



Challenges Promoting **Strategic Environmental Assessment** in Small Island States: Case of **Federated States of Micronesia**

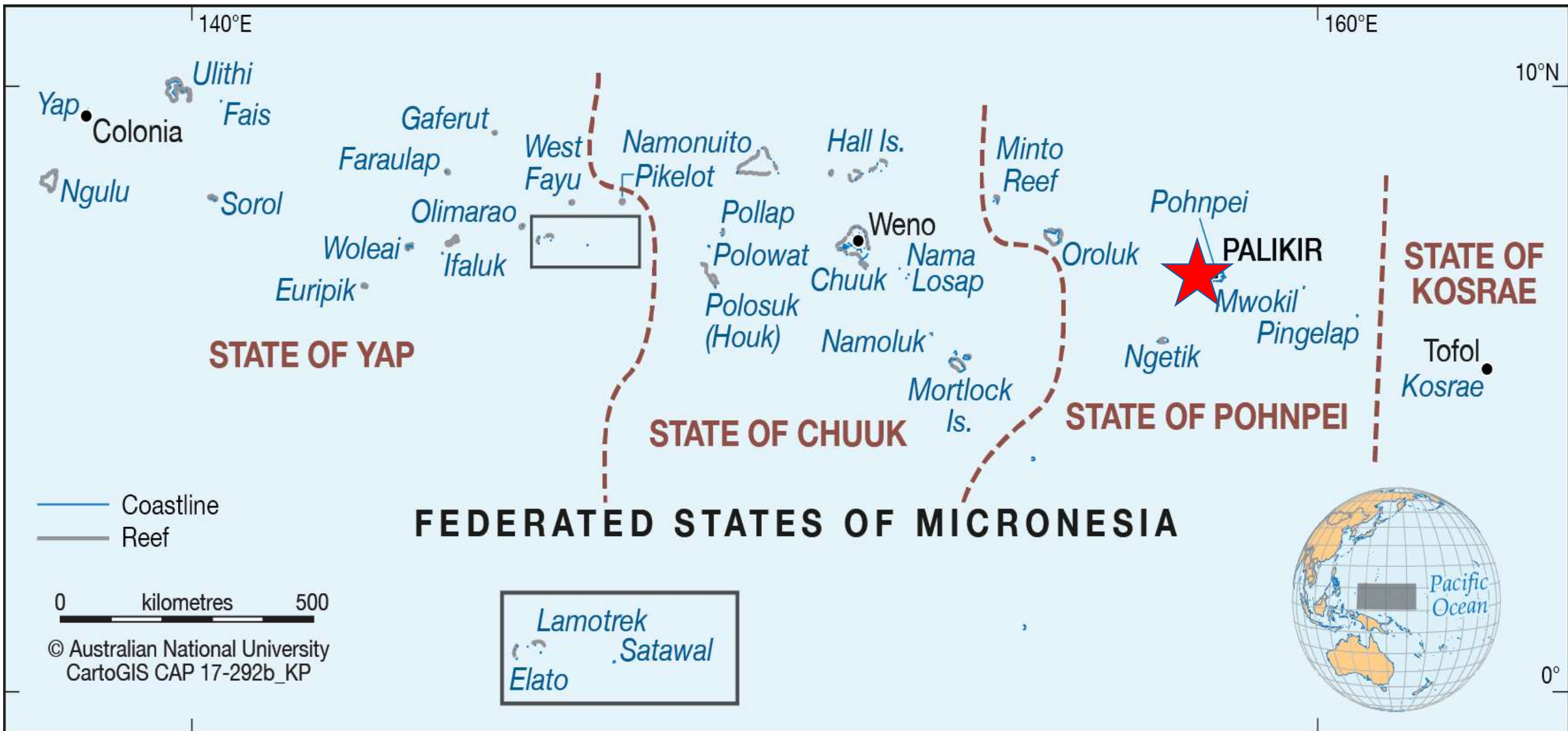


NZAIA - Climate Change Mitigation and Adaptation:
Assessing the Impacts
Auckland, New Zealand
November 27-28, 2019



Jorg Anson and Vanessa Fread

Department of Environment, Climate Change and Emergency Management



- **4 States**
- **607 islands**
- **Land area 702 km²;**
- **Population 102,624 (2010)**

FSM R2R Project (1):

- *Goal:*
 - Implementing an **integrated 'Ridge to Reef' approach** to **enhance ecosystem services**, to conserve globally **important biodiversity** and to **sustain local livelihoods** in the FSM.
- *Objective:*
 - Strengthen local, state, and national **capacities; actions or activities**; to implement an **integrated ecosystems-based management** through a 'ridge to reef approach on High Islands of all four FSM states.
- *Outcomes:*
 - **Outcome 1:** *Integrated ecosystems management and rehabilitation on the high islands of the FSM to enhance R2R connectivity.*
 - **Outcome 2:** Management effectiveness enhanced within new PA(s) on the high islands of FSM as part of R2R.

FSM R2R Project (2):

- **Executing Entities:**

- Department of Environment, Climate Change, & Emergency Management (DECCEM)
- Department of Resources and Development (R&D)
- State Governments (EPAs), NGOs, communities, etc.
- Support – regional NGOs, networks, etc.

- **Implementing Agency – UNDP**

- **Funded by GEF**

R2R aims to protect, demonstrate sustainable approaches, and provide better economic understanding of the links between terrestrial, freshwater and marine ecosystems.



Challenges to SEA in FSM

- No experience of SEA, no past examples
- SEA unfamiliar to everyone
- Weak supporting EIA system (needs revision)
- Limited environmental skills and capacity
- Limited reliable & up-to-date data
- Almost no independent environmental assessment practitioners/consultants
- Government officials unlikely to be able to devote much time (beyond workshops / providing information)
- Limited government funds for SEA

Implications for Approach to SEA

Must be:

- Do-able by FSM nationals – not be dependent on expensive external consultants
- Modest (canoe not a speedboat)
- Not costly
- Reliant mainly on available data (not needing expensive or time-consuming research)
- Relatively simple with clear TOR
- Not too time-consuming
- Locally-tailored and appropriate
- Replicable across all FSM States

Pohnpei State, FSM

- Land area (main island): 332 km²
- Population: c.36,000 (2010 census)
- Rainfall: 7600mm (interior)
- Strong traditional culture
- Pressure of out-migration (mainly to USA)
- Dependence for budget on USA Compact
- Strong dependence on food & fuel imports



Scenarios

Economic Growth Scenarios

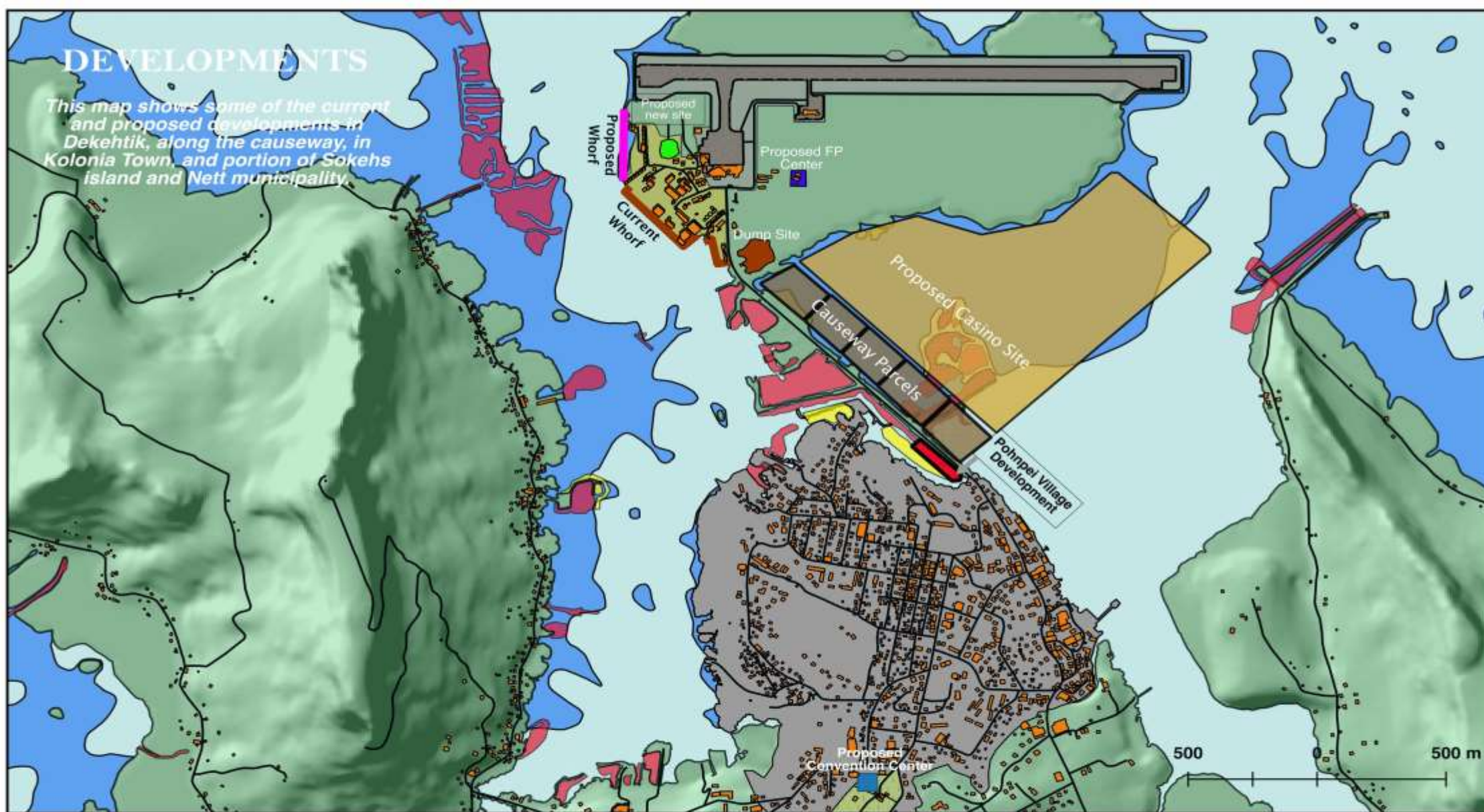
- Stagnant/contracting economic growth
- Business-as-usual (+ inflation)
- Moderate growth (realistic, within ecological & preference limits)
- High growth - major boost to tourism

Influence of Climate Change on Scenarios

- Loss of 30-40% of coral reefs by 2050 (1.5°C rise) (IPCC)
- Loss of 70-80% of coral reefs by 2050 (2°C rise) (IPCC)
- Thus – median 50% loss used

DEVELOPMENTS

This map shows some of the current and proposed developments in Dekehtik, along the causeway, in Kolonia Town, and portion of Sokehs island and Nett municipality.



PPA

- Proposed wharf
- PPA wharf
- Proposed FP Center



Proposed new site



Airport Runway



Airport



Seaport

Causeway Developments

- Proposed Casino Site
- Causeway Parcels
- PNI Village Development



Dump Site



Proposed Convention Center



Botanical Garden



Kolonia Town

Dredge_Sites

- Old dredged sites
- Current dredging sites
- Building footprints



Reef



Lagoon



Land



Road network



N

SEA Environmental Objectives

1. Improve the status & health of **habitats & biodiversity** (land and marine)
2. Over-exploitation, encroachment, destruction of **mangroves** is reduced
3. **Ecosystem services** are maintained
4. Improve management & enforcement of **protected areas**
5. Prevent introduction and improve management/control of **IAS**
6. Minimise **waste** from piggeries entering water courses
7. **Forest clearance** for farming is reduced
8. Inappropriate use of **fertilisers and pesticides** is reduced
9. **Solid waste disposal** generation and inappropriate disposal is reduced
10. **Soil erosion and sedimentation** is reduced
11. Minimise **climate change vulnerability**
12. Minimise natural **disaster vulnerability**
13. **Pollution** is reduced
14. Improve **sewage treatment**

SEA Socio-Economic Objectives

1. Increase uptake of **renewable energy**
2. Enhance economic development and **diversification** (particularly for fisheries, agriculture & tourism)
3. Enhance opportunities for **employment** and new/improved **livelihoods**
4. **Coral dredging** is reduced & better regulated
5. Loss of **skills and expertise** is reduced
6. Increase availability of **local food products**
7. **Conflicts over land use** are reduced
8. Threats to **traditional culture** are reduced
9. Incidences of **communicable and non-communicable diseases** are reduced
10. **Economic losses from IAS** are reduced

Scenario 2 (Business-as-Usual) Comparison of sector impacts

Negative impacts: Very significant and significant negative effects are those scored **-5** and **-4** respectively. Very negative effects are scored **-3**.

Moderately and slightly negative effects are those scored **-2** and **-1**.

Positive impacts: Very significant and significant positive effects are those scored **+5** and **+4** respectively. Very positive effects are scored **+3**.

Moderately and slightly positive effects are those scored **+2** and **+1**.

THEME		OBJECTIVES	Tourism Score	Infrastructure Score	Agriculture Score	Fisheries Score		Overall score
Environmental								
Protected areas and biodiversity	1	Improve the status and health of habitats & biodiversity (land and marine)	0	-2	-2	-1		-5
	2	Over-exploitation, encroachment and destruction of mangroves is reduced	0	-2	0	0		-2
	3	Ecosystem services are maintained	0	-2	-2	-2		-6
	4	Improve management effectiveness & enforcement of protected areas	0	0	+1	-2		-1
	5	Prevent introduction and improve management /control spread of invasive alien species (IAS)	-1	0/-1	0	-1	-2	-3
	6	Minimise waste from piggeries entering water courses	0	0	-4	0		-4
Agriculture	7	Forest clearance for farming is reduced	0	0	-2	0		-2
	8	Inappropriate use of fertilisers and pesticides is reduced	0	0	-1	0		-1
Waste management	9	Solid waste disposal generation and inappropriate disposal is reduced	+1	-1	0/-1	-2	-2	-3
Land degradation	10	Soil erosion and sedimentation is reduced	0	-2	-4	0		-6
Climate change and disasters	11	Minimise climate change vulnerability	0	0	0 / -1	-2	-2	-3
	12	Minimise natural disaster vulnerability	0	0	-1	-2		-3
	13	Pollution is reduced	0	-1	-4	-2		-7
	14	Improve sewage treatment	0	++?	0	0		0

Scenario 2 (Business-as-Usual) Comparison of sector impacts

Negative impacts: Very significant and significant negative effects are those scored **-5** and **-4** respectively. Very negative effects are scored **-3**.

Moderately and slightly negative effects are those scored **-2** and **-1**.

Positive impacts: Very significant and significant positive effects are those scored **+5** and **+4** respectively. Very positive effects are scored **+3**.

Moderately and slightly positive effects are those scored **+2** and **+1**.

THEME		OBJECTIVES	Tourism Score	Infrastructure Score	Agriculture Score	Fisheries Score		Overall score
<i>Energy</i>	15	Increase uptake of renewable energy	0	+1	0	0		+1
<i>Economic</i>	16	Enhance economic development and diversification (particularly for fisheries, agriculture & tourism)	0	+1	+1	-2		0
<i>Employment and livelihood opportunities</i>	17	Enhance opportunities for employment and new/improved livelihoods	0	+1	+1	-2		0
<i>Construction</i>	18	Coral dredging is reduced and better regulated	0	-2	0	0		-2
<i>Population</i>	19	Loss of skills and expertise from FSM is reduced	0	-1	0	-1		-1
<i>Food</i>	20	Increase availability of local food products	+1	-1/-2	0	-5		-6/-7
<i>Land</i>	21	Conflicts over land/marine use are reduced	0	-2	-1	-2		-5
<i>Cultural heritage</i>	22	Threats to traditional culture are eliminated	0	-1	-1	+1		-1/-2
<i>Health</i>	23	Incidences of communicable and non-communicable diseases are reduced	-1	-2	-1	-5		-9
<i>Invasive alien species</i>	24	Economic losses from invasive alien species (IAS) are reduced	-1	-1/-2	0	-1		-3 -4

Comparison of cumulative impacts of all scenarios - environment

Very significant and significant negative effects are those scored **-5** and **-4** respectively. Very negative effects are scored **-3**.

Moderately and slightly negative effects are those scored **-2** and **-1**.

Very significant and significant positive effects are those scored **+5** and **+4** respectively. Very positive effects are scored **+3**.

Moderately and slightly positive effects are those scored **+2** and **+1**.

THEME		OBJECTIVES	Scenario 1	Scenario 2		Scenario 3		Scenario 4	
			Stagnant/ contracting growth	Business- as-usual (low growth)		Moderate growth		High growth	
			Score	Score		Score		Score	
<i>Protected areas and biodiversity</i>	1	Improve the status and health of habitats & biodiversity (land and marine)	-6	-5		-5		-19	
	2	Over-exploitation, encroachment and destruction of mangroves is reduced	-7	-2		-3		-15	
	3	Ecosystem services are maintained	-8	-6		-5		-16	
	4	Improve management effectiveness & enforcement of protected areas	-8	-1		+2		-13/-14	
	5	Prevent introduction and improve management /control spread of invasive alien species (IAS)	-7	-2	-3	-1		-18	
	6	Minimise waste from piggeries entering water courses	-6	-4		-2		+3	
<i>Agriculture</i>	7	Forest clearance for farming is reduced	-5	-2		-3		-7	
	8	Inappropriate use of fertilisers and pesticides is reduced	0	-1		-1		-3	
<i>Waste management</i>	9	Solid waste disposal generation and inappropriate disposal is reduced	-6	-2	-3	+1		-8	
<i>Land degradation</i>	10	Soil erosion and sedimentation is reduced	-5	-6		-5		-10	
<i>Climate change and disasters</i>	11	Minimise climate change vulnerability	-5	-6	-2	-3	0	+1	0
	12	Minimise natural disaster vulnerability	-6		-3		0		0
	13	Pollution is reduced	-12		-7		-2	-3	-10
	14	Improve sewage treatment	-4		0		+3		+1

Comparison of cumulative impacts of all scenarios – sosio-economic

Very significant and significant negative effects are those scored **-5** and **-4** respectively. Very negative effects are scored **-3**.

Moderately and slightly negative effects are those scored **-2** and **-1**.

Very significant and significant positive effects are those scored **+5** and **+4** respectively. Very positive effects are scored **+3**.

Moderately and slightly positive effects are those scored **+2** and **+1**.

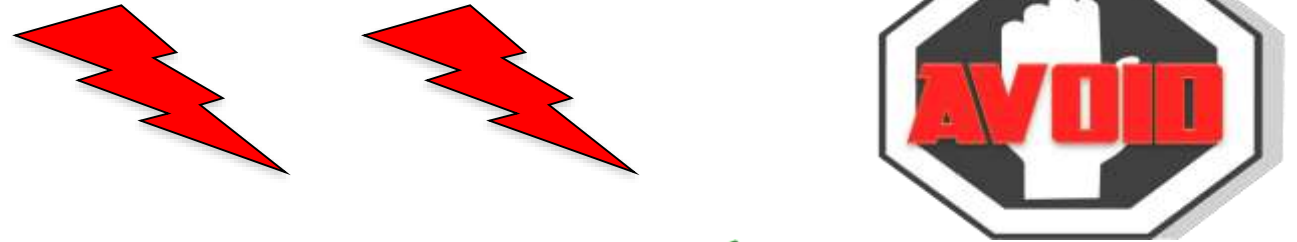
THEME		OBJECTIVES	Scenario 1	Scenario 2	Scenario 3	Scenario 4
			Stagnant/ contracting growth	Business- as-usual (low growth)	Moderate growth	High growth
			Score	Score	Score	Score
<i>Energy</i>	15	Increase uptake of renewable energy	-3	+1	+1	+6
<i>Economic</i>	16	Enhance economic development and diversification (particularly for fisheries, agriculture & tourism)	-9	0	0	+14
<i>Employment and livelihood opportunities</i>	17	Enhance opportunities for employment and new/improved livelihoods	-8	0	+1	+11
<i>Construction</i>	18	Coral dredging is reduced and better regulated	+3 +4	-2	+1	-2 -3
<i>Population</i>	19	Loss of skills and expertise from FSM is reduced	-1	-1	+2	+4
<i>Food</i>	20	Increase availability of local food products	+1	-6 -7	+2	-1
<i>Land</i>	21	Conflicts over land/marine use are reduced	-2	-5	-7	-12
<i>Cultural heritage</i>	22	Threats to traditional culture are eliminated	-3	-1 -2	-3	-10
<i>Health</i>	23	Incidences of communicable and non-communicable diseases are reduced	-3 -4	-9	-3	-12
<i>Invasive alien species</i>	24	Economic losses from invasive alien species (IAS) are reduced	-5	-3 -4	-8	-18

Choices for Pohnpei State

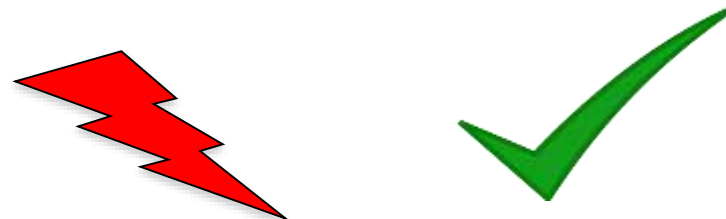
Stagnant / contracting
economy



BAU
(Low Growth)



Moderate Growth



High Growth



What's Next?

Actions	Timeframe
Conduct workshops to complete gaps (focus of workplan and M&E / mitigation) in IEMP and provide inputs to Pohnpei State SDP review and updating process	November - December 2019
Pohnpei State IEMP operationalization and implementation – workshop with consultant to review progress and advise on steps moving forward	January – December 2020
Kosrae State SEA planning – workshop in Pohnpei with consultant and Pohnpei SEA team	January 2020
Kosrae State SEA preparatory work, implementation, and updating plan	February – December 2020
Contribute to SEA Guidelines development and continue to share and capture lessons learned	Ongoing



Jorg Anson

Pohnpei State Project Coordinator

Pohnpei State EPA

jorgyanson@gmail.com

Vanessa Fread

National Technical Coordinator

FSM Department of R&D

freadv@yahoo.com