As the national strategic landscape changes, the U.S. Marine Corps must adapt to the United States' dynamic interests, priorities, and adversaries. In March 2020, the Commandant, General Berger initiated the Marine Corps' plan to evolve to contend with

the future character of war. The Office of the Secretary of Defense, Congress, and the Secretary of the Navy approved the plan referred to as Force Design 2030. While the initiative calls for a multitude of drastic changes informed by future operational concepts, General Berger specifically calls for a "holistic examination of our afloat and ashore prepositioning construct" (Commandant of the Marine Corps [CMC], 2022, p. 11). As such, the Deputy Commandant, Installations and Logistics, leads the "transitioning to a GPN that integrates afloat and ashore capability to enable day-to-day campaigning, rapid response to crises and contingencies, and deterrence" (Marine Corps, 2023, p. 8).

B. LITERATURE REVIEW

1. Transforming the Maritime Prepositioning Force

The article "Transforming the Maritime Prepositioning Force: How to Change While Staying the Same" delves into the critical shifts the U.S. Marine Corps undergoes with its Maritime Prepositioning Force (MPF) to address the challenges of modern warfare and aligns with Force Design 2030s strategic priorities. The evolving landscape of threats, including advanced anti-ship missiles and unmanned aerial systems, demands reassessing the MPF's configuration for operational viability in contested zones. This necessitates a strategic pivot from supporting large-scale operations to enabling more responsive, dispersed forces like Marine Littoral Regiments (MLRs) and Marine Expeditionary Units (MEUs) essential for expeditionary advance base operations and other emerging concepts.

Key to this transformation is the integration of EABO capabilities, divestment from heavy combat assets, and a reconfiguration of MPF assets to ensure responsiveness and utility in contested maritime spaces (Officers of Headquarters Marine Corps Plans, Policies & Operations [Expeditionary Policies Branch] & Installations and Logistics [Logistics Operations Branch], 2021). Indeed, balancing the modernization of current assets with the development of future capabilities poses a significant challenge, requiring a careful allocation of resources. The envisioned MPF of 2030 aims for a more integrated afloat and ashore network that enhances the Marine Corps' flexibility and responsiveness across global operations. This complex transition is critical for the Marine Corps to maintain its deterrence and crisis response effectiveness in an era of sophisticated threats and contested

environments, marking a fundamental part of its broader transformation to confront 21st-century strategic challenges.

2. Commandant's Planning Guidance and the Global Prepositioning Network

In 2019, the Commandant of the Marine Corps, General David H. Berger, set a transformative vision for the Marine Corps in the 38th Commandant's Planning Guidance to adapt the force for future conflicts, particularly against near-peer adversaries. The CPG highlighted the imperative to restructure the Marine Corps to better support naval operations within contested maritime environments and facilitate sea control through distributed maritime operations (Marine Corps, 2019).

The CPG's identifies the need for the Marine Prepositioning Program, a critical element of the Marine Corps' rapid response capability for decades; however, the MPF is now challenged by the capabilities of near-peer adversaries (Marine Corps, 2019). This reassessment has prompted innovative concepts like Expeditionary Advanced Base Operations, which aim to ensure Marine forces can persist in competition by leveraging globally positioned supplies (HQMC, 2023).

The concept of Stand-in-Forces (SIF) was introduced to provide flexible and redundant logistics support, enabling the Marines to access supplies from multiple locations, even in the face of adversarial actions (Marine Corps, 2021). In line with these evolving strategies, the Commandant has directed the establishment of ashore sites in the Indo-Pacific theater by 2025, committing to the region's strategic significance (CMC, 2023).

Palau's potential as a strategic hub aligns with the CPG's goals, particularly in enhancing the United States' ability to project power and sustain forces in a contested environment, which is crucial in rising tensions and shifting the balance of power in the Indo-Pacific. Within this strategic framework, Palau, becomes an increasingly critical location for the United States. Given its strategic position in the Pacific Ocean, as part of the broader Indo-Pacific strategy, the CPG's focus on EABO and the development of ashore sites may consider Palau to play a pivotal role in the logistics network that supports

U.S. forces. While the CPG does not mention Palau explicitly, its location and the recent extension of the COFA suggest that it could be integral to the U.S. Marine Corps' operational posture in the region.

3. Global Prepositioning Network Supportability Analysis in the Philippines

The previous NPS thesis by Marine Corps Captains Untalan, Keener, and Sandridge while they attended the Naval Postgraduate School was done at the request of Marine Corps Logistics Command to enhance the Global Prepositioning Network. The research applies a meticulous qualitative methodology to assess current prepositioning programs, comparing them against potential GPN site development requirements (Untalan et al., 2023).

The researchers created a framework to examine the supportability of GPN sites within specific regions or countries, offering actionable implementation strategies. This framework was then applied to the Philippines, providing a case study for future GPN site developments. The work stands as a foundational piece for further strategic positioning and is fundamental for decision-makers in the Marine Corps as it showcases best practices while noting potential limitations that may arise in different locations.

Building upon this foundation, similar research can be applied to other strategic locations like Palau, considering its unique geopolitical and operational context. Palau's strategic value in the Pacific, especially under the extended COFA with the U.S., can be evaluated using the methodologies and insights derived from their thesis to support GPN objectives and strengthen Indo-Pacific maritime operations.

4. Measure of Effectiveness

Wall and MacKenzie (2015) explored the complexity of decision-making processes where multiple objectives, such as policy, contracting methods, and strategic capability, are at play. The authors underlined the relevance of defining and quantifying effectiveness in this context, introducing MOE as a superior analytical tool when compared to indices like the Mercer Index. Figure 1 exemplifies Wall and MacKenzie's multiple-objective

decision-making, where a hierarchy of objectives with several levels details how to maximize the effectiveness of the Sloat Radar.

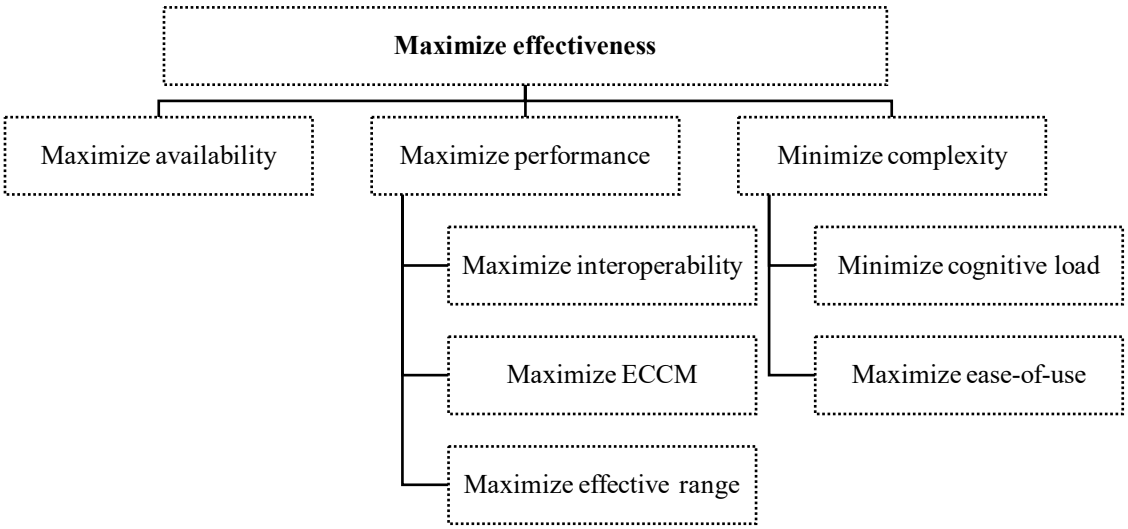

Figure 1. Sample Multiple-Objective Decision-Making Model. Source: Wall and MacKenzie (2015).

MOE allows for analysis by integrating various attributes of alternatives into a single effectiveness score, enabling decision-makers to balance diverse and sometimes conflicting objectives. This approach is more beneficial than the Mercer Index as it provides a more comprehensive and contextualized evaluation framework that considers the relative importance of each objective in decision-making. Hence, the authors advocate using hierarchical structuring to clarify and measure objectives and weighting to capture the decision maker's preferences across different attributes. This thorough methodological framework enhances the accuracy and relevance of the effectiveness analysis in military applications (Wall & MacKenzie, 2015).

5. Engineering Logistics Success

The article by Culbertson and Lawton (2024), "Engineering Logistics Success," offers insights into the challenges and logistical complexities that the Marine Corps or Joint Force might face when establishing a GPN in Palau. Established in January 2022, the Marine Corps Engineer Detachment – Palau (MCED-P) aimed to address naval

construction capacity shortfalls in the Western Pacific. Deployed to Peleliu, a small island in the Republic of Palau, the detachment embarked on a mission to repair a runway built during World War II. The detachment navigated complex financial and contracting landscapes, utilizing various funding sources, and facing non-doctrinal challenges, such as bartering practices and the limitations of existing DOD policies. Additionally, the logistical hurdles of transporting equipment and maintaining supply lines to the theater and within the island chain itself highlighted the need for detailed planning and the ability to quickly devise alternative logistical support pathways.

Depending on the equipment set the Marine Corps intends to establish in Palau, the Marine Corps needs to conduct strategic planning and establish supply chains that can support a GPN in an isolated area as Palau. The article underscores the critical role of logistics in military operations, particularly the complexities encountered in remote deployments like that of MCED-P in Palau. The experiences captured by the authors are highly relevant to the Marine Corps' concept of prepositioning supplies, emphasizing that prepositioning requires more than just placing supplies in strategic locations; it necessitates a comprehensive understanding of logistics, including contracting, transportation, and supply chain management, especially in remote or austere environments. By drawing lessons from this deployment and future iterations of MCED-P, the Marine Corps can enhance its prepositioning strategy in Palau, particularly from a contractual perspective.

C. LITERATURE REVIEW SUMMARY

This chapter examines the focal part of prepositioning programs in enhancing the operational readiness of the U.S. Marine Corps, featuring the evolving strategic partnership between the United States and Palau. It also highlights the necessity of a robust response to potential threats from rising regional powers. The analysis aims to bridge existing knowledge gaps and provide strategic recommendations to optimize the Marine Corps' Global Prepositioning Network in Palau, ensuring it effectively counters the complexities of a contested geopolitical landscape.

III. METHODS AND DATA

A. DATA COLLECTION

The study's data collection centered on an extensive review of academic and operational sources. Key insights were derived by Untalan et al. (2023), as well as comprehensive reports and operational data from Marine Corps Logistics Command (LOGCOM) and Marine Forces Pacific (MARFORPAC). By examining these materials, we gathered qualitative data regarding the current state and future directions of the Marine Corps' GPN efforts in relation to operational logistics, strategic positioning, and the framework necessary for the successful implementation in areas like Palau.

1. Data Familiarization and Framework Analysis

Untalan et al. (2023) analyzed data collected from five distinct Marine Corps programs by combining indexing and charting methods with the Mercer Index evaluation technique. Their paper specified how the analysis was conducted, including the use of a framework analysis to organize the data and the Mercer Index to assign grades based on predefined subcategories, thus providing a structured and measurable approach to evaluation. The analysis is segmented into three key areas: policy, contracting method, and strategic capability. Within these areas, the researchers scrutinize each of the five previously established prepositioning programs according to relevant subcategories, indicating grades and detailed justifications that reflect the programs' alignment with the overarching goals of the Global Prepositioning Network. For instance, the Marine Corps' Prepositioning Program-Norway (MCPP-N) is noted for its strong governmental agreements with the Government of Norway, leading to a significant positive impact. These agreements include aspects like direct logistics support, investment in operating costs, and strong liaison authority essential for establishing and sustaining the GPN site.

The study also highlights the essence of the host nation's contributions, such as in facilities and logistics support, and the political relationship between the United States and the host nation, which is crucial in implementing the programs. The procedures and

regulations authorized for each program were assessed to determine their effectiveness and the potential for their adaptation to the GPN framework.

Each program was given a weighted grade that accounts for policy impacts, host nation assets, government relations, and internal processes. This grading system allows for a comparative analysis of the programs, facilitating the identification of best practices that can be leveraged for future GPN sites. Untalan et al. (2023) comprehensive approach ensures a thorough evaluation of existing prepositioning programs and provides a strategic framework that can be applied to assess the feasibility and advisability of establishing a GPN site, particularly in Palau.

Our research acknowledges the depth and thoroughness of the analysis presented in the thesis and builds upon its foundational work. We assumed that Untalan et al.'s (2023) findings and assessments are accurate and informative for our continued exploration of the GPN concept. We aim to extend their framework to Palau's context by evaluating the unique characteristics and strategic considerations pertinent to this location and how they align with the successful practices outlined in the thesis. By integrating their structured approach with Palau's specific geopolitical and logistical distinctions, we attempt to provide an exhaustive and actionable strategy for implementing GPN sites in the Pacific, enhancing the United States' strategic position in the region and fortifying alliances to resolve contemporary security challenges.

2. Framework Modification and Implementation

Untalan et al.'s (2023) framework for their GPN assessment employs a computational approach that integrates the Mercer Index's weighting and grading system. Each theme within their framework is assigned a weight, and within those themes, each subcategory is also set with a weight, contributing to the overall theme weight (100%). However, this approach does not normalize responses across sub-category themes, potentially skewing their assessments.

To analyze and adapt their framework with a measure of effectiveness that begins by normalizing the grade assigned to each subcategory theme, we followed these steps:

- Assign a normalized score to each subcategory. This score may range, for instance, from 0 to 1, where 0 represents the lowest performance, and 1 represents the highest. Each program's performance within a subcategory will be expressed as a decimal that reflects its relative position within this range. Rather than a scale from 0 to 2 or 5, where all subcategories are given a score from 0 to 1.
- Maintain the weighting system used in Untalan et al. (2023) but apply it to the normalized scores to ensure that while the importance of each subcategory remains as initially determined, the influence of the varying number of levels across subcategories is mitigated. This normalization corrects for potential biases that may occur when subcategories of different scales are directly compared or aggregated.
- Multiply the normalized score by the subcategory's weight to compute a weighted score for a subcategory.
- Combine the weighted scores of all subcategories within a theme to determine an overall thematic score. This sum is then multiplied by the theme's weight to contribute to the program's overall score.

For example, if MCPP-N has a normalized score of 0.75 for subcategory 2 under the contracting method and that question has a subcategory weight of 20%, the weighted score would be 0.15. If a theme consists of four such subcategories and the sum of their weighted scores is 1 (meaning that on average, the program scored 1 across all subcategories), and the theme weight is 30%, the final contribution of that theme to the program's overall score would be 0.3.

Figure 2 presents the hierarchical objectives used to assess GPN supportability in Palau. For example, highlighted in blue is 'Policy,' which is assigned a weight of 30% of the total decision criteria. This objective is further divided into four sub-criteria:

P1: Government Agreements (25% of the Policy criteria)

P2: Host Nation Resources (25%)

P3: Host Nation Relationships (30%)

P4: Policy Evaluation (20%)

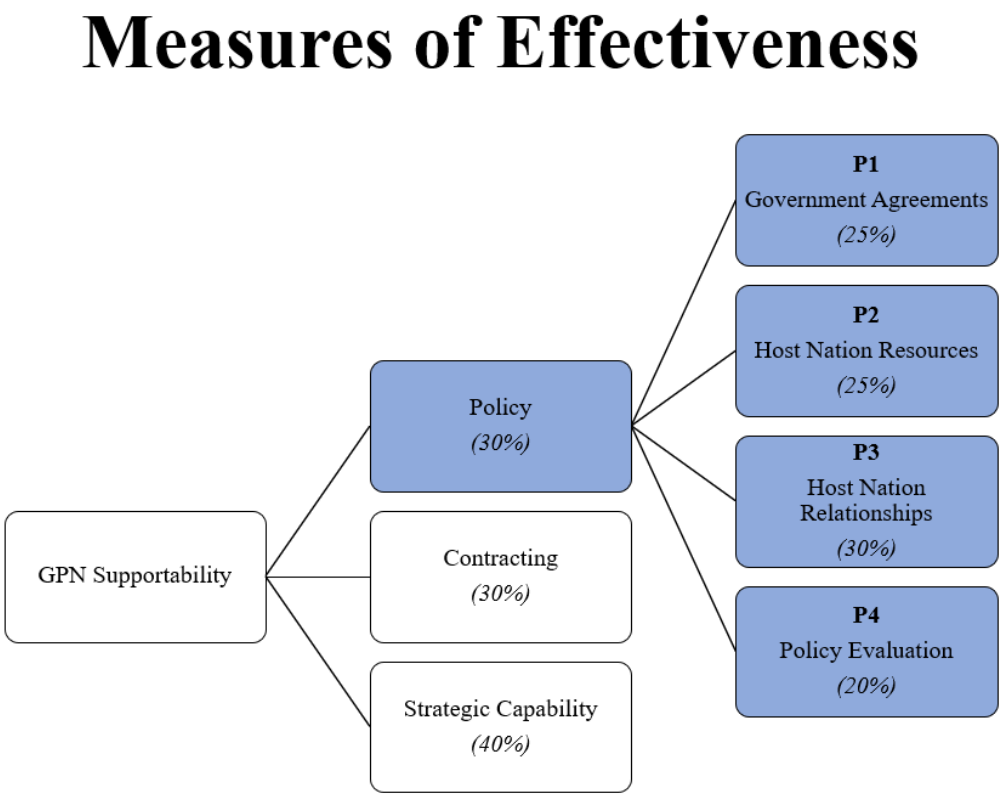

Figure 2. Palau GPN Hierarchical Decision Model. Adapted from Untalan et al. (2023).

These sub-criteria represent specific aspects that must be considered when evaluating the overall policy. Below "Policy" are two additional main criteria, "Contracting" and "Strategic Capability," which are weighted 30% and 40%, respectively. These are parallel to the "Policy" objective in the decision-making model, indicating their significance level in the overall strategy. The diagram illustrates how different policy objectives can be quantitatively and objectively assessed to make informed decisions in the context of GPN supportability.

By applying this normalized and weighted approach to all subcategories and themes, we can calculate a measure of effectiveness for each program. This measure reflects the program's relative performance in each area and the relative importance of each area to the overall assessment. This adapted framework maintains the consistency and comparability of the original approach while ensuring that all subcategories contribute equitably to the final assessment, irrespective of their individual scale sizes.

3. Description of Subcategories

The below Subcategory questions are a continuative analysis based on the foundational work of Untalan et al. (2023) regarding the assessment of a GPN site in the Philippines. We utilized the same validated subcategory questions from their research to evaluate the suitability of Palau for a GPN site. However, we modified their approach by adjusting the weights for specific policy questions three and four and adapting the grading scales to a one-point scale, as outlined in the measure of effectiveness section, enhancing the framework's applicability and precision for Palau's context.

Policy Question 1 (P1): What government agreements were and/or are established that impact program execution?

1. Grading: This question is graded on a 3-point scale ranging from 0 to 1 as follows:

   0 is "No Impact and/or no positive effect"
   0.5 is "Positive impact"
   1 is "Significant positive impact"

2. Weight: 25%. Government agreements are the bedrock for prepositioning agreements. Limitations in operating a prepositioning site would be considered a threat to the Marine Corps' and the Joint Force's operations within their respective areas of responsibility. Therefore, this question is given a weight of 25% in the policy category due to the critical nature of these features.

Policy Question 2 (P2): What assets were/are made available that impact program execution (labor, infrastructure, etc.)?

1. Grading: This question is graded on a 3-point scale from 0 to 1 as follows:

   0 is "No impact and/or no positive effect"
   0.5 is "Positive impact"
   1 is "Significant positive impact"

2. Weight: 25%. Host nation -provided assets and resources, as described previously, can enable a force in contingency and humanitarian assistance missions through their applicability to force closure and other military operations. Although these agreements would be essential in future combat situations, the Marine Corps will find a way to engage an enemy force even if these do not exist. Therefore, this question is given a weight of 25% within the policy category.

Policy Question 3 (P3): What is the relationship between the United States and the host nation government? Will it or does it impact program execution?

1. Grading: This question is graded on a 3-point scale ranging from 0 to 1 as follows:

   0 is "No impact and/or no positive effect"
   0.5 is "Positive impact"
   1 is "Significant positive impact"

2. Weight: 30%. The political relationships between the United States and the host nation have a great deal of impact on DOD operations within any area of responsibility (AOR). This is especially important for forward positioning of equipment and supplies necessary for the effective execution of GPN programs. However, political relationships only play a limited role in the accomplishment of GPN as defined in earlier chapters; therefore, the weight of this question is 30% for the policy category.

Policy Question 4 (P4): What processes/regulations were enacted for program executions?

1. Grading: Effective policy evaluation is a robust process and that is calculated based on several sub-criteria.

   0 is "The implementation did not achieve policy goals"

0.5 is “Only a few policy goals were achieved”
1 is “All policy goals were achieved”

2. Weight: 20%. Internal policies and procedures are critical for program effectiveness and mission accomplishment. Analyzing which policies and procedures established the most effective business practices will ensure future program success. Therefore, this question is given a weight of 20% for the policy category.

Contracting Method Question 1 (CM1): What OCS enables the preposition program to enable six functions of logistics and fair labor between the United States and the host nation?

1. Grading: This question is graded on a 6-point scale ranging from 0 to 1 where:

   0 is “No OCS plan in AOR”
   0.2 is “No OCS plan, alternative contract method in place”
   0.4 is “OCS Plan in AOR, limited contract support”
   0.6 is “OCS in AOR, some contract support”
   0.8 is “OCS includes a LOGCAP contract, limited support”
   1.0 is “OCS includes a LOGCAP contract, full support”

2. Weight: 30%. OCS is given a weight of 30% due to the capabilities and flexibility it provides to operations in each region. OCS plans like Logistics Civil Augmentation Program (LOGCAP) operations are scalable and able to support both current and modified requirements. LOGCAP capabilities include operations and maintenance (O&M) for facilities and/or equipment, transportation, and services under a range of contract methods, from firm fixed price (FFP) to cost reimbursable – no fee.

Contracting Method Question 2 (CM2): What Level of Maintenance (LOM) is contracted out for field and organizational maintenance?

1. Grading: This question is graded on a 5-point scale ranging from 0 to 1 where:

   0 is “No maintenance contract in place”

0.25 is “A maintenance contract is available, but limited field LOM”
0.5 is “A maintenance contract is available, includes moderate organizational field LOM”
0.75 is “A maintenance contract is available, includes organizational field LOM”
1.0 is “A maintenance contract is available, includes both operational and intermediate field LOM”

2. Weight: 20%. Contracted maintenance enhances the continuity to support maintenance actions at a prepositioned program, but it comes at a premium cost. Due to the cost factor, the question is weighted at 20% because contracted maintenance does enhance the capability, but based on the resources available, it could be supplemented with active-duty personnel. Several factors contribute to the contracting of personnel to support maintenance actions on U.S. property, such as citizenship, host nation relations with the United States, and the ability to have local nationals contribute to the maintenance actions.

Contracting Method Question 3 (CM3): Does the host nation lease land and infrastructure and on what terms, to include cost-sharing?

1. Grading: This question is graded on a 4-point scale ranging from 0 to 1 where:

   0 is “Privately owned, no cost-sharing”
   0.33 is “Privately owned, cost-sharing with host nation”
   0.67 is “host nation owned, Contract”
   1.0 is “host nation owned, lend land and infrastructure as bilateral agreement”

2. Weight: 30%. Ready and resilient installations are a critical requirement to support the emerging requirements of Force Design 2030. Global preposition sites enable global responsiveness and managing support to allies and partners by strengthening the relationship with the defense industrial base. The ability to preposition (afloat and ashore) is critical to Marine Corps expeditionary readiness. Land and infrastructure owned by the host nation is the preferred approach for U.S. installations due the sensitivity of material required to be stored in each facility and the threats

surrounding foreign activity. Cost-sharing is encouraged to fortify strengths amongst U.S. allies and partners to contribute towards the combined effort.

Contracting Method Question 4 (CM4): What quality assurance surveillance plan (QASP) is integrated into the contracts to ensure proper oversight of each program?

1. Grading. This question is graded on a 4-point scale ranging from 0 to 1 where:

   0 is "No quality assurance measure plan in place"
   0.33 is "Some quality assurance measure plan in place"
   0.67 is "Quality assurance measure plan in full effect"
   1.0 is "Quality assurance measure plan with a contracting officer's representative (COR) directly assigned"

2. Weight: 20%. Quality assurance is essential to validate contract performance to ensure the warfighter is receiving the requirement with the minimum resources expensed. Fortunately, if the quality assurance plan is found to be lacking, there are opportunities to make timely improvements without disrupting the entire program. As a result, the weight assigned to this aspect is 20%, reflecting its considerable influence on the program within a timely context.

Strategic Capability Question 1 (SC1): What capabilities does the equipment set provide to the MAGTF?

3. Grading: This question is graded on a 4-point scale ranging from 0 to 1 where

   0 is "Prepositioned equipment provides no capability to the MAGTF"
   0.33 is "Prepositioned equipment provides very limited or specific capabilities to the MAGTF"
   0.67 is "Prepositioned equipment provides the MAGTF the capability to respond to most but not all contingencies across the ROMO"
   1.0 is "Prepositioned equipment provides the MAGTF with the necessary capabilities to respond to contingencies across the full ROMO"

4. Weight: 40%. The composition of equipment at a prepositioning site is the principal component to the Marine Corps' ability to remain flexible, adaptable, and lethal as an expeditionary force in readiness. The equipment set located at a prepositioning site ensures CCDRs are provided with a flexible and scalable force with greater responsiveness than that of forces based in the continental United States. This criterion has been given a weight of 40%.

Strategic Capability Question 2 (SC2): Does the prepositioning program's geographical presence add value to the Marine Corps' ability to conduct global operations supporting strategic objectives?

1. Grading: This question is graded on a 3-point scale ranging from 0 to 1 where:

   0 is "Prepositioning location has no impact on the MAGTFs ability to rapidly respond within theater"
   0.5 is "Prepositioning location creates a positive impact on the MAGTFs ability to rapidly respond within theater"
   1.0 is "Prepositioning location creates a significantly positive impact on the MAGTFs ability to rapidly respond within theater"

2. Weight: 25%. The Marine Corps' prepositioning programs must be given critical thought and analysis to be valuable to the service and the CCDR. The physical presence and capabilities afforded through a Marine Corps prepositioning program are invaluable to reassuring allies of the United States' commitment to peace and stability and deterring adversaries and bad actors within the region. As such, this criterion is given a weight of 25%.

Strategic Capability Question 3 (SC3): Does the prepositioning program lend itself to interoperability with partners and allies and pose a credible threat to potential adversaries in the region?

3. Grading: This question is graded on a 4-point scale ranging from 0 to 1 where

0 is “Provides little to no contribution to deterrence efforts overseas or engagements with partners and allies”
0.33 is “Prepositioning program facilitates a minor deterrence force capable of countering adversary activities within the region”
0.67 is “Prepositioning program facilitates a moderate deterrence force capable of countering adversary activities within the region”
1.0 is “Prepositioning program facilitates a significant deterrence force capable of countering adversary activities within the region”

4. Weight. 25%. As a rapid response expeditionary force, the Marine Corps and Navy together display the U.S. projection of sea control and combat power across the globe. Prepositioning programs further augment the Marine Corps’ ability to demonstrate rapid response to military operations by maintaining readily available equipment for Marine forces’ immediate use, as opposed to coordinating the logistics of moving assets and equipment from CONUS to the desired location. The premise behind this idea is that it deters adversarial activity from emerging within regions with an associated prepositioning site since a MAGTF is capable of rapidly responding to an emerging situation, especially when conducted with the joint force and alongside partners and allies. This is a valuable feature and has been given a weight of 25%.

Strategic Capability Question 4 (SC4): What level of maintenance LOM is organic to the prepositioning program that enables the support of military equipment?

5. Grading: This question is graded on a 3-point scale ranging from 0 to 1 where

   0 is “No onboard maintenance activity available, equipment and assets must be supported offsite”
   0.5 is “Prepositioning site enables the capability to conduct field LOM”
   1.0 is “Prepositioning site enables the capability to conduct field and depot LOM”

6. Weight: 10%. Organic maintenance capabilities extend the operational reach for Marine Corps forces utilizing prepositioned gear. Maintenance is a critical function of logistics and enables the ability to keep warfighters in

the fight and accomplish the mission. Fortunately, a key component to the MAGTF is the Logistics Combat Element (LCE) armed with the personnel, expertise, and abilities to augment maintenance efforts at any prepositioning site. Due to the added layer of maintenance redundancy through the LCE, the reliance upon an organic maintenance activity is not as significant compared to other weighting criteria found within the Strategic Capability assessment. As such, this criterion has been given a weight of 10%.

B. JOINT INTEGRATION

Our research on the development of a GPN site in Palau is anchored on best practices from existing joint GPN sites, ensuring interoperability with partner nation systems and optimizing joint force logistics. The analysis is customized to ensure Marine Corps prepositioned stocks are compatible and can be seamlessly integrated into the operations of combined forces. We investigated how existing joint GPN sites have effectively implemented shared resources, improving training and readiness between sister services and partner nations.

Drawing on established agreements from other sites, we examined the legal and policy frameworks that have facilitated effective joint use, looking to apply these lessons in using facilities and resources in Palau. We are especially interested in innovative cost-sharing strategies proven to enhance efficiency and mutual benefit in other joint operations.

The strategic mobility and rapid response capabilities refined at established joint GPN sites provide a blueprint for the success of a potential site in Palau. By incorporating these best practices, our goal is to provide decision-makers with the framework for a GPN site that meets the unique challenges and opportunities in Palau.

C. SUMMARY OF METHODS AND DATA

This chapter's research methodology provides a restructured approach for evaluating Marine Corps GPN sites tailored specifically for Palau. This framework draws from the established practices of existing GPN sites focused on ensuring that Marine Corps

prepositioned stocks are fully interoperable within joint and combined forces operations. It includes a detailed analysis of policy, contracting, and strategic factors that can impact the capabilities of a potential GPN site in Palau to integrate best practices for joint force standards. Through this methodology, the study aims to inform decision-makers about the optimal establishment and development of GPN in Palau, securing a consistent and operationally effective presence in the region.

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IV. ANALYSIS

A. APPLICATION OF THE MEASURE OF EFFECTIVENESS FRAMEWORK

Analyzing the MOEs is the most critical and delicate step when evaluating effectiveness. Figure 2 shows the MOEs related to GPN supportability. Each measure and weight were discussed and verified with key decision-makers surrounding GPN supportability (i.e., MARCORLOGCOM and USMC War Reserves). Each sub-category (P1–P4) of the analysis was rated on a 0 to 1 scale, following a low, medium, and high continuum based upon how they are evaluated by the research team, the assumptions made during the analysis, and our specific evaluations, given any limitations on access to current/ relevant data.

1. Policy

P1: Government Agreements

What government agreements were/are established that impact program execution?

Objective: Identify the strengths and weaknesses of the government agreements for each program and provide a grade based on their impact on a program's mission.

Government agreements play a critical role in program success. Specific to Palau, as previously mentioned, COFA is a major government agreement with the U.S. that provides financial benefits to Palau, as well as an assurance of security by the U.S. Additionally, and more importantly, COFA allows for U.S. military activity to be conducted in Palau while enabling military bases on the islands. Although this agreement has been long-standing since 1986, funding had lapsed and was in question from 2023 until 8 March 2024, when Congress passed $7.1 billion in support of COFA over the next 20 years (Sevastopulo & Hille, 2024). During the lapsed period, the People's Republic of China (PRC) had offered funds to Palau and the other nations of COFA. Without this agreement, the ability to preposition equipment and forces was at significant risk. Given

the recent passage of funding in support of COFA, we evaluated this sub-category as a 1 ("High").

P2: Host Nation Resources

What host nation assets were/are made available that impact program execution (labor, infrastructure, etc.)?

Objective: Identify what the host nation provided within the governmental, agency, and other agreements, which provide assets such as infrastructure, personnel and/or labor, logistics support, etc., which inherently impact the mission accomplishment of the prepositioning site.

In evaluating P2, the capabilities that Palau provides to the U.S. were considered. Infrastructure is limited within Palau partly due to its geography and the makeup of a contingent of islands, but Palau is also severely affected by tropical storms that wreak havoc on their infrastructure. Palau exhibits restricted capacities in port and airfield infrastructure, which undermines its utility as a strategic logistical node for military operations. Although there is a latent potential for sustaining prepositioned stocks to enhance on-island military capabilities, this is contingent upon substantial infrastructural enhancements. The existing facilities are inadequate to facilitate its role as a principal throughput hub for operations in the first island chain. Limitations in the workforce due to an approximate population size of 18,000 citizens and the vast majority of Palau's GDP coming from tourism limit its capacity to improve infrastructure. As a part of COFA, the USMC deploys a yearly rotational force of engineers to assist with infrastructure projects, but it is limited in scope due to the force size and the level of capability provided. If the U.S. pursues prepositioning in Palau, investments in infrastructure would need to be prioritized by the Marine Corps and Joint Force to ensure the successful deployment of personnel and equipment. For all these reasons, we evaluated that P2: Host Nation Resources was 0.5 ("Medium"), with noted areas for improvement to support a GPN site.

P3: Host Nation Relationships

What is the relationship between the United States and the host nation government? Will it or does it impact program execution?

Objective: Analyze the current political relationship between the host nation government and the U.S. government. Additionally, as relationships are specifically tied to historically significant events, this question is posed to highlight the dynamics that allowed the establishment of the prepositioning site within the host nation's borders.

The criteria of P3 were based on the relationship between the U.S. and Palau annotated in the current report's background. The defense aspects of the COFA remain constant, allowing the U.S. to maintain its defense posture in the Pacific. Palau's strategic foresight is evident in its refusal to establish relations with China, favoring ties with Taiwan, and aligning with the United States' strategy to counter China's regional influence (Lum, 2024). The U.S. military's construction of a high-frequency radar system in Palau further signifies the deepening military cooperation between the two nations. This move is part of a broader U.S. strategy to ensure a free and open Indo-Pacific, as articulated in the Biden Administration's 2022 Indo-Pacific Strategy (Lum, 2024). Notably, with the recent activities surrounding COFA funding, there is potential for future issues with relations if the United States' commitment to Palau is questioned each time that funding is set to be renewed. At this juncture, we evaluated the relationship as 1 ("High") due to the historical ties.

P4: Policy Evaluation

What processes/regulations were enacted for program execution?

Objective: This broad question is used in identifying essential business practices internal to prepositioning sites, which allow for mission accomplishment. The data is pulled from internal standard operating procedures (SOPs), tactics, techniques, procedures, and other standardized management documentation that establish policies and procedures for the programs.

In assessing P4, a comparative analysis was conducted between the established business practices of existing prepositioning programs and those presently employed in Palau. Given the small Marine Corps presence in Palau, the SOPs typically developed and refined over years of consistent mission execution or presence within the same Area of Responsibility (AOR) are yet in their preliminary stages. The Marine Corps has initiated a Proof of Principle (POP) in the Philippines to ascertain the feasibility of establishing

prepositioned stocks there, thereby validating its potential as a viable GPN location. This POP delineates the essential elements for the execution of a prepositioned program, including authorities, responsibilities, and procedures. Efforts are underway to implement a similar POP in Palau; however, it is anticipated that establishing a program in Palau to the maturity level of the Marine Corps Prepositioning Program-Norway (MCPP-N), which has undergone four decades of procedural evolution, will require considerable time. Despite the absence of formalized SOPs, the Marine Corps Engineer Detachment-Palau (MCED-P) and other units participating in exercises in Palau have consistently achieved operational success. Because of these reasons, our evaluation of P4 resulted in a score of 0.5 ("Medium"), indicating areas of process improvement to effectively support the establishment of a GPN site.

2. Policy Analysis Results

Table 1 lists the results of the Policy MOE evaluation related to GPN supportability. Overall, the weighted grade of the Policy sub-category of GPN supportability was 77.5%.

Table 1. Policy MOE Evaluation

Sub-Category	Min Grade	Max Grade	Weight	Grade	Weighted Grade
P1	0	1	0.25	1	0.25
P2	0	1	0.25	0.5	0.125
P3	0	1	0.30	1	0.30
P4	0	1	0.20	0.5	0.10
Total Policy MOE Grade					0.775 (77.5%)

Compared to other prepositioning efforts in the Marine Corps, this grade is above all other established prepositioning sites. As denoted in Figure 3, Policy accounts for only 30% of the total evaluation of GPN supportability. Additionally, this evaluation was limited in scope due to timely accessibility to critical information. From a historical context and our subjective assessment, the policy criteria score may be refined further as policy changes are implemented to enhance the success of a GPN in Palau.

3. Contracting Method

The contracting methods are equally vital in applying this framework to Palau. The sustainability and operational readiness of a GPN site relies on the effectiveness of these methods. By employing the same subcategory questions used in previous analyses, we evaluate Palau's contracting suitability. By analyzing the best practices drawn out from Untalan et al.'s (2023), we highlight their relevance in refining the GPN supportability for Palau, aiming to enhance the strategic support and sustainability of the prepositioning program within the region.

C1: Operational Contract Support

What operational contract support OCS enables the preposition program to enable six functions of logistics and fair labor between the United States and the host nation?

Objective: Identify the contract method of the OCS within the AOR that supports the prepositioned program and provide a grade based on whether the OCS hinders or enables the program's mission success.

In assessing the current level of OCS for a prepositioning program in Palau, a grade of 0.2 seems appropriate. This grade reflects the absence of a dedicated OCS plan within the Area of Responsibility (AOR), with alternative contract methods in place. The Office of Defense Cooperation (ODC) relies on the International Cooperative Administrative Support Services (ICASS) for procurement services backed by a Contracting Officer. For activities such as VALIANT SHIELD exercises, the ODC works with the embassy to determine services needed, suggesting some level of coordination and contractual support, although not through an OCS plan. This ad hoc approach allows for operational flexibility and demonstrates a promising stage of contracting maturity in Palau. However, it lacks the comprehensive structure and scope of support that a formal OCS plan would provide, as evident in more established regions with full LOGCAP support, like the Philippines. (Office of Defense Cooperation, U.S. Embassy Republic of Palau, personal communication, March 5, 2024)

C2: Level of Maintenance

What Level of Maintenance (LOM) is contracted out for field and organizational maintenance?

Objective: Identify if and how maintenance is contracted to support the prepositioned program. The goal of this question is to determine what LOM is appropriate to contract out as it relates to program readiness and how labor is contracted under the Federal Acquisition Regulation (FAR).

For Palau, we assigned a grade of 0.25 based on the presumption that a potential maintenance contract exists but offers only limited field LOM. The presence of the Civic Action Team (CAT), including Army, Navy, and Air Force engineers, provides more robust capability with the equipment and expertise required for their community projects and rotational deployments. They offer educational apprenticeships to locals in various engineering trades, contributing to the development of internal capabilities. Although these initiatives indicate a degree of maintenance support, they are not formalized under a maintenance contract specific to GPN needs. The internal capabilities of CAT and the Marine Corps Engineering Detachment (MCED) present in Palau can be leveraged to some extent for field maintenance, supporting the GPN site indirectly. This setup marks the initial stages of establishing LOM, acknowledging the intent and efforts made towards maintenance support but recognizing the limitation in scope and formalization typically provided by a dedicated OCS maintenance contract.

C3: Host Nation Resources

Does the host nation lease land and infrastructure and on what terms, to include cost-sharing?

Objective: Identify the contract agreements and methodology for the utilization of land and infrastructure. The goal of this question is to determine if the land at each prepositioned site is owned by the respective host nation or a private organization that leases the land for the prepositioned program. If the land is privately owned, does the host nation share in its cost?

Based on the Compacts of Free Association and their subsidiary agreements, as well as the specific arrangements regarding defense sites, military use, and operating rights, Palau would be assigned a grade of 1.0. This score reflects the high level of cooperation

and shared responsibilities highlighted by the agreements, which denote a multitude of host nation-owned lands and infrastructures made available through bilateral agreement without cost. Such agreements signify an alignment of strategic interests and mutual benefit, indicating that Palau's support for program execution, as it pertains to land and infrastructure, is substantial and vital. The partnership clearly articulates the provision of defense sites to the United States, emphasizing the transfer of title to properties owned but not required by the U.S. in Palau, granting extensive military use and operating rights, and recognizing sovereignty over its territory and resources. The details of these agreements demonstrate a robust framework of support which is integral to the operation and execution of defense and military programs, thereby justifying a grade reflecting a significant impact.

C4: Quality Assurance Surveillance Plan

What quality assurance surveillance plan (QASP) is integrated into the contracts to ensure proper oversight of each program?

Objective: Identify if contracts in support of contingency operations at each prepositioned program include an adequate QASP to ensure the contractor's performance meets the performance standards contained in the contract. The QASP established procedures on how contracts are assessed and/or inspected with some or continuous oversight.

Assigning Palau a grade of 1.0 on the provided grading scale reflects the existence of a comprehensive Quality Assurance Surveillance Plan (QASP) that includes a contracting officer's representative (COR) directly assigned to oversee contract performance. The presence of a permanent COR in Palau is a strong indicator of a robust oversight mechanism designed to ensure contractor compliance with performance standards. This grade represents the highest level of contractual oversight within the context of U.S. military operations in Palau, signifying that all quality assurance measures are not only planned but also actively managed and enforced by a designated representative. This stringent level of oversight aligns with best practices for contract administration as highlighted by the Defense Procurement and Acquisition Policy, ensuring contracts are monitored effectively to confirm adherence to established guidelines and project specifications.

4. Contracting Method Analysis Results

Table 2 lists the results of the Contracting Method MOE evaluation related to GPN supportability. Overall, the total Contracting Method MOE grade was 0.61 (61%).

Table 2. Contracting Method MOE Evaluation

Sub-Category	Min Grade	Max Grade	Weight	Grade	Weighted Grade
C1	0	1	0.30	0.20	0.06
C2	0	1	0.20	0.25	0.05
C3	0	1	0.30	1	0.30
C4	0	1	0.20	1	0.20
Total Contracting Method MOE Grade					0.61 (61%)

This composite score suggests that while there are standard practices in place regarding host nation resource utilization and quality assurance, there are significant gaps in operational contract support and maintenance levels. These areas present opportunities for enhancement to better support the strategic and operational objectives of the GPN site in Palau

5. Strategic Capability

SC1: Equipment Set Capability

What capabilities does the equipment set provide to the MAGTF?

Objective: Identify the general composition of gear and equipment and assess the capabilities that are derived from the prepositioning program that support a scalable and flexible MAGTF to respond to military operations, including crisis, contingencies, humanitarian assistance and disaster relief, major combat, and steady state operations.

A grade of 0.67 is assigned to Palau to reflect the potential for prepositioned equipment to provide the MAGTF the capability to respond to most, but not all, contingencies across the Range of Military Operations (ROMO). Palau's current airfield and port capacities limit it as a major throughput node, yet sites surveyed could support full equipment storage with infrastructural development. Despite the throughput

limitations, the presence of a permanent Contracting Officer indicates the potential to facilitate the significant infrastructure development required along with the sustainment of prepositioned equipment, which is essential for maintaining the MAGTF's ability to respond to a variety of operational demands. This infrastructure, combined with the strategic location of Palau, contributes to the region's contingency preparedness, warranting a grade indicative of significant operational support capacity. (Trip Report dated 27 Feb 24)

SC2: Geographical Presence

Does the prepositioning program's geographical presence add value to the Marine Corps' ability to conduct global operations supporting strategic objectives?

Objective: This question assesses the ability of a prepositioning program to generate a rapid response capability within a theater of operations by providing the MAGTF with a strategically sound location from which to draw equipment and supplies.

A grade of 1.0 is justified by the strategic value of its geographic positioning in the U.S. Indo-Pacific Command (INDOPACOM) area of operations and the Department of the Navy's ability to support national strategic objectives from Palau. Figure 3 shows established DF-21 missile launch sites sourced from publicly available data (Missile Threat: CSIS Missile Defense Project, 2024). Surrounding these sites are threat rings with a radius of 2,150 kilometers, corresponding to the operational range of the DF-21, a medium-range ballistic missile, as identified in the Missile Threat database (2014). The image represents Palau as a blue rectangular symbol. Concentric circles originating from Palau, denoting distances of 350, 700, and 1,050 nautical miles, convey the spatial-temporal dynamics concerning the U.S. Navy's ability to transport prepositioned supplies from Palau. Hence, this map underscores Palau's pivotal locational advantage, situated beyond the DF-21's threat range, thereby enabling the U.S. Navy to support expeditionary advanced bases within a 72-hour timeframe. For these reasons, Palau's role as not just positive in impact but rather significantly influential in shaping strategic considerations underlying the United States' disposition in INDOPACOM.

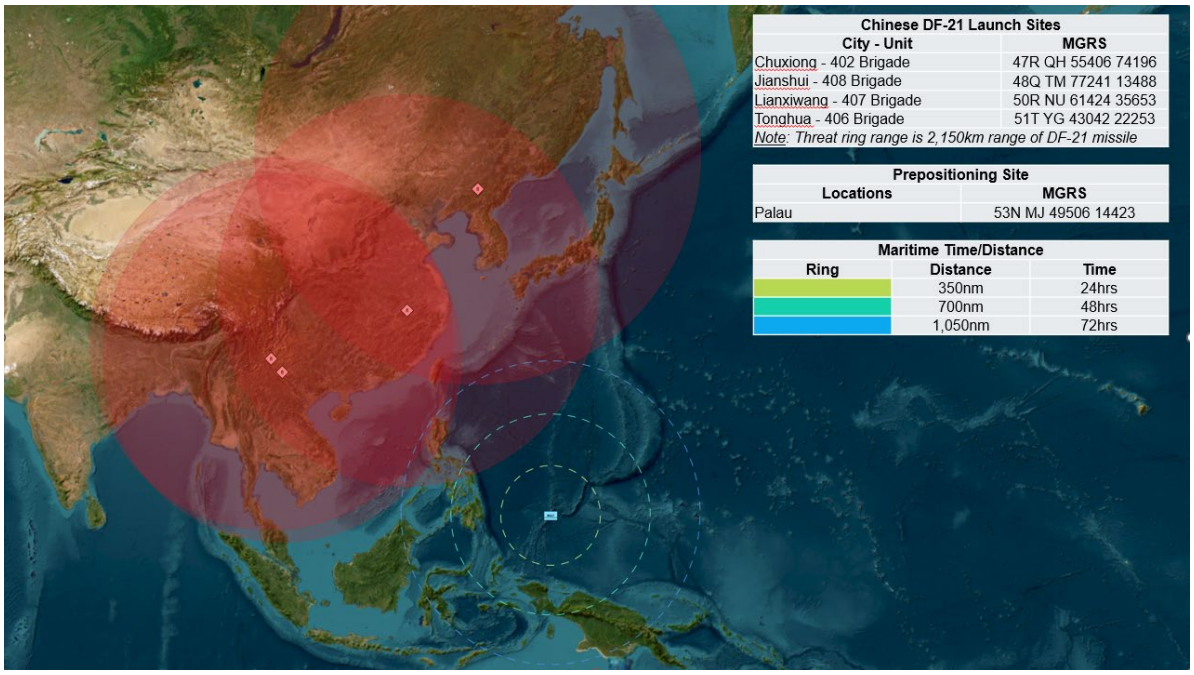

Figure 3. DF-21 Launch Sites with GPN Palau

SC3: Interoperability with Partners and Allies

Does the prepositioning program lend itself to interoperability with partners and allies and pose a credible threat to potential adversaries in the region?

Objective: Determine the impact the prepositioning program has on reassuring U.S. partners and allies of the Marine Corps' ability to maintain a forward-deployed presence and enhancing stability while also deterring adversaries and potential adversaries from acting against U.S. interests. This question helps to identify whether Marine Corps prepositioned assets enable the MAGTF to participate and engage in interoperability missions within the geographic region of the MAGTF's employment. Additionally, this question helps to explore the extent to which the equipment and capabilities enabled through the prepositioning program deter adversaries by the demonstration and employment of assets in training exercises and military operations.

A grade of 0.67 is assigned for SC3 due to the potential for a prepositioning program to further enhance interoperability and deterrence, signifying a moderate but substantial contribution to regional stability. Valiant Shield and Koa Moana exercises demonstrate Palau's capability to support joint force exercises with a significant number of personnel and various military branches. The investment and infrastructure required for

such operations, alongside the strategic placement of Palau, facilitate a robust deterrent effect. The COFA highlights the commitment of the U.S. military to the defense of Palau, allowing for considerable operational freedom. External pressure from the PRC shows the strategic competition in the area and the importance of maintaining a U.S. presence. The capability to plan and execute large-scale exercises with effective contracting support and few policy limitations points to a well-integrated approach with allies and an effective deterrent to adversarial actions.

SC4: Organic Level of Maintenance

What level of maintenance LOM is organic to the prepositioning program that enables the support of military equipment?

Objective: This question assesses the maintenance capabilities afforded to the prepositioning program that enable the upkeep of equipment and assets for operational use by the using units. The effectiveness of the prepositioning program's maintenance efforts ensures that equipment is serviceable and contributes to an overall increase in material readiness. Maintenance activities consist of the preventive and corrective actions necessary to restore equipment to a serviceable condition for use by the operating forces and are an integral part of sustaining military operations.

In assessing the organic LOM to a future GPN site in Palau, a grade of 0.5 reflects that the prepositioning site could only conduct field LOM. This grade is warranted because, while depot level maintenance is not currently available, the development of the required infrastructure could allow for limited field-level maintenance capabilities in the future. Once the GPN site is fully operational, these capabilities are expected to support the maintenance needs of military equipment. The ability to conduct field LOM is vital as it ensures that basic repairs and maintenance can occur on-site, thus maintaining a moderate level of readiness and contributing to the sustainability of operations. This development would mark a significant step in the scaling up of operational capabilities within Palau's prepositioning program, allowing for a more robust and self-sufficient maintenance operation.

6. Strategic Capability Analysis Results

Table 3 lists the results of the Strategic Capability MOE evaluation related to GPN supportability. Overall, the total Strategic Capability MOE grade stands at 0.73 (73%). This composite score suggests a strong strategic alignment with some areas exceeding expectations, particularly in geographical advantage and response capability.

Table 3. Strategic Capability MOE Evaluation

Sub-Category	Min Grade	Max Grade	Weight	Grade	Weighted Grade
SC1	0	1	0.40	0.67	0.27
SC2	0	1	0.25	1	0.25
SC3	0	1	0.25	0.67	0.17
SC4	0	1	0.10	0.50	0.05
Total Strategic Capability MOE Grade					0.73 (73%)

However, there is room for improvement in enhancing equipment set capabilities and expanding maintenance facilities to fully leverage Palau's strategic potential. Enhancing these areas would not only maximize the strategic value of Palau's prepositioning program but also ensure greater operational flexibility and readiness for the MAGTF.

B. SENSITIVITY ANALYSIS

In the context of evaluating GPN sites, a sensitivity analysis can help understand how changes in the weighted importance of specific subcategory questions might impact the overall evaluation of a site's suitability. In the base scenario, each subcategory evaluation criteria are given a percentage weight for Palau's Measure of Effectiveness evaluation, totaling 71%. This provides a baseline understanding of Palau's GPN site potential against the given criteria.

In our first sensitivity analysis, the weights of the first two questions in each theme are increased by five percentage points, and the weights of the last two questions are decreased by the same amount. This shift in weights represents a scenario where the earlier

questions in each theme are deemed more critical to the success of the GPN site than the latter questions. The total score for Palau slightly decreases to 70% in this scenario, indicating a minor impact on Palau's suitability when the initial questions are given more emphasis.

The second sensitivity analysis reverses the changes made in the first sensitivity analysis. Here, the weights of the first two questions in each theme are decreased by five percentage points from the base scenario, and the last two questions' weights are increased accordingly. This approach suggests that the latter questions hold more significance in evaluating the GPN site. Despite these changes, Palau's total score remains at 72%, which suggests a slight increase in suitability when the emphasis is shifted to the latter questions.

From these analyses, we can infer that Palau's viability as a GPN site remains relatively stable despite the redistribution of weights across different evaluative questions. The minor variations in total percentage scores suggest that the site's overall evaluation is not highly sensitive to the changes in question weights, indicating a robust potential for Palau to serve as a GPN site within the established criteria framework.

C. SUBIC BAY PROOF OF PRINCIPLE

The cooperative dynamic at Subic Bay between the Army and the Marine Corps sets a precedence for operational synergy in Palau's potential GPN site. Subic Bay exemplifies a shared commitment to efficiency and interoperability, with USARPAC managing and sustaining Army equipment via LOGCAP, and MARFORPAC operating a Proof of Principle (POP) initiative by subleasing and contracting through LOGCAP. This arrangement reflects a concerted effort to optimize resources, minimize duplication, and adhere to service-specific standards. As plans evolve for MCPP-P, the pursuit of economical and strategically dispersed storage solutions continues. The intent is to self-manage maintenance and accountability yet remain open to leveraging Army LOGCAP for advanced maintenance needs. Joint operations in Subic Bay could serve as a model for integrating DLA resources in Palau for a unified logistics approach, thereby improving operational readiness and cost-effectiveness through shared services at a proposed Joint Logistics Staging Area like Camp Katuu. This symbiotic relationship underscores a

commitment to a cohesive defense strategy in the Pacific, enhancing the capabilities of both services in the region. (Marine Corps Logistics Command, personal communication, March 11, 2024)

D. ANALYSIS SUMMARY

This chapter utilizes Untalan et al.'s (2023) groundwork on a GPN site in the Philippines, using their proven questions and objectives to examine Palau for similar suitability. This study integrates policy analysis, contracting methods, and strategic capability, recognizing agreements like COFA that support the U.S. military's presence. It emphasizes Palau's strategic geographic importance for interoperability and deterrence, along with infrastructural and logistical aspects necessary for military operations. Reflecting on Subic Bay's joint military efforts, our research suggests Palau could likewise evolve into a vital GPN hub through investment and collaboration.

V. CONCLUSIONS AND RECOMMENDATIONS

A. OVERVIEW

Building upon the foundation laid by Untalan, Keener, and Sandridge's exploration of a GPN site in the Philippines, this thesis extends their thorough analysis to evaluate Palau's potential as a GPN location. Adapting their proven evaluation criteria and modifying the question weights, we examined the strategic, operational, and logistical nuances pertinent to Palau. The analysis takes into account Palau's distinctive geopolitical dynamics, including the pivotal agreements under COFA, while considering infrastructural limitations and funding implications that could shape the future of military operations in the region. This forward-looking study aims to aid the Marine Corps in evolving its prepositioning strategy to meet emerging operational challenges effectively.

To assess Palau's viability as a GPN, we concentrated on the following research questions:

1. What operational and strategic resources would be required for the Marine Corps to establish a GPN site in Palau, encompassing necessary equipment, infrastructure, and personnel?

To establish a GPN site in Palau, the Marine Corps would need a detailed analysis of required operational and strategic resources. This includes an assessment of necessary equipment, infrastructure, and personnel, as outlined in the foundational work of Untalan et al. It is essential to understand the specific conditions of Palau, from geopolitical agreements like COFA to logistical and infrastructural capabilities, which could impact the establishment and maintenance of a GPN site. The adaptation and scaling of equipment, the development of supportive infrastructure, and the assignment of skilled personnel are crucial steps for a successful implementation, as indicated by the subcategory questions validated by MARCORLOGCOM. This comprehensive approach, guided by strategic foresight and operational needs, will ensure the site's efficacy in supporting the MAGTF and broader Marine Corps objectives in the region.

2. Does the strategic advantage offered by a joint force presence in Palau, through a GPN site, outweigh the anticipated financial, political, and operational costs?

To look at the strategic benefit of establishing a Marine Corps or Joint GPN site in Palau, we assessed the advantages of the joint force presence compared to financial, political, and operational expenditures. Building on Chapter III's framework and considering Palau's geographical positioning and existing U.S. commitments, the analysis indicates that a GPN site would enhance the U.S. strategic posture in the Indo-Pacific. The potential for increased military readiness and regional influence appears to justify the costs associated with developing and sustaining such a site, emphasizing Palau's role as a strategic partner.

3. How can Untalan et al.'s (2023) framework principles for optimal GPN sites be applied to Palau's unique geopolitical and operational environment?

We modified their analytical model to Palau's strategic positioning and geopolitical relationships by integrating Untalan et al.'s (2023) GPN framework with Palau's distinct geopolitical context. Our thesis adapts the framework's subcategory questions, particularly modifying Policy questions three and four, and recalibrates the grading scale to a one-point system. The application to Palau integrates the impacts of COFA and reflects on the nation's infrastructural constraints contrasted with its strategic value in the Pacific, emphasizing the potential for the U.S. to strengthen its military posture and interoperability in the region through furthering U.S.-Palau relations with the establishment of a GPN site.

B. FINDINGS AND RECOMMENDATIONS

- **Finding 1: A GPN site in Palau is viable**

Leveraging the adapted framework established in Chapter III, we scrutinized MARCORLOGCOM's site surveys and relevant operational data to assess the applicability of preexisting GPN frameworks to Palau. Our analysis identified several adaptable elements from existing programs; however, it became clear that specific adjustments are

required to tailor these elements to Palau's unique operational landscape. Accordingly, we propose targeted modifications, ensuring that the adapted elements are aligned with the strategic imperatives and operational parameters of Palau, thus confirming the viability of a GPN site in the region. Figure 4 compares the measure of effectiveness of the proposed Palau GPN site with existing prepositioning sites, including the forward-deployed rotational gear set MRF-D in Darwin, Australia.

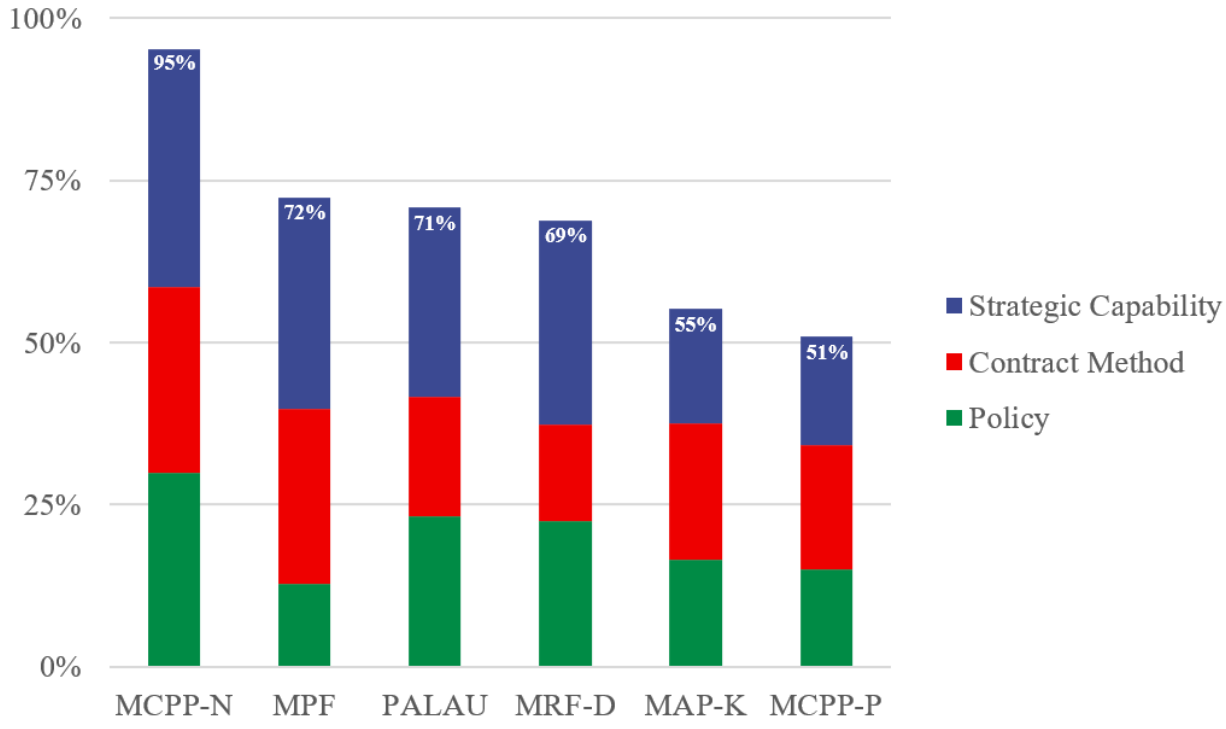

Figure 4. GPN Measure of Effectiveness Comparison

Policy: Compared to other prepositioning efforts in the Marine Corps, Palau scores better than three of the already established prepositioning sites. As described in Chapter III, Policy accounts for only 30% of the total evaluation of GPN supportability, but Palau's Policy score was second only to MCPP-N. Additionally, this evaluation was limited in scope due to timely accessibility to critical information. From a historical context and our subjective assessment, the policy criteria score may be refined further as policy changes are implemented to enhance the success of a GPN in Palau.

Contracting Method: This composite score suggests that while there are standard practices in place regarding host nation resource utilization and quality assurance, there are significant gaps in operational contract support and maintenance levels. Due to the nature of the other GPN programs being already established, all but MRF-D scored higher in contracting assessment relative to Palau. These areas present opportunities for enhancement to better support the strategic and operational objectives of the GPN site in Palau.

Strategic Capability: Strategic Capability was the most crucial theme, accounting for 40% of the overall measure of effectiveness. Palau scored better than two-thirds of the established programs, falling behind only MCPP-N and MPF. However, there is room for improvement in enhancing equipment set capabilities and expanding maintenance facilities to leverage Palau's strategic potential fully. Strengthening these areas would maximize the strategic value of Palau's prepositioning program and ensure greater operational flexibility and readiness for the MAGTF.

- **Recommendation 1: Leverage joint capabilities aboard Camp Katuu**

Camp Katuu in Palau is a facility that has historically served as the base for the Civic Action Team, comprising service members from the Army, Navy, and Air Force. Specifically, it is home to rotations from the Army's 84th Engineering Battalion, the Air Force's 36th Civil Engineer Squadron, and the Navy's Mobile Construction Battalion 133. Established in the 1980s, the camp includes a range of facilities, including a vehicle maintenance shop, administrative buildings, a gym, a small theater, and living quarters for the deployed troops. The Civic Action Team is engaged in numerous community support activities like construction and repair projects for local infrastructure such as schools and hospitals. In recent years, the camp has undergone upgrades and repairs by Seabees from the Naval Mobile Construction Battalion (NMCB) to improve the infrastructure, which had deteriorated due to the hot and humid climate and issues like termite damage (White, 2018).

These ongoing improvements and the presence of CAT Palau showcase the commitment of the U.S. military to support the local Palauan population and maintain a strategic partnership with the Republic of Palau. The existing collaboration, capacity for

large-scale construction projects, and community integration could provide a solid foundation for establishing a GPN site in Palau. The cooperative efforts and infrastructure developments at Camp Katuu could be leveraged to support the logistical and operational needs of a GPN site, enabling it to provide robust support for the Marine Corps' mission in the Pacific region.

- **Finding 2: Assessing strategic partnerships for Indo-Pacific security**

Strategic partnerships, such as the U.S.-Palau alliance under the Compacts of Free Association, are crucial for sustaining the U.S. military's logistical capabilities in the Indo-Pacific. These alliances not only facilitate the establishment of forward-operating bases and prepositioning sites to quickly respond to threats but also safeguard critical maritime routes, bolstering regional stability. The potential lapse of COFA funding poses a strategic risk, as highlighted by Palau's President, indicating that such a gap could allow China to increase its influence in the region, undermining U.S. interests and isolating its allies (Camarena, 2024).

- **Recommendation 2: Strategic initiatives to bolster U.S.-Palau relations**

Prioritize and strengthen collaborative efforts with strategic partners like Palau to secure vital logistical hubs for rapid military response. This should include negotiating robust agreements that enhance infrastructure, intelligence sharing, and joint military training. Given the risks of COFA funding lapses, as noted by Palau's President, the U.S. should consider boosting economic and military aid to ensure these partnerships are not only maintained but also protected from adversarial influence, thereby supporting U.S. operations and strategic interests in the region effectively.

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