EAST-WEST CENTER

ASIA PACIFIC BULLETIN

Number 721 | February 20, 2025

EastWestCenter.org/APB

Maritime Threats Across the Pacific Islands: Vulnerabilities and Opportunities for Cooperative Action and Technological Solutions

By Dr. Transform Aqorau

The maritime territory of the Pacific Islands, characterized by its vast expanses and rich marine biodiversity, faces a complex array of maritime threats that challenge its economic development, environmental sustainability, and regional security. These threats, ranging from illegal, unreported, and unregulated (IUU) fishing to climate change, transnational crime, and marine pollution, exploit the inherent vulnerabilities of Pacific Island nations. However, while the region's geographical isolation and limited resources exacerbate these vulnerabilities, they also present unique opportunities for cooperative action, including regional partnerships and the strategic use of technology to address and mitigate these challenges. This paper explores the vulnerabilities Pacific Island nations face in maritime security and the opportunities for leveraging cooperative mechanisms and technology to safeguard the region's maritime interests.

Dr. Transform Aqorau, Vice Chancellor of the Solomon Islands National University and iTUNA Intel CEO, analyzes the maritime threats facing Pacific Island nations, including illegal fishing, climate change, and transnational crime, while highlighting opportunities for regional cooperation and technological innovation to strengthen maritime security.

Vulnerabilities of Pacific Island Nations

1. Geographic Isolation and Vast Exclusive Economic Zones (EEZs): One of the defining characteristics of Pacific Island nations is the vastness of their maritime domains relative to their landmass. Countries such as Kiribati, the Solomon Islands, and the Marshall Islands possess large Exclusive Economic Zones (EEZs) that extend millions of square kilometers. However, overseeing expansive maritime territory presents considerable governance and enforcement challenges. The naval and aerial surveillance limitations of Pacific Island Nations leave these areas vulnerable to illicit activities such as IUU fishing. IUU fishing undermines sustainable fisheries management and results in substantial economic losses for Pacific Island nations, whose economies are highly dependent on marine resources. For instance, the Pacific Islands Forum Fisheries Agency (FFA) estimates that IUU fishing costs Pacific nations approximately $616 million annually.

2. Climate Change and Environmental Degradation: Pacific Island nations are at the forefront of climate change, facing the threats of rising sea levels, ocean acidification, and increasingly frequent extreme weather events. Coral reefs, crucial in supporting fisheries and coastal protection, are particularly vulnerable to ocean warming and acidification. These changes impact marine biodiversity and disrupt the livelihoods of communities reliant on these ecosystems. Furthermore, climate change-induced sea-level rise threatens the very existence of low-lying atoll nations such as Tuvalu and Kiribati. As sea levels rise, coastal erosion increases, and saltwater intrusion into freshwater supplies threatens food security and public health. As rising seas may necessitate population relocations, these nations are also vulnerable to displacement and the erosion of state sovereignty.

3. Transnational Maritime Crime: The vast and porous maritime borders of Pacific Island nations make the region susceptible to transnational maritime crime, such as human trafficking, drug smuggling, and arms trafficking. Organized criminal networks exploit limited maritime law enforcement capabilities to conduct illicit activities, threatening regional security and undermining governance and the rule of law.

Opportunities for Cooperative Action

Despite the significant vulnerabilities Pacific Island nations face, there are promising opportunities for cooperative action at the regional and international levels to strengthen maritime security and resilience. By leveraging regional frameworks and engaging in multilateral partnerships, Pacific Island nations can enhance their collective capacity to address maritime threats.

1. Strengthening Regional Organizations and Cooperation Mechanisms: Regional organizations such as the Pacific Islands Forum (PIF) and the FFA play pivotal roles in facilitating cooperation among Pacific Island nations. The FFA, for instance, coordinates regional efforts to combat IUU fishing through initiatives such as the Regional Monitoring, Control, and Surveillance (MCS) Network. By pooling resources and expertise, Pacific Island nations can strengthen their surveillance and enforcement capabilities, making it more difficult for illicit actors to operate with impunity. The Niue Treaty Subsidiary Agreement (NTSA), which allows for the cooperative enforcement of fisheries laws across EEZs in the region, is a prime example of regional cooperation in action.

2. Engaging International Partners: The involvement of international partners such as Australia, New Zealand, the United States, Japan, and the European Union has been instrumental in providing both financial and technical support for capacity-building initiatives to Pacific Island nations. For example, the Australian government's Pacific Maritime Security Program (PMSP) has provided Pacific Island nations with Guardian-class patrol boats, which are critical assets for conducting surveillance and enforcing maritime laws. In addition to material support, these partnerships often include training and capacity-building components that equip local maritime authorities with the skills and knowledge needed to address maritime threats.

The Role of Technology in Enhancing Maritime Security

While cooperative action is essential, the strategic deployment of technology can significantly enhance the ability of Pacific Island nations to monitor, protect, and manage their vast maritime territories. Advances in surveillance, data analytics, and environmental monitoring technologies offer practical solutions to the unique challenges faced by the region.

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1. Satellite Surveillance and Remote Sensing: Using satellite-enabled remote sensing technology, Pacific Island nations can monitor large areas of their EEZs in real-time, detecting suspicious activities such as illegal fishing, transshipment, and vessel movement. One notable example of this technological approach is the Pacific Islands Forum Fisheries Agency's use of the Pacific Monitoring, Control, and Surveillance (PMCS) program, which integrates satellite imagery, vessel tracking systems, and data analytics to monitor fishing activities across the region. The implementation of automatic identification systems (AIS) and vessel monitoring systems (VMS) further enables authorities to track vessels and detect anomalies that may indicate illegal activity.

This type of technological innovation enhances the effectiveness of traditional patrol efforts, allowing limited resources to be deployed more strategically. It also fosters greater transparency in fishing operations, as vessels can be tracked and monitored in real-time, ensuring compliance with fisheries regulations.

2. Unmanned Aerial Vehicles (UAVs) and Drones: The use of unmanned aerial vehicles (UAVs) and drones presents a cost-effective solution for conducting surveillance, monitoring protected marine areas, and detecting illegal activities, as extensive personnel or infrastructure is not needed. In combination with satellite surveillance, UAVs provide a flexible and mobile means of conducting real-time reconnaissance and data collection. This is particularly valuable for Pacific Island nations with limited naval and aerial assets, as drones can be used to enhance the range and frequency of patrols.

3. Environmental Monitoring and Data Collection: Technological advancements in environmental monitoring are crucial for addressing the long-term impacts of climate change and environmental degradation in the Pacific. Sensors, buoys, and other monitoring technologies can be deployed to collect real-time data on ocean conditions, sea levels, and marine biodiversity. This data is vital for informing climate adaptation strategies, fisheries management, and disaster preparedness.

Conclusion

The Pacific Islands region faces a multitude of maritime threats, including IUU fishing, climate change, transnational crime, and environmental degradation. By strengthening regional cooperation through organizations like the FFA and engaging international partners for financial and technical support, Pacific Island nations can collectively address these threats more effectively. Furthermore, the deployment of advanced surveillance technologies such as satellite monitoring, UAVs, and environmental sensors offers practical and cost-effective solutions for enhancing maritime security and protecting the region's valuable marine resources.

The future of the Pacific Islands' maritime security lies in the ability to integrate cooperative frameworks with technological innovation, ensuring that the region remains resilient in the face of evolving threats. Through collective action and the strategic use of technology, Pacific Island nations can safeguard their maritime interests and promote sustainable development for generations to come.

Dr. Transform Aqorau, Vice Chancellor of the Solomon Islands National University and iTUNA Intel CEO, can be contacted at aqoraut@sinu.edu.sb.

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