



WWF

SUMMARY

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REVIVING MELANESIA'S OCEAN ECONOMY

The case for action

in association with



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA



Global Change Institute

BCG

THE BOSTON CONSULTING GROUP

The **Global Change Institute** (www.gci.uq.edu.au) at The University of Queensland, Australia, is an independent source of innovative research, ideas and advice for addressing the challenges of a changing world. The Global Change Institute works to address the impacts of climate change, technological innovation and population growth through collaborative research across four key themes: clean energy, food systems, sustainable water, and healthy oceans. Professor Hoegh-Guldberg and Dr Tyrone Ridgway also undertake research on coral reef ecosystems and their response to rapid environmental change, and did not receive salary for writing this report.

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WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

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Front cover

A child from Tavewa Island, Fiji, holds a recently caught fish. Depleted coastal fisheries could seriously constrain opportunities for Melanesia's children.

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This report is available at: ocean.panda.org

THE OCEAN IS MELANESIA'S LIFEBLOOD

The people of Melanesia share a strong social, cultural and economic dependency on the sea. This report, *Reviving Melanesia's Ocean Economy*, highlights that the ocean and coastal assets of the Melanesian region have an estimated annual economic value of at least US\$5.4 billion and a total ocean asset base estimated conservatively at US\$548 billion.

The Pacific island countries and territories – often referred to as a 'sea of islands' – are divided into three sub-regions: Melanesia, Micronesia, and Polynesia. Melanesia comprises Papua New Guinea, Solomon Islands, Vanuatu, New Caledonia and Fiji.

Pacific island cultures have all traditionally emphasized wise resource use, environmental stewardship and the fact that the ocean connects rather than separates them.

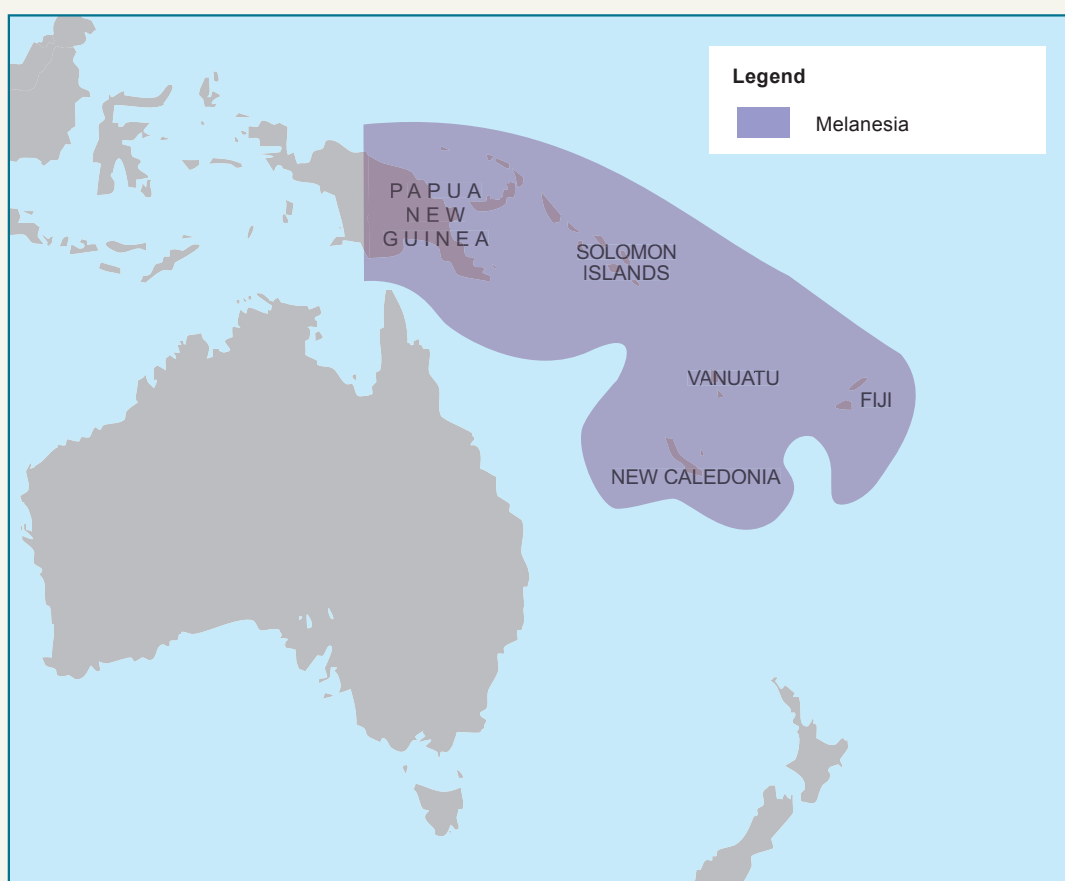


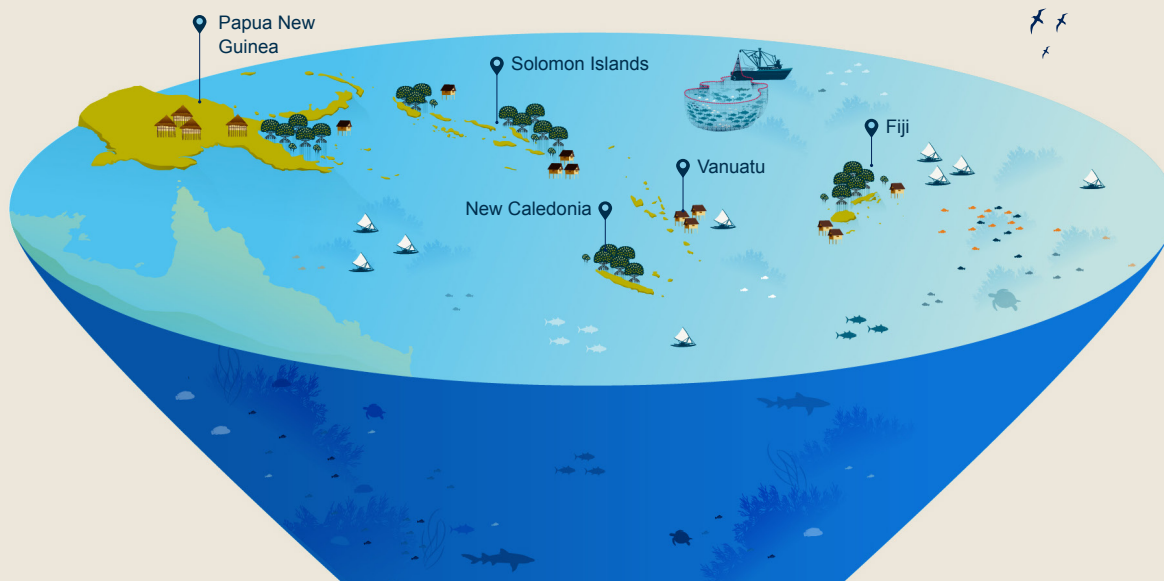
FIGURE 1 WHAT IS THE ECONOMIC VALUE OF MELANESIA'S OCEAN?

OCEAN ASSET VALUE IN MELANESIA - SHARED WEALTH FUND

Marine assets in the Melanesian region generate much more value than we are aware of and could provide even more if they are well managed.

US\$548 bn.

TOTAL SHARED WEALTH
FUND ASSET BASE



MELANESIA'S GROSS MARINE PRODUCT

(data from 2015)

Gross Marine Product (GMP) is the ocean's annual economic value.

27%

**ADJACENT BENEFITS
OF THE OCEAN**

20% Coastal tourism
5% Carbon sequestration
2% Coastal protection

56%

**DIRECT OUTPUT
OF THE OCEAN**

53% Marine fisheries: Commercial
2% Marine fisheries: Non-industrial
1% Aquaculture / mariculture

17%

**DIRECT SERVICES
ENABLED BY THE OCEAN**

9% Cruise industry
8% Marine tourism



CORAL REEFS, MANGROVES, FOOD SECURITY, LIVELIHOODS, STORM PROTECTION, TOURISM ASSETS — THEY'RE ALL CONNECTED

PRIMARY ASSETS

	Marine Fisheries	US\$ 124.1 bn
	Mangroves	US\$ 109.6 bn
	Coral Reefs	US\$ 145.7 bn
	Seagrass	US\$ 151.4 bn

ADJACENT ASSETS

	Productive Coastline	US\$ 14.7 bn
	Carbon Absorption	US\$ 2.9 bn

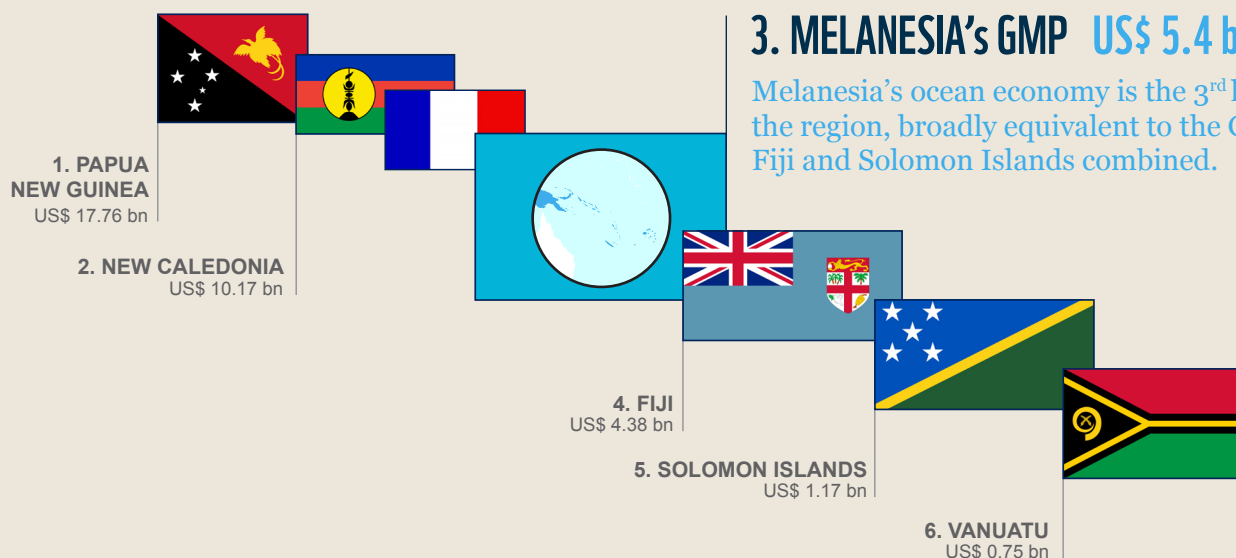


HOW DOES MELANESIA'S GROSS MARINE PRODUCT COMPARE TO REGIONAL GDPs?

(data from 2015)

3. MELANESIA'S GMP US\$ 5.4 bn

Melanesia's ocean economy is the 3rd largest in the region, broadly equivalent to the GDPs of Fiji and Solomon Islands combined.



Analysis for this section is provided by:

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on the BCG methodology, please visit:
ocean.panda.org

SOURCES:

IMF World Economic Outlook 2015;
UN country data: New Caledonia UNSD 2016.



Simione Koto with a string of reef fish freshly caught on Ono, Kadavu, Fiji. Island communities are heavily reliant on their marine resources for sustenance and livelihoods.

IT IS BECOMING INCREASINGLY EVIDENT THAT MELANESIA'S OCEAN AND ITS PRECIOUS ASSETS ARE UNDER THREAT FROM LOCAL, REGIONAL AND GLOBAL PRESSURES.

These changes have implications for the environment, food security, employment and the well-being of human communities both within the region and beyond. The physical and chemical conditions in the ocean are changing faster than at any other point in history, and there is a real chance that the declining ocean assets of the Melanesian region will constrain options for future generations. From an economic standpoint, the ocean can be seen as a “shared wealth fund”, with the principal capital of the Melanesian region being eroded at a rate that undermines the ocean’s value for current and future generations. It is time to reset the agenda before this ocean capital base collapses.

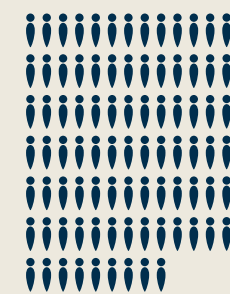
FIGURE 2 STATE OF MARINE ASSETS IN MELANESIA

Across Melanesia, overfishing, climate change, resource development projects and other pressures threaten food security, coastal protection and long-term economic opportunity.

COASTAL FISHERIES

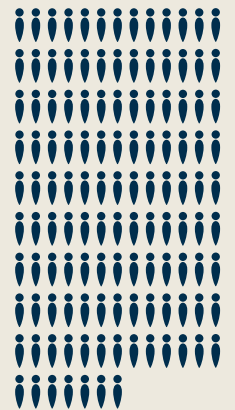
POPULATION GROWTH ¹

2010

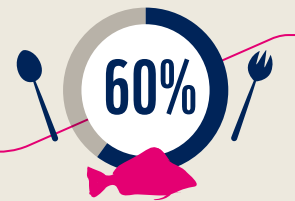


8.7 million

2030



12.4 million



MORE FISH NEEDED TO FEED COMMUNITIES BY 2030. ²

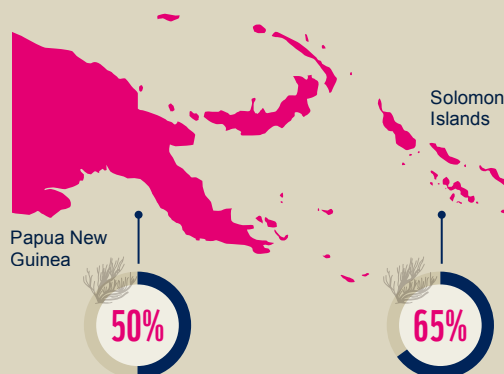
70% of all coastal fisheries production in the Pacific islands is for subsistence use. ³



CORAL REEFS ARE THREATENED

57% ↑

OF SOUTH PACIFIC CORAL REEFS THREATENED BY HUMAN ACTIVITIES AT MEDIUM TO VERY HIGH LEVELS. ⁴



Papua New Guinea

Solomon Islands

By 2030, **100%** of coral reefs in PNG will be at risk from local human impacts and climate change, up from **55%** in 2012.

Overfishing and destructive fishing affect more than **65%** of reefs in the Solomon Islands and **50%** of reefs in PNG. ⁴

SOURCES: 1. UNDESA 2015 2. Bell et al. 2009 3. Gillett 2011 4. Burke et al. 2012, Chin et al. 2011, Hoegh-Guldberg et al. 2014 5. Government of Vanuatu 2015 6. Clarke, 2011 7. IPCC 2013 8. Harley et al. 2014 9. Carleton et al. 2013

EXTREME WEATHER

CASE STUDY: VANUATU ⁵

US\$450 mill

APPROXIMATE COST OF IMPACTS
OF CYCLONE PAM, 2015.

>95%

OF AGRICULTURAL SECTOR
DESTROYED, DEVASTATING FOOD
SECURITY AND LIVELIHOODS.

Equivalent to
64.1%
of the GDP

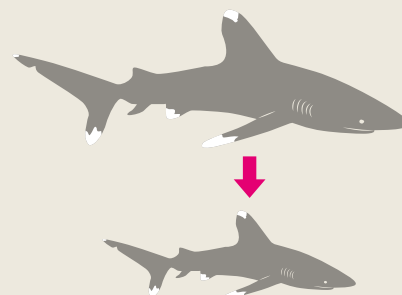
SEA LEVEL RISE

3-4x

COASTAL AREAS IN MELANESIA HAVE RATES OF
SEA LEVEL RISE 3-4 TIMES THE GLOBAL AVERAGE
OF 3.2MM/YEAR. ⁷

SHARKS IN DECLINE

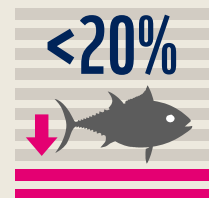
STEEP DECLINES IN
OCEANIC WHITETIP
OBSERVATIONS
AND IN THEIR
LENGTHS INDICATE
A MAJOR FALL IN
THE POPULATION. ⁶



(Size comparison for illustrative purposes)

TUNA UNDER THREAT

BIGEYE TUNA - WHICH HAS BEEN A
MAJOR SOURCE OF FOOD AND REVENUE
- HAS BEEN REDUCED TO LESS THAN
20% OF ITS UNFISHED STOCK SIZE,
REPRESENTING AN **UNACCEPTABLE RISK**. ⁸

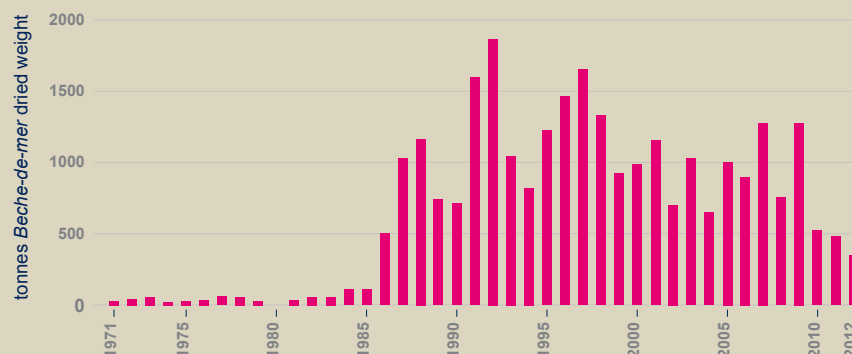


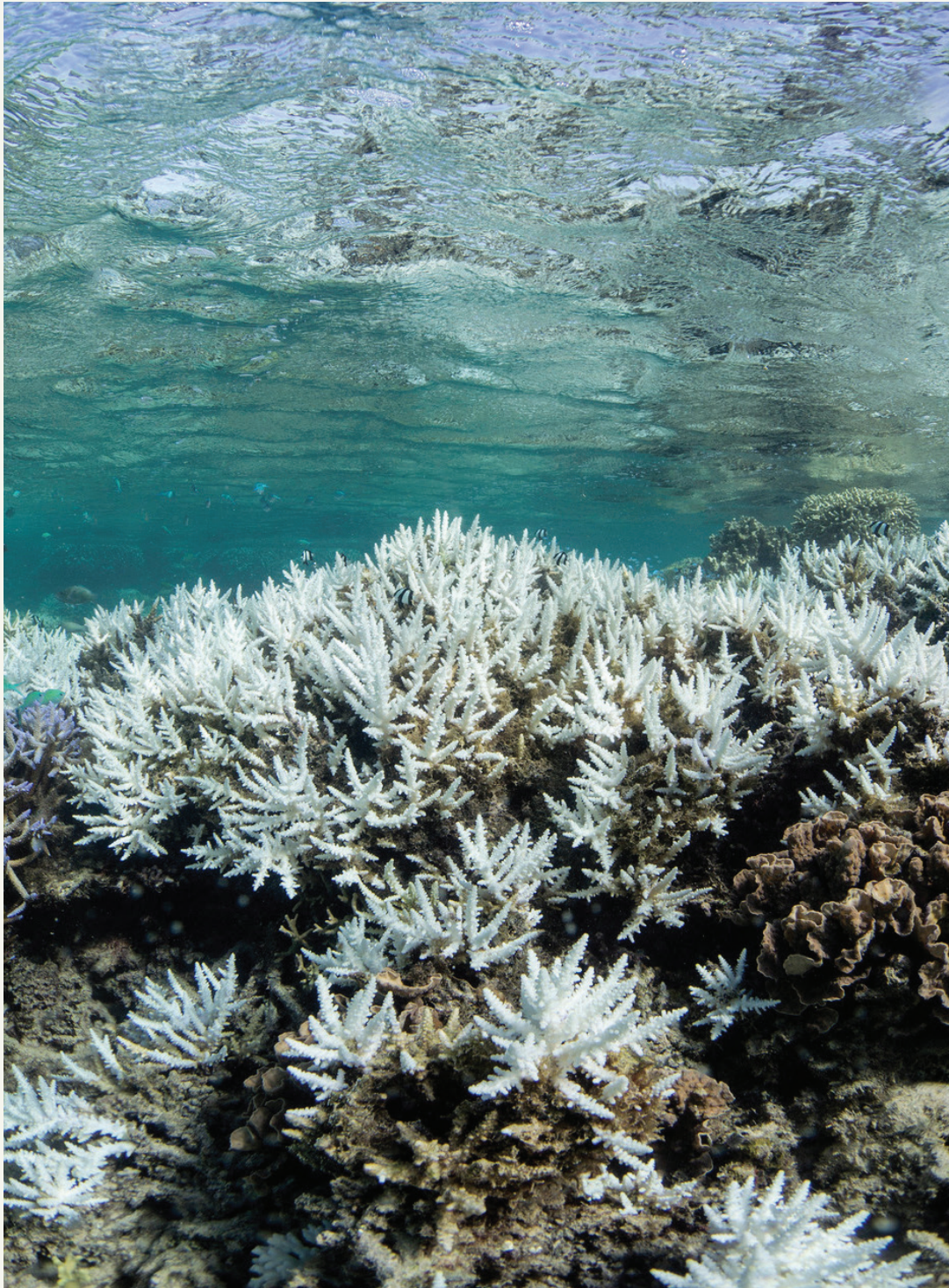
SEA CUCUMBER UNDER PRESSURE

YEARS OF OVEREXPLOITATION OF SEA
CUCUMBERS AND A BOOM-BUST APPROACH
TO MANAGEMENT HAVE WEAKENED
POPULATIONS' ABILITY TO FULLY RECOVER. ⁹

CASE STUDY: SEA CUCUMBER EXPORTS

Exports of beche-de-mer from Fiji,
Papua New Guinea, Solomon Islands,
Tonga and Vanuatu from 1971 - 2012





© XL Catlin Seaview Survey

'The mass global coral bleaching of 2015-2016 impacted Melanesia, including Fiji, as shown here. Unfortunately, some areas will likely not fully recover.

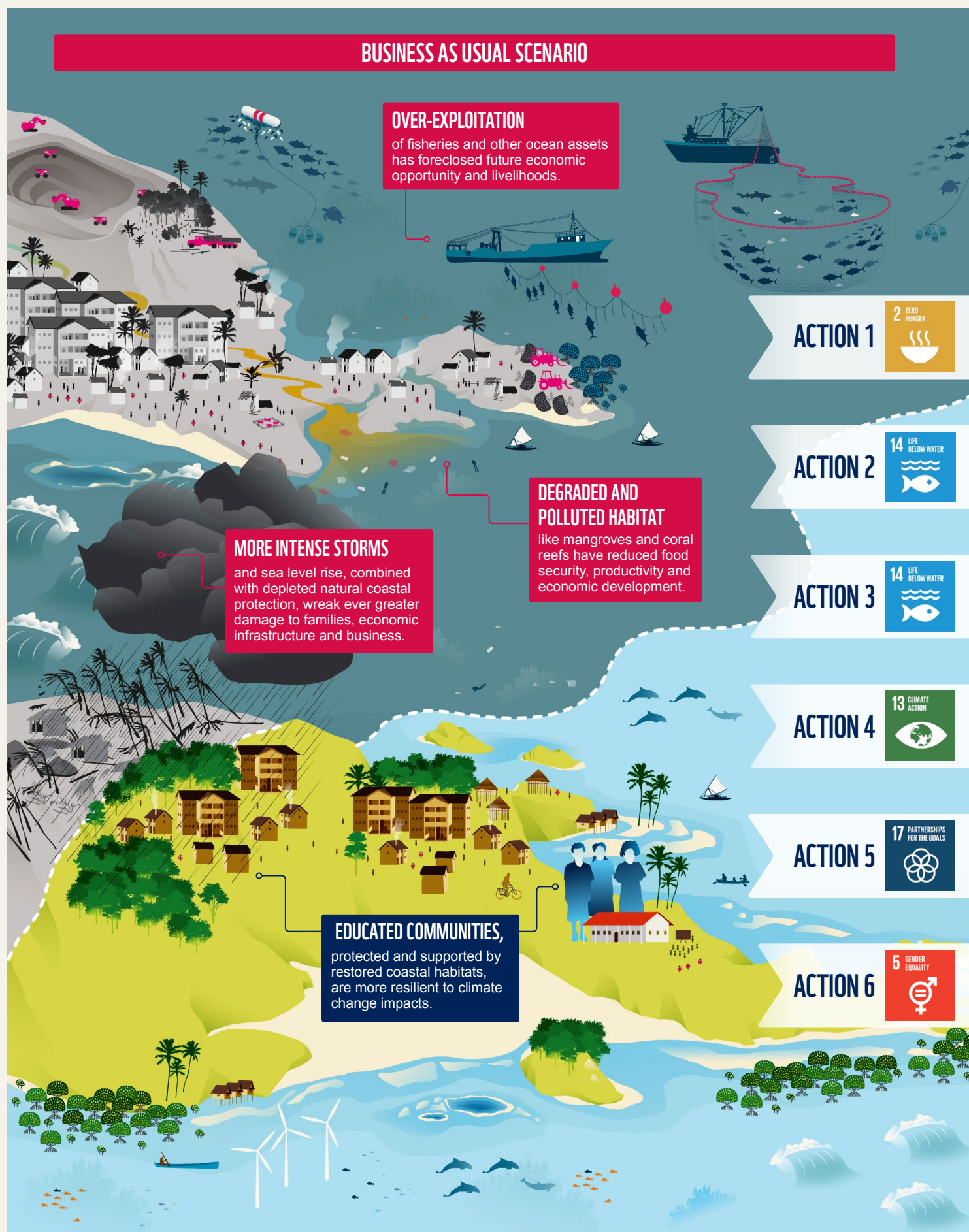
In this context, the region's leaders are faced with two pathways. The first is the current trajectory of increasing pressure on ocean assets coupled with inadequate policy commitments and/or action. This pathway will lead to a degraded future in which opportunities for the inhabitants of the Melanesian region will be significantly diminished. The second trajectory is to chart a course based on knowledge and understanding, to create a sustainable and inclusive blue economy. Such an approach will ensure that economic development drawing on ocean and coastal assets contributes to a true prosperity and resilience of the Melanesian region long into the future.

VISIONARY LEADERSHIP AND BOLD AND DECISIVE ACTION IS NEEDED NOW BY LEADERS AND CITIZENS AS THE REGION PREPARES TO WITHSTAND GREATER PRESSURES THAN EVER BEFORE.

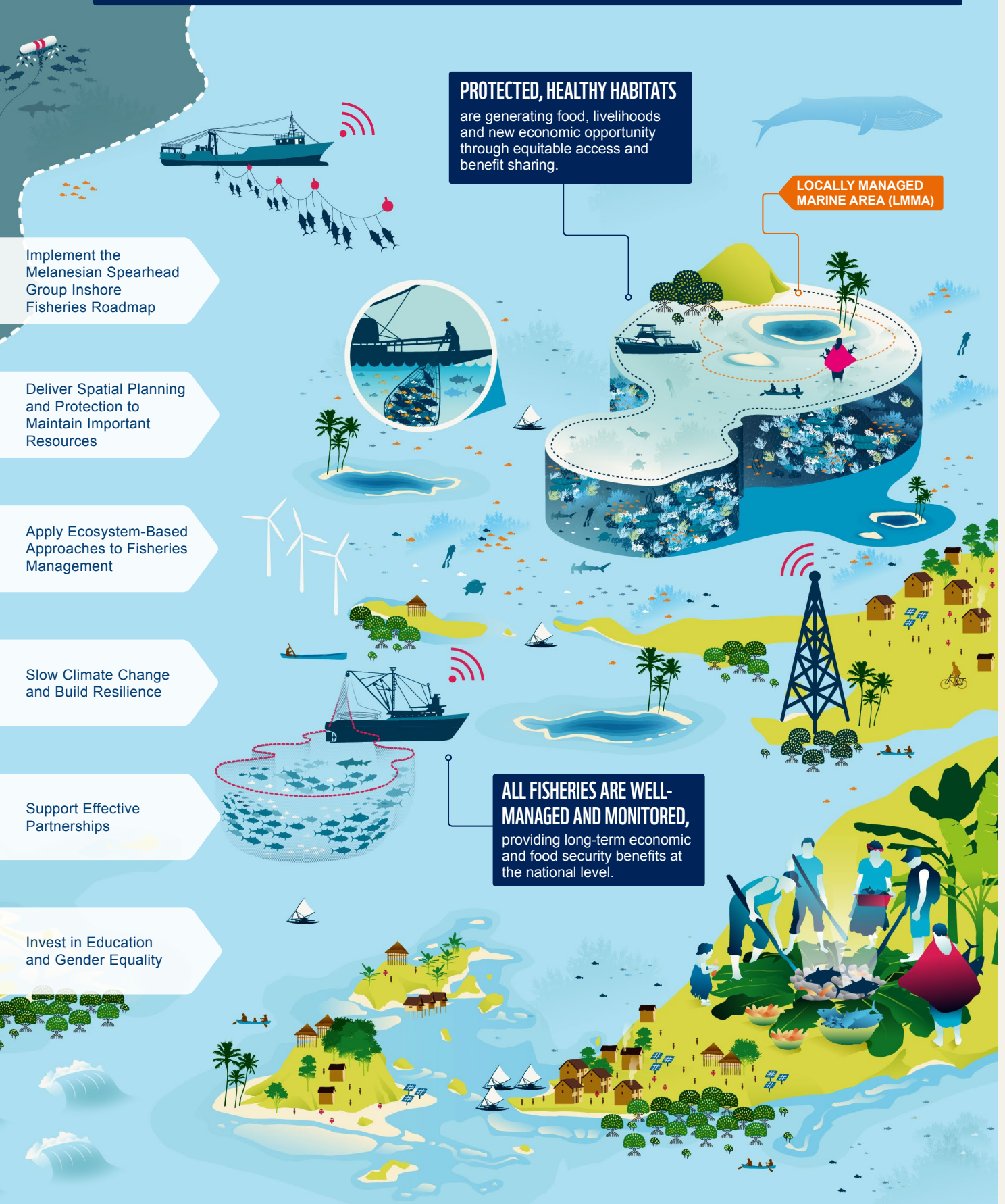
This report is a rallying call for decision makers across the region who know that action on a scale much greater than so far realized is necessary – starting today. Community support, leadership across and between sectors, new financial resources and whole-of-government implementation at national levels are needed to rebuild the ecosystems and habitats that support fisheries for essential food and income. These habitats in turn underpin valuable sustainable tourism industries and provide essential coastal protection that secures life and livelihoods for families across the region.

The global spotlight is trained on Melanesia in 2017 given the region's major role in implementing the UN Sustainable Development Goals (SDGs) – including the ocean goal – providing Melanesian leaders with the chance to show the world how to achieve a sustainable and inclusive blue economy without delay and ensure that their people continue to reap the full suite of benefits from their cherished ocean assets.

FIGURE 3 TWO FUTURE SCENARIOS FOR MELANESIA



SUSTAINABLE BLUE ECONOMY SCENARIO



Implement the
Melanesian Spearhead
Group Inshore
Fisheries Roadmap

Deliver Spatial Planning
and Protection to
Maintain Important
Resources

Apply Ecosystem-Based
Approaches to Fisheries
Management

Slow Climate Change
and Build Resilience

Support Effective
Partnerships

Invest in Education
and Gender Equality



© Jürgen Freund / WWF

Two boys head to Katawaqa Island, Fiji, where turtles nest. Visionary leadership and bold and decisive action are needed to bring about a new era of sustainability and hope for our children.

CHOOSING A HEALTHY OCEAN AND A SUSTAINABLE AND INCLUSIVE BLUE ECONOMY WILL REQUIRE INVESTMENT AND EFFORT, BUT THIS WILL BE REPAID MANY TIMES OVER THROUGH INCREASED PRODUCTIVITY, STABILITY AND SECURITY.

ACTION 1

IMPLEMENT THE MELANESIAN SPEARHEAD GROUP INSHORE FISHERIES ROADMAP

The Melanesian Spearhead Group Roadmap for Inshore Fisheries Management and Sustainable Development 2015–2024 was initiated at the request of the countries' prime ministers. It derives from the concern for community livelihoods and in response to the recognition that the management of inshore (i.e. small-scale) fisheries – upon which the majority of Melanesia's coastal populations depend – is currently unsustainable.

Immediate priorities for inshore and offshore fisheries management should include focused efforts on effective policies, legislation, management frameworks and financing mechanisms, coupled with capacity-building initiatives, improved data collection and resource mobilization. Budget lines and staffing of government fisheries agencies need to be specifically directed toward improving inshore and coastal fisheries management, as opposed to the current focus on offshore fisheries development and expansion. Such action will be central to delivering on SDG2 on food security.

ACTION 2

DEVELOP AND IMPLEMENT SPATIAL PLANNING AND PROTECTION TO MAINTAIN IMPORTANT RESOURCES

Networks of spatial management tools including marine protected areas (MPAs), locally managed marine areas (LMMAs) and marine managed areas (MMAs) can make major contributions to communities and national interests by enhancing food security and livelihoods, and through supporting economically-important industries like fishing and tourism. They are a foundational element of the sustainable development approach, including SDG14 and can also be cost-effective solutions for

assisting with climate change adaptation, mitigation and disaster risk reduction. To deliver on their great potential, these networks need to be developed with leadership from local communities, strategically-positioned and well-managed. Melanesia has demonstrated leadership in the development of the LMMA approach, for example, but like much of the world, there is a wide gulf between implementation and the science-based targets set in many agreements to which the countries are signatories.

Spatial conservation should be developed as part of a multi-sectoral approach that seeks to establish active, far-sighted marine spatial plans which will allow for the assessment of gaps, and ensure that protected areas are prominently represented. Successes in zone-based management at the sub-regional level – such as the Parties to the Nauru Agreement Vessel Day Scheme initiative and the widespread adoption of community coastal resource management in LMMAs – help guide spatial planning to integrate conservation and sustainable use of marine resources.

ACTION 3 **APPLY ECOSYSTEM-BASED APPROACHES TO RESOURCE MANAGEMENT**

Pushing a fishery beyond the sustainable rate of harvest may yield short-term benefits, but will eventually run the fishery down to a point where productivity decreases, and the fishery eventually collapses. Ecosystem-based approaches to resource management provide an integrated approach that considers all ecosystem components and human activities. Where possible, management measures should be combined with spatial conservation measures, such as LMMAs, MMAs and MPAs, integrated watershed management and investment in sustainable land use measures. The use of spatial planning through inclusive multi-sector consultation processes is a key tool in the ecosystem-based management approach that supports the implementation of the Melanesian Spearhead Group's Green Growth Framework for sustainable development.

Adequate spatial planning within an ecosystem-based approach is a basis for delivering toward SDG14 on 'life below water'.

ACTION 4 **SLOW CLIMATE CHANGE AND BUILD RESILIENCE**

Climate change poses a significant risk to the Melanesian region, including immediate climate threats to Pacific fisheries, coastal communities and coral reefs. Direct action on climate change mitigation and adaptation is required to ensure that Melanesian countries reduce their vulnerability. An overall climate strategy for Melanesia should include the development of regional plans for climate-smart fisheries; dynamic, locally-appropriate spatial planning and management including LMMAs, MMAs and MPAs; low footprint aquaculture; efficient fishing vessels; and research on climate-tolerant species. A whole-economy perspective that values carbon neutrality will help to foster growth through accessing climate finance and through investment in new renewable technologies. Such actions will be essential to safeguard the economic and social well-being of future generations of the Melanesian region – and to ensure that Melanesia and the international community achieve the commitments of the Paris Climate Agreement and address SDG13 on climate change.

ACTION 5

SUPPORT EFFECTIVE PARTNERSHIPS

People, ecosystems and industry must be considered as integrated elements when making decisions about ocean systems. Similarly, ocean protection and restoration is the collective responsibility of government alongside local communities and responsible business. Solutions must involve holistic thinking that considers natural, social and economic needs and limits, and recognizes the institutional and governance context of Melanesia. Partnerships should be encouraged and supported to identify, develop and implement innovative, appropriate technologies and solutions for engaging market forces. These in turn must protect people, fisheries and ecosystems while enabling businesses to develop sustainable solutions in economically important industries such as fishing, tourism and transport. Effective policy must be well resourced, implemented and capable of regulating diverse sectors such as mining, tourism and agriculture. Establishing a platform for ocean knowledge and solutions would help disseminate and transfer skills and capacity across all nations and across sectors, facilitating the development of innovative solutions. Together these actions would deliver toward SDG17 on partnerships.

ACTION 6

INVEST IN EDUCATION AND GENDER EQUALITY

Gender equality and women's empowerment have been shown to contribute to economic growth, sustainable development and the stability of nations. As such, one of the most important opportunities for building capacity lies in investing in women, youth and children. There is thus an urgent need for Melanesian leaders to invest resources into continuing to support gender equality and ensuring access to education for women, youth and children, and to include them in decision-making on natural resource management. This is key to realizing the aims of SDG5 on gender equality.

The precious ocean and coastal assets that have sustained Melanesian communities for millennia now need to be managed with renewed urgency to reflect the era of unprecedented change challenging the region, and the planet. Time is not on our side.

The deep dependence of Melanesians on the ocean is increasingly precarious as the underlying coastal and ocean assets are depleted by local, regional and global pressures. Not to act with resolve is to condemn to an uncertain future, these essential resources and the people who depend on them.



**STRONG DECISIONS NOW – FOLLOWED BY
SUSTAINED ACTION COUPLED WITH PRUDENT
INVESTMENTS TO SECURE MELANESIA’S OCEAN
AND COASTAL NATURAL ASSETS – WILL ENSURE
A HEALTHIER, MORE CERTAIN FUTURE FOR
MELANESIA’S COMMUNITIES AND ECONOMIES,
FOR DECADES TO COME.**



Melanesia's ocean in numbers

100%
RECYCLED



60%

By 2030, 60% more fish will be required for domestic food consumption than in 2010.

US\$548 BN

The overall value of ocean assets in Melanesia is more than US\$548 billion.



3-4X

Coastal areas in the Melanesian region are experiencing rates of sea level rise three to four times the global average.

3RD

The economic output of the ocean in Melanesia makes it the third largest economy in this region.



Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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SUSTAIN OUR SEAS 