出國報告(出國類別：研討會)

參加藍色經濟、海洋觀光與藍色金融區域研討會與政策對話報告

服務機關：海洋委員會

姓名職務：莊慶達 副主任委員

林群皓 科長

派赴國家/地區：斐濟南地

出國期間：109 年 2 月 25 日至 2 月 27 日

報告時間：109 年 5 月 4 日

摘要

「藍色經濟、海洋觀光與藍色金融區域研討會與政策對話」由亞洲開發銀行研究所（ADBI）、亞太應用經濟學協會（APAEA）、笹川平和財團海洋政策研究所（OPRI-SPF）、國際合作與發展基金會(ICDF)、南太平洋旅遊組織（SPTO）及斐濟國立大學（FNU）主辦，於 2020 年 2 月 25 至 27 日在斐濟南地召開。本次研討會除我國外，尚有斐濟、東加、吉里巴斯、泰國、印尼、澳洲、印度、斯里蘭卡、菲律賓、韓國、萬那杜、美國、馬來西亞等各國代表共約 60 人參加。

本次研討會為期 3 天，聚焦在藍色經濟與氣候變化調適、藍色金融機制、永續發展目標、海洋災害風險管理機制及海洋旅遊永續管理等議題，邀請相關之政府官員、學者、企業、協會代表共同討論，期以相互激盪交流相關經驗，推動藍色經濟發展並能達成聯合國永續發展目標 SDGs14，以實現環境和諧、經濟發展及社會公平之願景。與會者針對台灣海洋污染防治、海洋廢棄物再利用等課題深感興趣，並對台灣成立海洋事務之專責機關表示讚揚。海洋委員會並與亞洲開發銀行研究所（ADBI）、笹川平和財團海洋政策研究所（OPRI-SPF）、澳洲國家海洋資源及安全中心 (ANCORS)及聯合國開發計劃署（UNDP）、斐濟政府鄉村及海洋部之代表深入交流，期待後續能夠強化交流合作。

「藍色經濟」為推動經濟成長、社會公平及環境和諧之重要策略，並扣合聯合國永續發展目標(SDGS)14「保育及永續利用海洋及海洋資源，以確保永續發展」之精神，已成為各國經濟成長之新動能。海洋委員會以官方代表之身分參與論壇並介紹我國海洋事務推動之情形，實為外交上之突破，未來將賡續以多元方式提升我國海洋事務之國際亮度與合作之可能性。另台灣海洋廢棄物處理之經驗豐富且技術成熟，我國相關廠商可研議籌組團隊積極參與國際推廣，除達到科技技術之合作，發展實質外交拓展商機外，並能提升台灣國際形象，共同推動全球海洋環境永續。

目次

一、 前言

海洋具備調節氣候功能，且蘊含豐富的生物與非生物資源，是維繫人類生存與經濟發展的重要載體，2014 年 1 月聯合國舉辦藍色經濟高峰會，強調環境保護和海洋的永續管理。而藍色經濟有助於促進海洋產業生產力，更能進一步提升對海洋生態系統的瞭解，達到確保海洋資源的永續發展。2015 年聯合國「永續發展高峰會」通過以永續發展目標為核心之「2030 永續發展議程(2030 Agenda for Sustainable Development)」。其中 SDGs14 與海洋相關：「保育及永續利用海洋資源，以確保永續發展」（Conserve and sustainably use the oceans, seas and marine resources），做為各國推動海洋永續發展的指導方針。亞洲開發銀行年會於 2019 年首次移師太平洋島國斐濟辦理，最重大意義在於亞銀宣布「海洋金融倡議 (Ocean Financing Initiative)及健康海洋行動計畫 (Healthy Oceans Action Plan)」，並將於 2025 年前投入 50 億美金協助相關計畫推動。

世界旅遊組織(World Tourism Organization, WTO)預估，2020 年全球觀光人數將成長至 16.02 億人次，觀光收益亦將達 2 兆美元。另以美國為例每年到海濱旅遊的遊客達 1 億人以上，約占其人口比例的 44%，海洋觀光的發展極具潛力。藍色金融則是透過貸款、融資、保險或基金募資等金融工具來提供資金以促進產業發展，則是未來帶動藍色經濟的重要政策。

亞洲開發銀行研究所（ADBI）、亞太應用經濟學協會（APAEA）、笹川平和財團海洋政策研究所（OPRI-SPF）、國際合作與發展基金會(ICDF)、南太平洋旅遊組織（SPTO）及斐濟國立大學（FNU）於 2020 年 2 月 25 日至 2 月 27 日在斐濟南地(Nadi)辦理「藍色經濟、海洋觀光與藍色金融區域研討會與政策對話」，為增進本會與國外海洋相關機構及南太友邦之與會者交流互動，並分享我國於藍色經濟推動成果，強化本會國際性事務發展之能量，派員參與該研討會及發表專題演講，以尋求與會單位間海洋事務實務推動之交流，促進藍色經濟之永續發展。本次國際會議共有來自澳洲、日本、印度及美國等共計 15 國的產官學界代表，近百人次參與。會中發表 15 篇學術論文報告，在為期三天的會議中，與會的各國學者及官員一同探討，如何發展有效的藍色金融機制，以養護海洋資源及振興海洋經濟。

二、 議程

(一)開幕式

此次「藍色經濟、海洋觀光與藍色金融區域研討會與政策對話」於 2020 年 2 月 25 日至 27 日假斐濟南地舉辦，25 日開幕式我方與會人員計有莊副主委慶

達、外交部斐濟代表處黎大使倩儀及國合會（ICDF）斐濟技術團李團長泰昌等6人出席。此次出席單位共約60位各國政府官員、學者及專家主要包含亞洲開發銀行研究所（ADBI）、笹川平和財團海洋政策研究所（OPRI-SPF）、聯合國開發計劃署 (UNDP)、澳洲國家海洋資源及安全中心 (ANCORS)、澳洲墨爾本大學 (為亞銀藍色金融之諮詢單位)、斐濟政府鄉村及海洋部、斐濟國立大學（FNU）及南太平洋島國官員等單位代表。

開場分別由 ADBI 研究部門副主席 Dr.Peter、OPRI-SPF 資深研究員 Miko 及我代表處黎大使致歡迎詞，另 ADBI 的 Naoyuki 教授則透過影片之方式進行開幕引言。黎大使之致詞，介紹國合會推動藍色經濟與斐濟及馬紹爾合作進行水產養殖及復育計畫，另與帛琉合作進行珊瑚礁養護。日本 OPRI 海洋政策研究所主任研究員前川美湖(Miko)，致詞表示今年包括聯合國海洋會議等許多海洋的重要會議將展開，區域間的合作能加速各項目標的達成。也特別感謝國合會在海洋永續發展方面的雙邊合作，以及駐斐濟代表處對本次會議提供的各項必要協助，並感謝本會莊副主委出席與會。接續安排大合照並邀請莊副主委於前排中央進行合影，國合會並於會場設置成果展示版，以宣傳在太平洋島國中各項援助計畫推動之成果，吸引與會人員駐足閱覽與合影。

(二) 第一專題「藍色經濟與藍色經濟中的氣候變化調適」

1. 氣候和海洋風險脆弱性指數

位於美國華府的史汀生中心(Stimson Center)是重要海洋會議—「我們的海洋會議(Our Ocean Conference)」的主要發起成員，也積極參與聯合國海洋會議的提案與倡議。該中心的 Mr. Jack Stuart 表示氣候危機已經到來，沿海城市是最脆弱的地方。氣候和海洋風險脆弱性指數（CORVI）是用來評估認定氣候變化對沿海城市造成的金融、政治和生態風險的工具。借助CORVI，決策者可以將投資目標放在最重要的地方，以增強抵禦能力。CORVI 是對沿海城市氣候和海洋風險的綜合評估，它結合了經驗和專家調查數據，透過衡量 10 個類別和 95 個有關生態、金融和政治風險的子指標，

CASTRIES INTEGRATED RISK PROFILE					
Ecological Risk		Financial Risk		Political Risk	
Ecosystems	6.18	Economics	7.20	Social/Demographics	5.25
Climate	5.52	Infrastructure	5.16	Stability	4.81
Fisheries	5.28	Major Industries	4.42	Governance	4.55
Geography/Water	4.02				

從而使決策者能夠洞悉城市所面臨的挑戰。其 10 個類別所配置之權重如上表，此項指標有助於建立可視化的綜合比較，也能讓更多金融或保險組織能夠相對給予適切的評價，並於斐濟及周邊之島嶼國家進行運用，以作為相關決策之參考。

2. 台灣藍色經濟與永續海洋之發展

海洋委員會莊副主委慶達以「台灣藍色經濟與永續海洋之發展」為題進行分享，介紹我國設立海洋委員會為海洋專責機關，並立法施行「海洋基本法」及積極制定「海洋產業發展條例」、「海域管理法」與「海洋保育法」等作用法。此外我國結合 9 大部會，推動向海致敬-潔淨海洋政策。且在海洋廢棄物之處理從源頭管控、前端回收、後端處理到再製產品之循環經濟模式，具有創新技術與豐富經驗之廠商，相關做法可作為太平洋島國處理廢棄物之參考。

另外在海洋保育面向透過協調機制強化各海洋保護區之管理作為，對如中華白海豚等保育種動物以培訓鯨豚觀察員協助相關監測事宜，以避免離岸風電開發過程所造成之干擾，並訂定友善賞鯨指南以促進生態旅遊之推動。而台灣海洋產業的產值約達 200 億美金佔 GDP3.3%，其中以海洋運輸業所佔比例最高，而台灣海洋休閒遊憩亦屬蓬勃發展期，大型遊艇的製造接單量在 2018 年為世界第 4。未來將在「永續發展」的核心理念下，兼顧經濟發展、環境保育及社會公平之原則下推動台灣 TOP（Taiwan Ocean Plan）計畫。各與會單位對台灣成立海洋事務之專責機關，及推動相關具體作為表示讚揚。

(三) 第二專題「藍色金融機制」

1. 提出促進藍色經濟發展的金融機制與監管機構

OPRI 的副研究員 Nagisa Yoshioka 提出如何調動資金用於海洋保護和永續發展，提出藍色金融的發展構想，舉印度洋中的塞席爾共和國為例，發行 1,500 萬美元的藍色債券來擴充財政資源支持漁業發展，並通過加強 IUU 法規，加強與私營部門和國際機構合作以實現永續的海洋治理，協助政府達成對環境保育的承諾。監測海洋發展、需要投入更多的科學成本，因此各島國開發中國家，更需要和海洋相關的研究智庫進行緊密的合作，

以提供更適切的分析，並促進金融流通。

2. 藍色信貸機制：藍色經濟倡議的加速器

藍色金融的應用在海洋領域尚屬較新穎的觀念，這樣的系統可以讓為海洋環境較友善的產業募集所需要的發展資金。根據英國氣候債券倡議(Climate Bonds Initiative, CBI)的 2019 年度報告，綠色金融在市場上已經有近 1,676 億美金的規模，然而在海洋方面的應用仍十分有限。墨爾本大學的 Dr. Raghu 其研究主軸聚焦在近期藍色投資工具（藍色債券）與投資需求的比較以及加快藍色經濟投資的政策建議是什麼？研究結果為當前的金融投資方式和規模無法滿足大量為發展而衍生的融資需求。調動私人資金以應對藍色經濟所需的主要挑戰是需要降低或分擔私人行為者進行投資的風險，或將其資金的回報率提高到市場可接受的水平。而公私合作夥伴關係，對於推動藍色經濟發展是重要的面向。

(四) 第三專題「海洋災害風險管理與機制」

1. 北海道南部海洋災害風險的減少與藍色經濟的發展：一個基於 GIS 和動態平衡的方法

OPRI 的副研究員 Hajime 表示減少災害風險（DRR）是藍色經濟的重要計畫，利用日本北海道南部的地理資訊(GIS)系統及災害潛勢圖，來分析海嘯對不同產業別的建築物損害，並估算重建所需之成本及各個產業重建對社會產生的影響，以營造一個更具復原力的社會，促進永續發展須謹慎處理與海洋有關的自然災害，例如海嘯等以製定有效的防災投資計畫，並基於可視化的方法，有助於決策者分配資源或尋求融資方案以 CGE 模型危害圖和行業普查災害風險下可能之影響，可以獲得以下結論：

(1) 水產養殖部門：漁業（FIS）、魷魚（SQI）、海帶（SWD）和固定網漁業（NEF）極為脆弱，無法在有限的能力下恢復，因此需要採取特殊措施，或機制以降低災難風險。

(2) 食品加工部門（PRO）需要巨大的支持才能恢復，但隨著魷魚捕獲的增加，此部門可能會產生顯著的社會效益，因此應盡速促進這一部門復原。

(3) 應提供更多的 DRR 措施方案（例如，堤防建設、建築物加固），強化

民眾防災意識和促進 DRR 成效可以量化。

2. 治理藍色未來

ANCORS 的 Dr. Michelle 介紹臥龍岡大學(UOW)對如何實現海洋永續發展的研究。強調各面向組織的整合及沿海地帶之管理，在海洋資訊充足的調查基礎上，構成全球海洋帳目(Global ocean account)才能從社會、經濟活動及海洋保育中，逐步定位其發展過程與各面向的掌握處理。該計畫研究主要包含三個面向。

(1) 預期和想像：追溯沿海和海洋環境中存在的各種關係（社會、文化、藝術和科學）。查看這些現有的關係是否包含人們對藍色海洋未來發展的看法，並設計出社區積極參與未來的沿海環境變化的方式。

(2) 治理和指導：探索學術界、政府和產業界，共同努力實現聯合國永續發展目標的切實可行方法。嘗試各種不同的方法來進行海洋和沿海綜合管理，強調應照顧社區發展需求以回應海岸環境之變化，創造並支持經濟發展機會。

(3) 發展和賦能：探索了創新方法和技術如何為海洋創造新的經濟機會，並解決對海洋健康的威脅。努力加強當地海事行業與 UOW 間的聯繫。

(五) 第四專題「藍色經濟案例和永續發展目標」

1. 藍色融資戰略：以印尼為例

UNDP 的 Dr.Rima 表示印尼規劃透過增加投資來提高藍色經濟相關貢獻，從 2018 佔 GDP3%提高到 2045 的 6%-7%。必要的信息，作為選擇「藍色計畫」的資格標準的基礎。將藍色金融工具定義為公共和私人投資的最佳實踐，並分類出藍色經濟部門框架中與藍色經濟高相關性者為：永續漁業、海洋可再生能源、廢物管理、海洋保護-恢復生物多樣性和生態系統、災害管理與降低風險；中相關性的則為：海洋生物技術、海洋旅遊；低相關性的為：海洋技術。相關的金融工具包括藍色債券、混合融資、信託基金、保險、群眾募資等。

2. 山海生態資源管理：森林流域、沿海含水層和依賴地下水的生態系統

泰國朱拉隆功大學的助理教授 Sittidaj 表示，這項研究為海洋保護提供了重要觀點，其重點是海洋生態系統、森林流域、沿海含水層和依賴地下

水的生態系統（GDE）之間的關係。森林流域的保護，維護近岸海洋地下水相關的生態系統以及沿海地下水抽取，將水文生態系統服務提供整合到一個聯合動態優化框架中。研究發現對於分水嶺範圍予以合理地管理是保護水源補給區的最佳成本選擇。如果沒有流域保護，則對於依賴 GDE 的海洋指標物種會呈現的最低標準增長率，顯著降低淨現值。但是對流域進行保護則可以去除 75%的潛在減少，這些發現可以做為我們進行山海資源管理的一些新思路。

研究的結果表明對流域保護的投資，可以有效減輕相連的近岸生態系統地下水使用者的其他投入成本。因此，管理良好的沿海或近岸生態系統，應採取一些措施保護流域以降低管理成本。

(六) 第五專題「海洋旅遊總覽」

1. 島嶼旅遊：在深藍色的海洋邊緣

雪梨大學的 John Connell 教授對開曼群島、希臘聖托里尼、瓦利斯和富圖納群島之觀光發展進行說明，並闡述永續發展需找到與環境和諧及社會公平的結合。永續發展的推動者應思考，如何將環境與經濟發展聯繫起來並持續多長的時間。推動的策略包含：由誰來執行重點計畫、政府或私人，什麼事務及可向誰進行融資？哪種商業模式？行銷的方法等。在島嶼觀光永續發展可能遭遇的挑戰，則包含地方政治的變化、全球經濟發展的停滯、氣候變遷的影響及郵輪商業化的模式。

2. 亞太島國藍色經濟的驅動力：對旅遊業和漁業的實證研究

印度的海得拉巴民生與發展學院 Dr.Poulomi Bhattacharya 分享這項研究調查了 1996 年至 2016 年期間二十一個亞太島國的旅遊業和漁業，以了解其藍色經濟的決定因素。該區域很大一部分人口直接依靠海洋旅遊和漁業部門的收入和就業。漁業是該地區許多國家提供肉類蛋白質的主要來源。永續漁業的發展和海洋旅遊業可以極大地消除該地區的不平等和貧困等問題，並可以為婦女提供穩定的收入來源並增強其權能。研究結果發現當人口對藍色經濟有負面影響時，需透過環境保護資金投資、綠色能源開發和政策來引導正向發展。而污染對魚類生產則有不利影響；世界經濟成長情形、旅遊相對價格合理，則與訪客的到來呈現正相關。

(七) 第六專題「海洋旅遊及永續管理」

1. 沿海地區的藍色經濟與永續旅遊業管理－從過往經驗學習

Ningbo University 的 Marios Sotiriadis 分享在藍色經濟的背景和框架內，旅遊業對永續和公平增長的貢獻日益受到認可。人們公認旅遊業可以為世界上許多最緊迫的挑戰做出重要貢獻，而在環境維護上所遭遇的挑戰的適當處理方法，是在永續發展的基礎上規劃和實施綜合海岸帶管理（ICZM）。在實現全面的政策和立法工作、跨部門和各級政府的機構合作、沿海管理的科學研究及當地社區和利益相關者的參與等條件下，綜合管理框架是使旅遊業在沿海和海洋地區更具永續性的合適工具。另外在當前氣候變遷的背景下，必須進行一些重大改變。依靠「海灘、陽光和樂趣」所開發的產品，必須通過提供更多的體驗機會來豐富，理想方案是將產品擴展到更大的區域，整合至內陸地區。

2. 孟加拉-考克斯巴扎爾的海洋旅遊永續發展

孟加拉國立大學 Anowar Hossain Bhuiyan 博士表示，海洋觀光佔世界 GDP 的 5%（UNWTO，2019）、貢獻全球就業的 6-7%（UNWTO，2019）。位於孟加拉灣東南部的考克斯巴扎爾擁有世界上最長的海灘，本研究以半結構化問卷進行了數據收集，確定了利益相關者對該地區永續海洋旅遊發展的看法。

利益相關者在獲得利益的情況下支持海洋旅遊發展，其發展並有利於社會、經濟與環境的的永續，但仍可能帶來負面的影響，如生活成本和非法活動的增加，造成人滿為患、廢物產生、對自然資源的壓力增加等問題，須對自然資源進行適當的保護和利用，並減少與當地利益相關者的衝突。並建議增加海洋旅遊活動如釣魚、航行、衝浪等，建立各類型海洋活動之的培訓和認證方式，提出遊客付費機制，並將收取之費用用於保護海洋資源。組成國家權責機構，以管理海洋旅遊活動、培訓、獎勵和資格認證。

(八) 第七專題「海洋旅遊及產業管理」

1. 斯里蘭卡旅遊業與中小型企業的發展：與旅遊相關的中小型企業的表現是否優於非旅遊中小型企業

斯里蘭卡 Uva Wellassa University 的 Mr. Nawarathna 表示，斯里蘭卡已被證明是亞洲增長最快的旅遊目的地之一，它為經濟貢獻了超過 29.8 億美元，僅次於匯兌、紡織品和服裝，佔斯里蘭卡外匯總收入的 14.2%。針對位於斯里蘭卡南部的幾個省，研究與旅遊相關的中小型企業的利潤是否高

於非與旅遊相關的中小型企業(SME)。

研究結果發現與非旅遊業中小型企業相比，旅遊業中小型企業中多數是男性持有者，其平均利潤大大高於非與旅遊有關的中小企業。與旅遊相關的中小型企業的教育水平略低於非旅遊中小型企業的持有者。研究建議通過提供必要的培訓和金融工具，來鼓勵有興趣從事與旅遊相關的人們創業，並建立適當的機制來檢查所提供的服務，以確保為遊客提供優質商品。

2. 保持藍色海洋的生態，在海洋周圍創造值得信賴的永續綠色旅宿

印度 Lucknow 管理學院的 Ansh Gupta 表示圍繞海洋的酒店旅宿業務已成為海洋產業基礎設施的一部分，它也越來越引起公眾的關注，需進行與環境維護等有關之規定，以有效呼應消費者對環保產品與服務的需求，必須思考綠色旅宿的哪些特定方面會導致建立或減少綠色信任？

提出綠色服務體驗（Green Service Encounters /GSE）的概念，透過客戶與服務環境的所有綠色方面的體驗，包括其物理設施、人員以及其他有形和無形的要素，來提高顧客對永續旅宿的信任。而具體可行之面向包含氛圍的營造（保持自然環境，環保室內設計）、設計的應用（最大自然光，低流量水龍頭）、員工對客人的理念傳達（減少浪費，向客人傳達有關酒店的環保方面的信息），營造一個綠色永續生態友好的旅宿環境。

(九) 第八專題「海洋旅遊及藍色經濟」

藍色 Sukuk Ijarah 作為旅遊業創新融資工具的發展：以印尼為例

雅加達印尼銀行的 Alvin Joeshar 表示 Sukuk Ijarah 是回教債券類型之一，藍色 Sukuk Ijarah 則是運用在旅遊業的融資模式。其優勢在於考慮環境角度、具有競爭力的價格及與藍色經濟發展結合具有證券化的潛力。印尼政府成為第一個在國際上發行綠色債券的亞洲國家。在歐美地區之國家對永續發展相關金融投資商品日益重視，也同時帶動了該債券的購買力道。因此，印尼的例子表明，創新性地發行藍色 Sukuk Ijarah 可以幫助一個國家以多種方式吸引資金投入，打開國際資本市場，並可讓傳統伊斯蘭投資者接觸不同的投資領域。

(十) 政策對話一「永續的藍色經濟和金融策略」

首先由斐濟的鄉村及海洋發展部 David Kolitagane 常務秘書長發表主題演講，除強調海洋經濟的活用與發展息息相關之外，並肯定以實證研究

進行政策建議，在各種量化分析中能夠讓政府配套措施完善。

ADBI 研究部門副主席 Dr.Peter 表示，海洋經濟發展之課題特別是島嶼的觀光發展，應基於科學研究來促進海洋的健康，而海洋是基本蛋白質的主要來源並提供相當的就業機會，但污染物的排放及過度捕撈使得海洋生態環境逐漸惡化，也影響了基本蛋白質的來源，且應考量氣候變遷可能造成的影響並進行調適行動，以避免沿海社區經濟貧困之發生。

透過海岸區域的綜合性管理並進行相關投資，以維護永續的漁業、旅遊業之發展。相關金融投資的來源可能是公共資金、私人資金、混合融資及發行債券等，並且可透過對個人或團體以降低稅率的方式來促進投資。

「我的斐濟鯊魚計畫」(My Fiji Shark Project)之社區執行代表 Pei Mereadani 分享斐濟之鯊魚保護計畫藉由招募志工進行相關保育工作，其表示鯊魚是海洋食物鏈中最大的掠食者之一，在生態系統中扮演著至關重要的角色。鯊魚的滅絕將會導致藻類增加將使珊瑚礁窒息而死，物種將失去棲息地。相關具體做法為：蒐集海洋調查數據以擬定政策、種植紅樹林，打造斐濟第一個碳中和度假村、提高民眾對保護鯊魚重要性的認知等。

(十一) 政策對話二「氣候變遷與海洋經濟發展」

本會莊副主委於此專題中擔任與談人，除介紹台灣澎湖因為氣候變遷產生極端之寒潮而導致當地漁業資源大量減少外，並分享目前海洋委員會刻正建立全國海洋資料庫蒐整各項研究、調查資訊，透過大數據的分析研究氣候變化和極端天氣事件對海洋的影響，以對海岸地區的發展能提出適當的策略，符合聯合國 SDGs14 之願景。另發展海洋產業也會引入新科技之運用如人工智能(AI)、區塊鏈(Block chain)、雲端運算(Cloud Computing)、大數據(Big Data)、物聯網(IOT)和 5G 等，達到海洋產業創新，促進藍色經濟發展。

並介紹台灣在海廢處理再利用上具有相當良好的技術，如遠東新世紀(FENC) 、光寶科技（LITE-ON Technology）等企業，為加強企業社會責任（CSR）發展循環經濟以解決海洋污染問題，藉由海廢回收物再產製成運動服飾、鞋子及 3C 產品（如鍵盤和滑鼠）等商品，歡迎各與會單位可進一步研商合作事宜。獲得斐濟官員 David Kolitagane 常務秘書長表示，當地也深受廢棄物處理的困擾，希望能和台灣討論解決方案，持密切聯絡正面回應，希望未來有進一步合作的機會。

UNDP 的學者 Dr. Rima 介紹分享其在印尼推動與 SDGs14 相關的計畫，主要是以小補助案之形式去推動當地社區在氣候變遷課題上的因應與調適作為，並研究對不同性別的影響，計畫執行上鼓勵及強化女性的參與。

另 OPRI 的研究員 Dr. Michel 分享如何減少災害風險對經濟發展之影響，其表示根據國際貨幣基金組織和世界銀行在 2012 年的會議，他們指出透過資本的投入來減輕災害風險的好處是，如果您投資 1 美元那麼將獲得 7 美元的回報。因為加強投資建立如預警系統等設施以增加城市韌性，初期可能是昂貴的，但是它確實會發揮效益更有效地減少災害、降低損失。

(十二) 政策對話三「海洋旅遊與基礎設施，挑戰與前景」

OPRI 的研究員 Dr. Michel 表示亞洲地區的的 GDP 正快速地增長，而太平洋島嶼國家若能擁有穩定的匯率機制則非常重要，因為資本必須穩定地流動，透過儲蓄率的增加並教育兒童學會如何儲蓄，可以為基礎設施的投資提供資金。因此，促進本國儲蓄並將這些儲蓄轉化為自身投資，創造巨大的資產或設備，這將有助於該國的金融穩定。

但是，許多亞洲國家的基礎設施投資收入回報率很低且風險非常大，無法吸引那些養老基金和保險資金的投入。因此有關為創業和中小型企業需求提供資金，我們必須從基礎設施投資中獲得更高的回報率，並降低相關的風險，這樣才可以創造高經濟增長。

良好的基礎架構將把新商業活動帶入該地區，促使 GDP 的增加、稅收上升。這些稅收的一部分可以在政府和基礎設施投資者之間共享，從而可以為基礎設施帶來新的投資。另使用浮動收益，這對於保險公司和養老基金投資計畫而言將更為容易推動，因為最低利率是固定的，基礎設施使用的收費利益遠遠大於利息所得。因此，這些對於基礎設施投資至關重要。

太平洋旅遊組織的執行長 Cocker 表示南太平洋旅遊組織在斐濟透過講習班，教導當地女性如何利用海洋塑料廢棄物結合當地天然纖維(椰子)開發成為當地特色手工藝品，並成為斐濟旅遊業提供的眾多景點的一部分，以呼應包含財務、社會及文化方面永續旅遊計畫的實施。

目前新型態的旅客越來越多，他們的足跡遍及一些偏遠的區域，而傳統的旅行業者較難服務到這類型的旅客。業者必須調整做法來吸引這群高消費但對環境低影響的旅客，並將其旅遊活動的型態從以陸域為主，調整為包含海域如潛水及遊艇活動等。而旅遊業亦面臨海水面上升、珊瑚白化及海岸侵蝕的影響，在相關旅遊商品的設計上亦需帶入環境保育的概念，

以促進旅遊業的永續發展。

太平洋島嶼發展論壇的 Arpana Pratap 說明以斐濟為例，2018 年接待了約 870,000 位訪客，而旅遊業佔斐濟 GDP 的 30%。然而生態旅遊在行程的安排上本質來說是很小眾，通常是家庭式的經營模式。因此，需要政府政策和創新的財務機制協助，以利於在競爭激烈的行業中生存。

(十三) 閉幕式

閉幕式中 ADBI 的研究部門副主席 Dr.Peter 指出，本次會議各國代表及論文發表者們不管在議程中或是場外餐會都進行了充分的討論交流，突顯「健康海洋、藍色經濟與金融的活絡發展」已成為國際間熱烈關注與重視的課題。本次會議的發表報告在經過修正後，將投稿做為 Marine Policy 國際期刊的「藍色經濟及金融」特刊，希冀能獲得更多的學術及政策討論。

我國國合會駐斐濟技術團李泰昌團長也代表致詞，感謝大家參與本次研討會。表示在過去４０多年來，臺灣國合會於全世界與各伙伴國家共同執行許多農藝、園藝、水產、畜牧、資訊、教育與醫療範籌的合作計畫。希望未來能和與會各單位在新興的永續藍色經濟和藍色海洋議題，有合作的機會。

根據英國 CBI (Climate Bonds Initiative)研究指出，亞太已成為環境金融成長最快速的區域，如何利用逐漸提升的環保意識及活絡市場，建構與海洋共存並讓資源永續發展的制度，至關重要。

三、 本會人員與其他與會者互動交流情形

(一)OPRI 之資深研究員 Miko 及我國駐斐濟代表處黎大使於開幕致詞中特別感謝本會莊副主委出席與會，並邀請莊副主委於前排中央與與會人員進行合影。

(二)莊副主委以「台灣藍色經濟與永續海洋之發展」為題進行分享，與會者針對台灣海洋污染防治、海洋垃圾減量、海洋空間規劃及島嶼整合管理等面向進行提問交流，並對台灣成立海洋事務之專責機關表示讚揚。

(三)參加歡迎晚宴本會人員與 ADBI 研究部門副主席 Dr.Peter、斐濟政府鄉村及海洋部官員常務秘書長 Mr.David 及聯合國開發計劃署（UNDP）代表 Dr.Rima 及其他與會人員意見交流，並期待後續能夠就相關議題深化交流合作。

(四)為了解我技術團在斐濟當地工作推展之情形，本會莊副主委由我國國合會駐斐濟技術團李團長陪同前往 Sigatoka 之示範農場及 Denarau 碼頭視察斐濟鄉村與海洋觀光休閒產業發展現況，沿途並觀察當地露天堆置垃圾場和塑膠瓶回收情形，評估斐濟成為太平洋島國廢棄物回收與初級處理鏈結點之可行性。

(五)本會代表與 ADBI 研究部門副主席 DR.Peter 及訓練部 Dr.Pitchaya、UNDP 代表 Dr.Rima、臥龍崗大學中澳大利亞國家海洋資源與安全中心（ANCORS）的高級研究員 Dr.Michelle，針對 8 月於帛琉舉辦之「我們的海洋 OOC」會議及 11 月於澳洲臥龍崗大學舉辦之會議進行交流。

(六)本會代表莊副主委及林科長針對各專題探討內容及政策對話進行，如海洋產業循環經濟、海洋保育、生態旅遊及藍色金融之推展等，多次發言分享我國經驗及進行提問互動交流。

四、 心得與建議

(一)「藍色經濟」牽涉之面向甚廣，如海洋觀光遊憩、永續漁業發展、藍色金融商品及海廢循環再利用等，且其為推動經濟成長、社會公平及環境和諧之重要策略，並扣合聯合國永續發展目標(SDGS)14「保育及永續利用海洋及海洋資源，以確保永續發展」之精神，已成為各國經濟成長之新動能。

(二)此次海洋委員會以我國官方代表之身分參與論壇於會中備受禮遇，並介紹我國在海洋法治、海洋保育及海洋產業等事務推動之情形，且與斐濟、吉里巴斯、萬那杜之官方代表交流互動，為外交上之突破，建議可賡續與相關單位合作舉辦會議或活動，或於我方相關之會議邀請官方有關部門派員參加，持續提升我國海洋事務之國際亮度與合作之可能性。

(三)有關台灣海洋廢棄物處理之經驗豐富且技術成熟，應積極進行國際推廣促進合作；另斐濟為南太平洋中島嶼腹地相對廣闊之國家，可做為鄰近島嶼國家海洋廢棄物回收、置放之轉運站或是建立處理設施之區域中心，我國相關廠商可籌組團隊協助辦理，除達到科技技術推展，實質外交拓展商機外，並能提升台灣國際形象，共同推動全球海洋環境永續。

(四)海洋保育的推動必須與海洋觀光生態旅遊進行結合，促進在地收益方能獲得在地居民的支持，以提升保育成效。而海洋遊憩產業推動過程中，政府單位應該給予當地小型企業政策上的支持和金融上的協助，以扶助其發展。

(五)島嶼推動觀光發展過程中因為生態環境相對脆弱，亦可能帶來如物價上漲、

農業勞動力轉移、犯罪率提高等負面效應，並應考量當地居民如何受惠等議題，建議島嶼觀光發展策略的訂定可從二方面來進行：(1) 從上而下，包含以生態環境限制訂定遊客承載量、基礎建設的投入、區域整體的發展；及 (2) 從下而上，地方的需求是什麼？社區的發展特色是什麼，來思考綜合性的發展與管理。

附錄 一、會議議程

Regional Conference and Policy Dialogue

on **Blue Economy, Ocean Tourism, and Sustainable Blue Financing**

[as of 21 February 2020]

Jointly organized by:

Asian Development Bank Institute (ADBI)

Asia-Pacific Applied Economics Association (APAEA)

Ocean Policy Research Institute (OPRI-SPF)

International Cooperation and Development Fund

South Pacific Tourism Organisation (SPTO)

Fiji National University (FNU)

25-27 February 2020 Nadi, Fiji

Day 1: Ocean Economy, Blue Finance, and Ocean Risk Management	
8:30 – 9:00	Registration
9:00 – 9:15	Welcoming Remarks Peter Morgan, Vice Chair, Research Department, ADBI Miko Maekawa, Senior Research Fellow, OPRI-SPF Jessica C. Lee, Representative, TTO in Fiji
9:15 – 9:30	Opening Remarks *Prof. Naoyuki Yoshino, Dean, Asian Development Bank Institute (VDO Presentation)*
9:30 – 10:30	**Session 1: Blue Economy and Climate Change Adaption in Blue Economy** Moderator: Peter Morgan, ADBI **The Climate and Ocean Risk Vulnerability Index (CORVI)** Speaker: Jack Stuart, Stimson Center Discussant: Priyatma Singh, University of Fiji **Blue Economy and Sustainable Ocean Development** Speaker: Dr. Ted C. Chuang, Ocean Affair Council (OAC) Discussant: Raghu Dharmapuri Tirumala, University of Melbourne

10:30 – 10:45	**Open discussion**
10:45 – 11:15	**Group Photo and Coffee Break**
11:15– 12:15	**Session 2: Blue Financing Mechanism** Moderator: Michael C. Huang, OPRI-SPF **Proposing Regulatory Driven Blue Finance Mechanism for Blue Economy Development** Speaker: Nagisa Yoshioka, OPRI-SPF Discussant: Sittidej Pongkijvorasin, Chulalongkorn University **Blue Credit Mechanism Proposed Accelerator for Blue Economy Projects** Speaker: Raghu Dharmapuri Tirumala, University of Melbourne Discussant: Michelle Voyer, ANCORS
12:15 – 12:30	**Open Discussion**
12:30 – 14:00	**Lunch**
14:00 – 15:00	**Session 3: Ocean Disaster Risk Management & Mechanism** Moderator: Rima Prama Artha, UNDP **Ocean Disaster Risk Reduction and Development of Blue Economy on Southern Hokkaido: An Approach of GIS and Dynamic General Equilibrium** Speaker: Hajime Tanaka, OPRI-SPF Discussant: Rima Prama Artha,UNDP **Governing a Blue Future** Speaker: Michelle Voyer, ANCORS Discussant: Peter Morgan, ADBI
15:00 – 15:15	**Open Discussion**
15:15 – 15:30	**Coffee Break**
15:30 - 16:30	**Session 4: Regional Focus – Blue Economy cases and SDGs** Moderator: Michelle Voyer, ANCORS **Blue Financing Strategic: the Case of Indonesia** Speaker: Rima Prama Artha, UNDP Discussant: Michael C. Huang, OPRI **Mountain-to-Sea Ecological Resource Management in an Island: Watersheds, Invasive Tree, Coastal Aquifer and Nearshore Resources in Hawaii Island** Speaker: Sittidej Pongkijvorasin, Faculty of Economics, Chulalongkorn University Discussant: Ted C. Chuang, OAC
16:30 – 16:45	**Open Discussion**
16:45 – 17:00	**Wrap Up Session**

18:30 – 20:30	**Dinner Hosted by ADBI**
Day 2: Ocean Tourism	
8:45 – 9:15	**Registration**
9:15 – 9:45	**Keynote Address on Climate Change and Tourism Prospects** *Prof. Paresh Kumar Narayan, Deakin University, & President, Asia-Pacific Applied Economics Association (VDO Presentation)*
9:45 – 10:45	**Session 5: Ocean Tourism Overview** Moderator: Peter Morgan, ADBI **Island tourism: On the edge of the deep blue ocean** Speaker: John Connell, University of Sydney Discussant: Rohit Kishore, Fiji National University **Drivers of blue economy in Asia-Pacific island countries: An empirical investigation of tourism and fishery sectors** Speaker: Poulomi Bhattacharya, Tata Institute of Social Sciences, Hyderabad Discussant: Baljeet Singh, University of the South Pacific
10:45 – 11:00	**Open Discussion**
11:00 – 11:15	**Coffee Break**
11:15 – 12:15	**Session 6: Sustainable Management for Ocean Tourism** Moderator: Pitchaya Sirivunnabood, ADBI **Blue economy and sustainable tourism management in coastal zones: Learning from experience** Speaker: Marios Sotiriadis, Ningbo University Discussant: Susan Sharma, Deakin University **Marine tourism for sustainable development in Cox's Bazar, Bangladesh** Speaker: Md. Anowar Hossain Bhuiyan, National University, Bangladesh Discussant: Badri Narayan Rath, IIT Hyderabad
12:15: 12:30	**Open Discussion**
12:30 – 14:00	**Lunch**
14:00 – 15:00	**Session 7: Ocean Tourism and Firm Management** Moderator: Arpana Pratap, Pacific Island Development Forum (PIDF), Fiji **Tourism and SME development: Do tourism related SMEs perform better than non-tourism SMEs** Speaker: Dhananjaya Nawarathna, Uva Wellassa University, Sri Lanka Discussant: Badri Narayan Rath, IIT Hyderabad **Keeping blue oceans green creating trustworthy sustainable green hotels around oceans** Speaker: Ansh Gupta, Indian Institute of Management Lucknow Discussant: Keshmeer Makun, University of the South Pacific

15:00 – 15:15	**Open Discussion**
15:15 – 15:30	**Coffee Break**
15:30 – 16:00	**Session 8: Ocean Tourism and Blue Finance** Moderator: Michael C. Huang, OPRI **The development of blue Sukuk Ijarah as innovative financing instrument in the tourism sectors: The case of Indonesia** Speaker: Alvin Joeshar, Bank Indonesia Jakarta, Indonesia Discussant: Dinh Phan, La Trobe University
16:00 – 16:15	**Open Discussion**
16:15 – 16:30	**Wrap Up Session**
Day 3: Policy Dialogue on Ocean Economy	
9:00 – 9:30	**Registration**
9:30 – 9:45	**Keynote Address** *David Kolitagane, Permanent Secretary, Ministry of Rural and Maritime Development*
9:45 – 10:00	**ADB Action Plan on Healthy Oceans** *Hanna Uusimaa, Climate Change Specialist, PARD, ADB*
10:00 – 11:15	**Policy Dialogue 1: Strategies for Sustainable Blue Economy and Finance** Moderator: Peter Morgan, ADBI Panelists: Elisapeti Veikoso, National Spatial Planning Authority Office, Ministry of Land and Natural Resources, Tonga Pei Mereadani, Community Beneficiary, My Fiji Shark Project Fazrul Rahman, Revenue & Customs Services Michelle Voyer, ANCORS *Q&As (15 minutes)*
11:15 – 11:30	**Coffee Break**
11:30 – 12:45	**Policy Dialogue 2: Climate Change and Development for Ocean Economy** Moderator: Pitchaya Sirivunnabood, CBT Economist, ADBI Panelists: Dewa Putu Ekayana, Fiscal Policy Analyst, Ministry of Finance Indonesia Rima Prama Artha, UNDP Ted C. Chuang, OAC

	Michael C. Huang, OPRI *Q&As (15 minutes)*
12:45 – 14:00	**Lunch**
14:00-14:15	**Special Talk: Necessary Conditions for Asia's Growth and Needs for Infrastructure Investment in Pacific Islands and Coastal Economies** *Naoyuki Yoshino, Dean, Asian Development Bank Institute* *(VDO Presentation)*
14:15 – 15:30	**Policy Dialogue 3: Ocean Tourism and Infrastructure: Challenges and Prospects** Moderator: Michael C. Huang, OPRI Panelists: Petero Manufolau, Chief Executive Officer, Tourism Authority of Kiribati (TAK) Christopher Cocker, Chief Executive Officer, Pacific Tourism Organisation (SPTO) John Connell, University of Sydney Arpana Pratap, Pacific Island Development Forum (PIDF), Fiji *Q&As (15 minutes)*
15:30 – 16:00	**Coffee Break**
16:00 – 16:30	**Closing Session** ADBI OPRI APAEA ICDF

附錄 二、研討會照片

研討會各經濟體代表、講者及與會人員合照

我國外交部斐濟代表處黎大使倩儀於開幕式進行致詞

會場展示我國國合會斐濟技術團輔導之成果

本會莊副主委慶達(左 3)及斐濟代表處黎大使倩儀(左 4)等我國與會者於會中合影

本會莊副主委慶達於會中進行專題演講

參加歡迎晚宴

本會莊副主委慶達與墨爾本大學 Dr.Raghu（亞洲開發銀行 ADB 的顧問）
交流對 ADB 計畫提案應注意之事項

本會莊副主委慶達(左)與國合會斐濟技術團李泰昌團長
參訪技術團於當地推動之成果

本會莊副主委慶達於政策對話 **2** 擔任與談人

本會莊副主委慶達(右)與聯合國開發計劃署（UNDP）代表 Dr.Rima 合影

附錄 三、研討會相關簡報

STIMSON

RESOURCES & CLIMATE

PROJECT SUMMARY

The Climate and Ocean Risk Vulnerability Index

Climate, Ocean Risk, and Resilience Project

Environmental Security Program

Coastal Cities are at the Forefront of the Climate Crisis

The climate crisis has arrived, and coastal cities are the most vulnerable places. The Climate and Ocean Risk Vulnerability Index (CORVI) is a tool to identify the financial, political, and ecological risks that climate change poses to coastal cities. With CORVI, decision makers can target their investments to build resilience where it matters most.

The climate crisis has arrived and the science linking climate and ocean risk is undeniable. The recent IPCC report on the Ocean and the Cryosphere states that our oceans are at a tipping point. Sea levels are projected to rise by up to a meter by 2100 due to a combination of sea ice melt and thermal expansion. Moreover, the average intensity of extreme weather events are projected to increase by up to 10 percent, with rainfall associated with these events projected to rise by at least 7 percent per degree of warming on the sea surface. These interconnected impacts of the changing climate are having serious consequences on developing coastal cities facing population growth, their environment and ecosystems, as well as the associated economic and social structures that support national, regional, and global security.

On top of these stressors, many developing cities area already dealing with underlying economic and social issues, such as poverty, outdated infrastructure, poor governance, and corruption.

As climate change worsens, this intersection of social, economic, and environmental issues may leave governments in developing cities unable to provide basic services and protections to its citizens, which could lead to unrest, instability, and possibly conflict. Despite growing recognition of the impact of climate and ocean risks on security in coastal cities, there is a lack of decision tools to help integrate these multiple risk factors at the city level.

Against this backdrop, governments, financial institutions, development organizations, and the private sector need tools which identify and prioritize issues of greatest climate and ocean risk.

To create a more holistic picture of these vulnerabilities, the Stimson Center has developed the Climate and Ocean Risk Vulnerability Index (CORVI), which quantifies diverse climate and oceans risks at the city level. The objective of CORVI is to drive investment towards issues of greatest risk, and provide a tool for decision makers to help them prioritize necessary action to mitigate these risks.

What is CORVI?

CORVI is an integrated assessment of climate and ocean risks for coastal cities. It combines empirical and expert survey data to measure ecological, financial, and political risk across 10 categories and 95 sub indicators, giving policymakers critical insights into the challenges their cities face.

CORVI provides an integrated assessment of climate and ocean risks for coastal cities. In a competitive funding environment, ensuring scarce resources are used efficiently is critical. By measuring ecological, financial, and political risk through ten risk category's and 95 sub indicators, the CORVI highlights the greatest risks coastal cities face. Each indicator is scored between 1 and 10, with 10 indicating greatest risk.

The CORVI is different from other indices in two ways. First, unlike other environmental indices which tend to focus on the national level, CORVI is city based, providing city level detail on the nature and impact of climate and ocean risks.[1] Second, CORVI uses a methodology that combines empirical and expert survey data through structured expert judgement.[2] This approach provides a contextual and data driven assessment of the diverse security risks. More

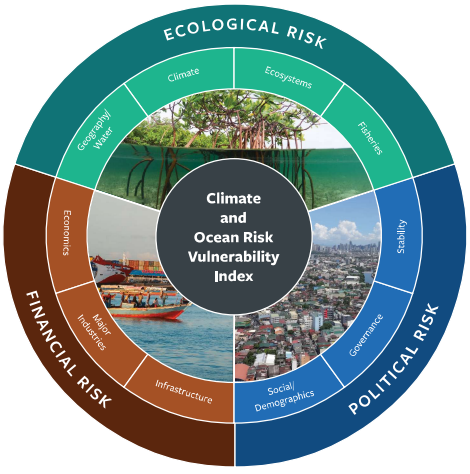

Figure 1: CORVI risk indicators (sub indicators not shown).

information on the CORVI methodology can be found in the appendix.

By viewing the diverse nature of climate and ocean risks at the city level, CORVI integrates risks which are all too often viewed through a singular lens. Ecological risks, such as climate change, ecosystem health, the state of near and offshore fisheries, and geographical factors such as coastal erosion provide important metrics to understand the environmental changes which coastal cities face.

When these ecological risks are considered in context with financial risk, a different picture emerges. Major industries such as tourism, fishing, and shipping, which are dependent on ecosystems services, are essential for the economic and food security of city residents. These sectors are also highly vulnerable to a changing climate. Moreover, the infrastructure on which coastal cities depend, such as air and seaports, are vulnerable to increased intensity of storms and sea level rise.

Finally, political capacity is at the heart of how cities respond to increased climate and ocean risk. Political risk in the form of weak social and political institutions, when integrated with environmental pressures such as rising temperatures, in addition to financial risks such as high unemployment and degraded infrastructure such as informal housing can lead to social instability, and reduce the capacity of a city to adequately respond to the overall threat posed by the climate crisis.

Preliminary Results

CORVI was successfully piloted in two Caribbean cities: Castries, Saint Lucia and Kingston, Jamaica. In 2020 the Stimson Center will complete assessments in the East African cities of Mombasa, Kenya and Dar es Salaam, Tanzania, and work with partners to complete assessment in Fiji and other nations in the Pacific Region.

Castries, Saint Lucia

CASTRIES INTEGRATED RISK PROFILE					
Ecological Risk		**Financial Risk**		**Political Risk**	
Ecosystems	6.18	Economics	7.20	Social/Demographics	5.25
Climate	5.52	Infrastructure	5.16	Stability	4.81
Fisheries	5.28	Major Industries	4.42	Governance	4.55
Geography/Water	4.02				

Built on reclaimed land, Castries is situated on the west coast of Saint Lucia. With 1.2 million tourists arriving by cruise ship or air in 2018, a significant portion of the city's population is employed in tourism related industries which support the neighboring district of Gros Islet. As such the geographic study area was expanded to include the Gros Islet district, in addition to Castries. This area comprises 50 percent of the national population.

Saint Lucia is a leader among Caribbean states who have prioritized responses to climate change. Yet at the same time it suffers from climate and ocean risks related to its high reliance on a single industry which is dependent on its coastal and marine environment. Furthermore the city faces growing concerns over degraded fresh and marine water quality, diminished ecosystems such as coral reefs, and a significant increase in droughts across Saint Lucia, which is leading to increased water scarcity throughout the study area, effecting agricultural food productivity.

Strengths: Despite the vulnerabilities across the city, Castries has shown success in building resilience in its fishing industry through increased aquaculture production and fisheries monitoring. CORVI results also show that Castries has been successful at building resilience in its social and governance sectors, reflected in improved disaster capacity response and high rule of law scores. Finally, efforts to combat storm surge and flooding at Port Castries through pump installation and sea walls has reduced risk towards this critical piece of infrastructure. However, marine debris during extreme weather events such as a hurricane remains a significant risk.

Challenges: With its economy heavily concentrated in coastal tourism, Castries is vulnerable to any significant change in tourist numbers. Forty percent of the population of Castries is directly employed in tourism, with many more employed in secondary sectors and within the informal economy. This points to the importance of this industry to the health of the city and national economy. A single extreme weather event could devastate this industry.

While tourism provides economic security for many residents in Castries, a lack of effective regulation has also contributed to increased risk. Low water quality and poor waste water treatment degrade the long-term sustainability of the industry. This also has negative secondary impacts on coral reef health, as well as increasing the risk of flooding. These impacts act as threat multipliers, damaging the fishery and

Figure 2: Cruise Ship Leaving Castries. Source: Stimson Center.

tourism sectors. Finally, high youth unemployment and unregulated settlement construction in at-risk areas reduce the capacity of Castries to recover from extreme weather events, as unplanned settlements contribute to flood risk.

Opportunities to build resilience: While economic indicators such as high youth unemployment, lack of industrial diversification, and inequality score highest for risk, survey responses from local experts indicate that progress is already being made on those indicators. In addition, expert surveys indicate that future investments should prioritize resilience towards heat and drought events. Finally, flood risk and its associated impacts on water contamination can be reduced through improved city planning. Flood resilience projects such as slope stabilization and improved drainage – already being undertaken in Castries East – should be expanded to build resilience.

Kingston, Jamaica

KINGSTON INTEGRATED RISK PROFILE					
Ecological Risk		**Financial Risk**		**Political Risk**	
Ecosystems	5.78	Economics	5.77	Social/Demographics	5.62
Climate	5.16	Infrastructure	5.14	Stability	5.38
Fisheries	5.16	Major Industries	4.55	Governance	4.43
Geography/Water	4.48				

Located in a one of the largest natural harbors in the world and enclosed by the Blue Mountains, Kingston is the seat of government for Jamaica and the largest entity in the national economy. To fully capture climate and ocean risk in Kingston, the study area was expanded to include the town of Portmore, as the majority of its residents work in Kingston. The population of this study area is 765,000, or 26 percent of the overall population. CORVI findings shows that Kingston's comparatively diversified economy lowers its vulnerability to extreme weather events, as it is not dependent on one industry for its economic security. However, vulnerability in key indicators such as informal housing, waste water management, and a high level of shoreline development increase its risk to extreme weather events.

Strengths: CORVI results show that Kingston has had notable success in building resilience to climate and ocean risks. Its diverse economy – primarily composed of services, shipping, and tourism – lowers Kingston's risk, as reliance on a single industry increases a cities vulnerability to extreme weather events. Improved fresh water management and flood resilience measures for sea and air port are two examples of how Kingston has reduced infrastructure risk.

Challenges: Rapid urbanization is an issue which is increasing climate and ocean risks across many of the CORVI indicators. A large informal economy, high unemployment, and unregulated settlement construction have all been exacerbated by the fast pace of urbanization. High unemployment has also led to a greater reliance on subsistence and artisanal fishing for economic and food security. Informal housing construction has occurred in areas that are vulnerable to storm surge and sea level rise. These risks, along with relatively high levels of crime and social tension, hinder the ability of Kingston to respond to extreme weather events.

Figure 3: Informal settlements in Kingston. Source: iStock.

The cascading social risks are further exacerbated by degraded ecosystems. Declining coral reefs and mangroves across Jamaica impact the artisanal fishing sector, increasing the vulnerability of the poorest which rely on catch for nutrition and employment. Ultimately, the combination of social and ecological pressures increases the vulnerability for the poorest residents of Kingston.

Opportunities to build resilience: While socio-economic issues such as high unemployment and informal housing are difficult to tackle, successful outcomes in these areas will have positive secondary impacts for other priority categories, such as ecosystems. Ensuring settlement construction does not negatively impact ecological systems and prioritizing sustainable urban planning are two areas which can positively impact multiple high risk indicators. Overall the index shows Kingston is well-placed to deal with projected climate and ocean risks. However, such resilience could be overwhelmed if social issues such as crime and inequality go unaddressed.

Appendix: Methodology

Empirical and survey data is collected, where possible, on all 95 indicators, which form the 10 categories. This data is combined using an innovative methodology. CORVI uses structured expert judgement (SEJ) to combine empirical and survey data to produce a holistic assessment relative to other cities in a geographic region. Each indicator and risk category are scored from 1 to 10, with 10 indicating highest risk.

The use of city level empirical data and surveys from stakeholders within each city, allows CORVI assessment to reflect the specific risks that the coastal city is facing. In addition, as the number of survey responses increase, indicators become more robust over time.

What is structured expert judgment?

SEJ is a social science technique which seeks to quantify risk when existing empirical data is inadequate. Through structured interviews and surveys, as well as a series of weighting procedures to ensure data is representative, SEJ allows researchers to quantify topics that might otherwise be impossible to study in a systematic fashion. As SEJ is often applied to specialized fields where empirical data is scarce, it is a useful method for analyzing small sample sizes.

In climate change research SEJ provides a method to bring expert knowledge to bear on these important problems[8] Examples of using SEJ include the link between climate change and conflict[9], the contribution of sea ice to sea level rise[10], and the impact of invasive species on ecosystem services.[11] In all these cases, expert knowledge is combined with empirical data to reduce uncertainty and produce stronger conclusions.

Indicator Factors

Each indicator is made up of five factors which together provide a holistic assessment of the past, current, and future risk trends. Empirical data is collected on current and past observed risk (factors 1 and 2), while survey data is collected on all five risk factors.

1. The **Baseline** measures the current level of risk for a particular indicator relative to other coastal cities in the region.[3]
2. **Observed trends** assesses the direction of risk for the past 10 years.
3. **Expected trends** assesses the direction of risk in the next 10 years.[4]
4. **Magnitude** assesses the degree of expected future trend change, relative to other cities in the region.
5. Finally, **Impact** assesses how the future change in the risk indicator will impact a particular coastal city. A single factor may not correlate with increased risk in its own, but when combined with other risks, could be significant.

Combining Empirical and Survey Data

While empirical data on the impacts of climate and ocean risks has greatly improved, data gaps remain. To overcome this challenge, CORVI uses a combination of empirical data and surveys from

subject matter experts (SMEs) to collect data that would otherwise be unavailable. This data was the combined with empirical data using SEJ to produce a comparative score for each indicator in the index.[5]

SMEs are identified through desk research and extensive outreach to stakeholders in the target coastal cities. These experts then refer the Stimson research team to other stakeholders with appropriate expertise using the "snowball" method.[6] SMEs include academics, government officials, civil society activists, and representatives from the business community. Finally, to ensure survey data gathered adheres to the scientific principle's neutrality, accountability, and validation, survey answers are compared to empirical data to weight experts through a coherence check.[7] This ensures that experts who answers do not match empirical data are not weighted as highly as those who do.

Weighting Indicators in a Risk Category

Finally, individual indicator scores are combined into a final risk category score through a three step weighting process. First, indicator responses have to meet a minimum data threshold to be included in the final risk category score.[12] Second, indicators are weighted for data confidence. Third, using survey data, indicators are weighted on importance, relative to other indicators in that category.[13]

Project team

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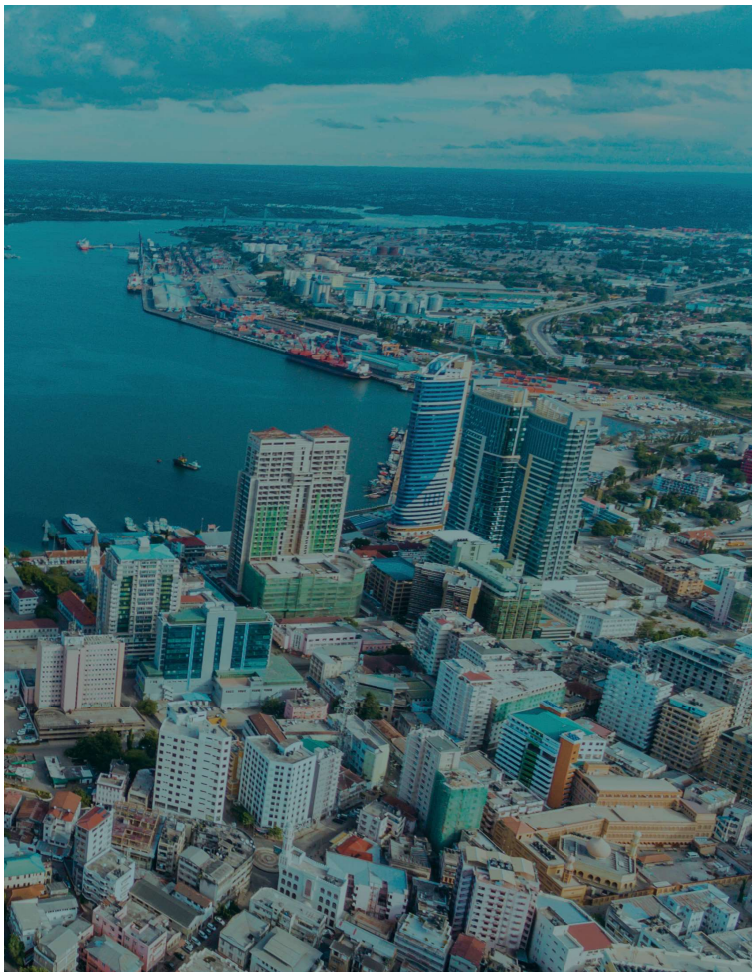
About Stimson

The Stimson Center is a nonpartisan policy research center working to protect people, preserve the planet, and promote security & prosperity

Endnotes

1. Examples include the Environmental Performance Index, the Ocean Health Index, and the ND-GAIN index.
2. Roger Cooke, *Experts in uncertainty: Opinion and Subjective Probability in Science* (New York: Oxford University Press, 1991).
3. Baseline data was collected from 2016 where possible. The only exception are indicators relating to climate change, where a 15 year average (2003-2018) is used to account for slow onset changes to the geophysical environment.
4. The only exception to the 10 year trend measure are climate change indicators, which use a 15 year trend horizon to account for slow onset changes.
5. For an introduction to structured expert judgement, see Cherie Maestas, "Expert Surveys as a Measurement Tool: Challenges and New Frontiers," in Lonna Rae Atkeson and R. Michael Alvarez (eds) *The Oxford Handbook of Polling and Survey Methods* (Oxford: Oxford University Press, 2018).
6. Snowball sampling or chain-referral sampling is a non-probability sampling technique used when samples have traits that are difficult to find. In this sampling technique, existing subjects provide referrals to recruit additional subjects required for a research study.
7. Abigail Colson and Roger Cooke, "Expert Elicitation: Using the Classical Model to Validate Experts' Judgements," *Review of Environmental Economics and Policy* 12, no. 1 (2018): 113-132.
8. M. Granger Morgan, "Certainty, Uncertainty, and Climate Change," *Climatic Change* 108, no. 4 (2011): 707–721.
9. Katharine J. Mach et. al., "Climate as a Risk Factor for Armed Conflict," *Nature* 571 (2019): 193–197.
10. Jonathan L. Bamber, Michael Oppenheimer, Robert E. Kopp, Willy P. Aspinall, and Roger M. Cooke, "Ice Sheet Contributions to Future Sea-Level Rise from Structured Expert Judgment," PNAS 116, no.23 (2019).
11. Tobias Schwoerer, Joseph M Little, and Milo D Adkison, "Aquatic Invasive Species Change Ecosystem Services from the World's Largest Wild Sockeye Salmon Fisheries in Alaska," *Journal of Ocean and Coastal Economics* 6, no. 1. (2019).
12. Indicator scores are excluded is they do not have empirical data or less than 3 expert surveys. It is important to note, that these indicators are still included in the final report, as highlighting these data gaps can drive future research in these risk areas.
13. For more information on index weighting see Salvatore Greco, Alessio Ishizaka, Menelaos Tasiou, Gianpiero Torrisi, "On the Methodological Framework of Composite Indices: A Review of the Issues of Weighting, Aggregation, and Robustness," *Social Indicators Research* 141, no. 1 (2019): 61–94.



海洋委員會
Ocean Affairs Council

REGIONAL CONFERENCE AND POLICY DIALOGUE ON

"BLUE ECONOMY, OCEAN TOURISM, AND SUSTAINABLE BLUE FINANCING"

Blue Economy and Sustainable Ocean Development

Deputy Minister

Ching Ta (Ted) Chuang PH.D.



Ocean Affairs Council

Outline

Ocean Affairs Council

EU Blue Growth

Ocean Affairs Council

1 Introduction of Ocean Affairs Council

The ocean is the gateway to the world, and we hold the rudder that navigates across its blue vastness.

Introduction of Ocean Affairs Council

Ocean Affairs Council

The Ocean Affairs Council, the first and only cabinet-level agency located at Kaohsiung which is an ocean city, was established on April 28th,2018.

Introduction of Ocean Affairs Council

Ocean Affairs Council

Organization

Ocean Affairs Council
OAC

- Department of Planning
- Department of Marine Resources
- Department of Maritime Security
- Department of Science, Technology, Culture and Education
- Department of International Development

Coast Guard Administration
C.G.A
Conduct matters related to waters and coasts guarding

Ocean Conservation Administration
O.C.A
Conserving marine resources and ecology via sustainable management

National Academy of Marine Research
N.A.M.R
Research on marine policy、resources、science、industry, and cultivation of talents.

Introduction of Ocean Affairs Council

Ocean Affairs Council

- The Ocean Basic Act, an important guideline for Taiwan's ocean affairs, was adopted by the Legislative Yuan on the 1st of November 2019, and was announced by the President on the 20th in the same month.
- In response to World Oceans Day, June 8th is designated as National Ocean Day

Introduction of Ocean Affairs Council

Ocean Affairs Council

Department of Planning
National Ocean policies arrangement and implementation

Department of Marine Resources
Marine biological resources management and conservation

Department of Maritime Security
Marine and coastal security

Department of Science, Technology , Culture and Education
National ocean education policies、cultural affairs 、Marine technology

Department of International Development
Foreign ocean affairs cooperation and exchange

Introduction of Ocean Affairs Council

Ocean Affairs Council

Vision

Ecology Sustainability	Maritime Security	Industry Prosperity

Acts

Marine Conservation Law	Ocean Governance Law	Marine Industry Development Law

2 The Sustainable Development Goals for Marine in Taiwan

The ocean is a treasure trove of human food resources

The Sustainable Development Goals for Marine in Taiwan

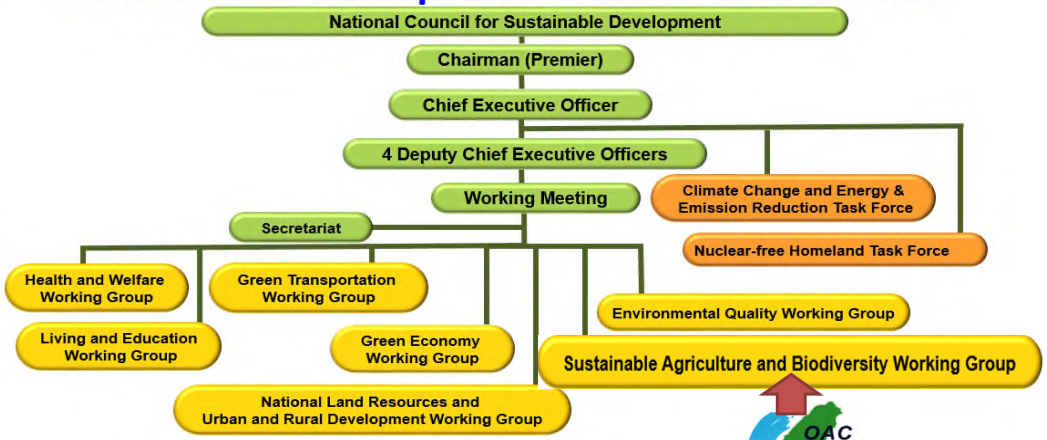
Taiwan‘s Marine-related targets are clearly listed in the sustainable development goals (SDGs), and the indicators will be reviewed annually. The SDGs 14th goal is one of the top guidelines for Taiwan’s ocean policy.

14.1	Reduce to marine pollution
14.2	Protect and restore ecosystems
14.3	Reduce ocean acidification
14.4	Sustainable fishing
14.5	Conserve coastal and marine areas
14.6	End subsidies contributing to overfishing
14.7	Increase the economic benefits from sustainable use of marine resources
14.A	Increase scientific knowledge, research and technology for ocean health
14.B	Support small scale fishers
14.C	Implement and enforce international sea law

The Sustainable Development Goals for Marine in Taiwan

In response to the UN's 2015 Sustainable Development Goals (SDGs), Taiwan announced its National Sustainable Development Goals in December 2018 with 18 goals in total.

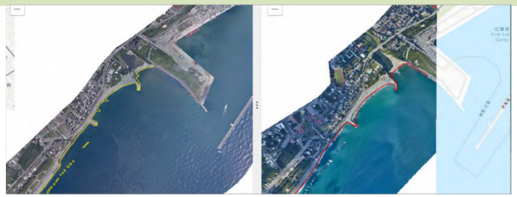
Formulation and Implementation of Taiwan SDGs



The Sustainable Development Goals for Marine in Taiwan—Goal 14.5

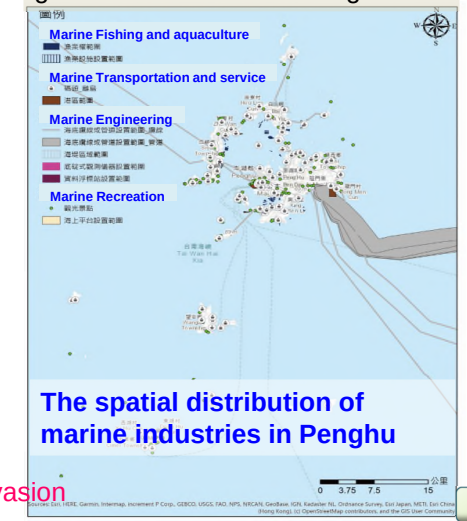
Conserve coastal and marine areas--
The effects and impacts of marine usage by Climate Change

- Local case study in Penghu (the county consist of 90 small islands and islets), in order to realize how the society can adapt its uses and policies.
- Through mapping tool --**The most impact on aquaculture and recreation**.



Comparison of current and predicted future invasion

Investigated maritime plans to governance and risk management



The spatial distribution of marine industries in Penghu

The Sustainable Development Goals for Marine in Taiwan—Goal 14.7

Ocean Affairs Council

Sustainable use of marine resources-- E platform

Ocean Affairs Council

3 “Blue Economy” : Goal & Development

“Blue Economy” : Goal & Development

Ocean Affairs Council

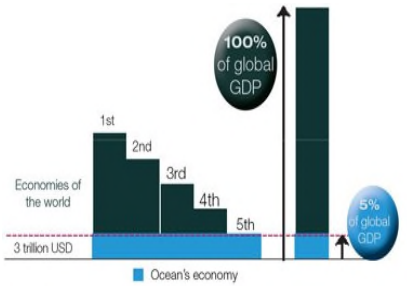
The Blue Economy, an economic model that employs green infrastructure, technologies and practices, innovative financing mechanisms and proactive institutional arrangements for meeting the twin goals of protecting coasts and oceans.

Source: http://http://www.oecd.org/innovation/inno/ocean-economy/

“Blue Economy” : Goal & Development

Ocean Affairs Council

- Since1990s, the GDP contribution of world ‘s marine economy has grown rapidly. Accounting about 5% of global GDP and is expected to grow at an average of 3% rate annually.

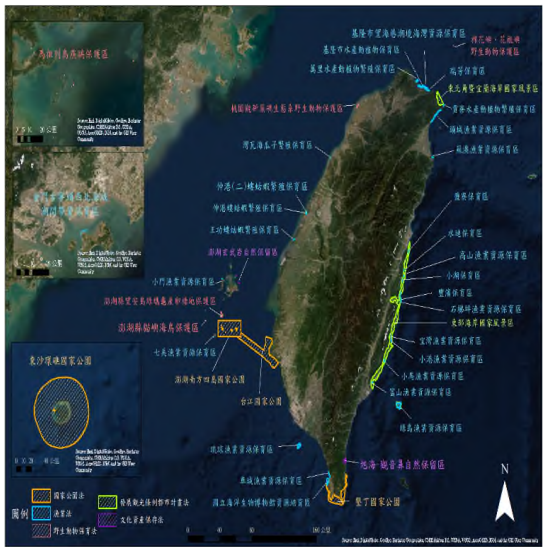


- Taiwan marine industries annual output was about 20 billion (USD) , accounted for 3.3% GDP contributions (2018). In compliance with the 2030 SDGs, the Taiwan Ocean Plan (TOP) focus on 5.0% GDP contributions.

4 Marine Conservation in Taiwan

Ocean is “the mother of all creatures” and “the cradle of life”.

41 MPAs in Taiwan



Types of MPAs	Laws & Regulations
Major Wildlife Habitats	Wildlife Conservation Act
Marine National Park Zones	National Park Law
Fisheries Resources Conservation Areas	Fisheries Act
Nature Reserves	Cultural Heritage Preservation Act
National Scenic Area-Marine Resources Protection Areas	Urban Planning Law

Apply before Construction

- Meeting participation
- EIA report commitments
- MMO expert training

Observe during Construction

- SOP for observing
- Suggestion for construction
- Mitigation measures

Report after Construction

- Data analysis & sharing
- Data use
- Case evaluation

Friendly Whale Watching

Monitoring & Survey of Marine Biodiversity

Friendly Angling Activities

- Encouraging reports of angling results
- Demonstration zone for friendly angling activities (Taichung port)

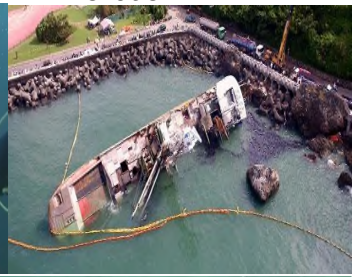
Salute the sea

Salute the sea (for marine debris)

Remove Floating Garbage

Remove Undersea Garbage

Prevention and Monitoring of Oil Pollution



Visual survey

- Citizen scientists training
- Collaboration with Coast Guard

Technology

- UAV & Satellite survey
- Dongsha marine debris survey and modeling in July 2019

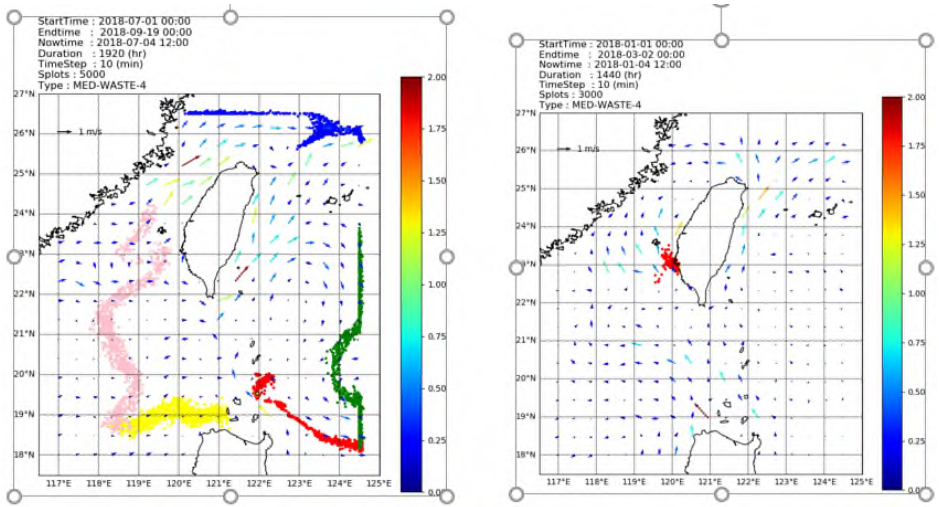
Microplastic

- Cooperation with the NGO to survey the south-west coastal water in June 2019

Scientific & Technology Research for Marine Debris

20 June, 2019 5pm @ Sihcao Bridge, An Ping , Tainan

Prediction of Marine Debris Trend



Using Meteo-Ocean Data and Monte Carlo Particle Tracking Method

5 Marine Industries Development in Taiwan

The 21st century is the century of the ocean

- Output Value：create about 13,500 million U.S. dollars in Taiwan.
- Taiwa“Taiwan Shipbuilding Corp” is one of the world’s top 20 shipyards; who built the “Burmah Endeavour” the 2nd largest oil ship in 1980s.

Container terminal in Kaohsiung

Taiwan Shipbuilding Corp in Kaohsiung

Marine Industries Development in Taiwan: 1. Marine Transportation Industry - recreation

Ocean Affairs Council

- In 2019, WEF reported that, the Travel & Tourism Competitiveness Index (TTCI) of Taiwan ranked the 37th among the 140 countries.
- According to surveys, passengers who travel to Taiwan by cruise spend an average of $ 100 per person per day. With an estimated one million passengers a year, cruise passengers create **about 100 million U.S. dollars** in tourism output per year.

Source: Keelung Harbor Co.

Travel → Tour → Recreation → Vacation

Evolution Theory of Recreation

Marine Industries Development in Taiwan: 2. Taiwan Yacht Industry

Ocean Affairs Council

Taiwan is ranked fourth globally on mega yachts' orders in 2018.

The biggest yacht market in the world are Europe and USA.
Italy, Netherland and Turkey are top three countries in yacht building.
Taiwan is ranked first in Asia.

▼ **2018 Top 5 Globally on mega yachts' order**

Ranking	Country	Total Length (ft)	Average Length (ft)	Orders
1	Italy	42,461	120	353
2	Netherland	13,038	201	65
3	Turkey	11,791	157	75
4	Taiwan	5,919	97	61
5	UK	5,531	101	55

Major construction base
Kaohsiung City

Marine Industries Development in Taiwan: 3. Fisheries

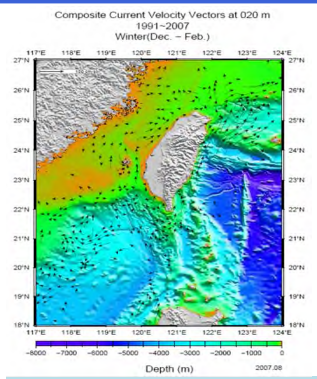
Ocean Affairs Council

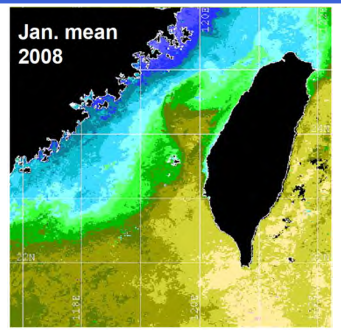
- **Industrial types:**
  Marine fishing, Aquaculture, Aquatic product processing, Fishing gear manufacture.
- **Far-sea fishing :**
  account for about 60% of the total fishery yields; Fishing vessels: > 2,000; Participate in "26 States Bilateral Fisheries Cooperation", one of top six high-sea fishing states.
- **Aquaculture:Change to intensive :**
  since 1971 as successful development of the artificial feed and breeding techniques. Aquaculture species: Taiwan Tilapia, Grouper, Milkfish etc.

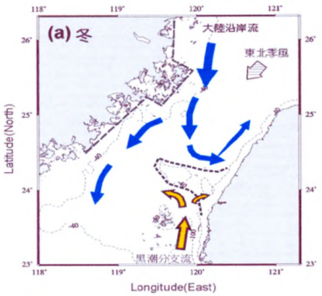
Monitoring, Control and Surveillance

Marine Industries Development in Taiwan: 3. Fisheries(Effects of climate change on marine capture fisheries)

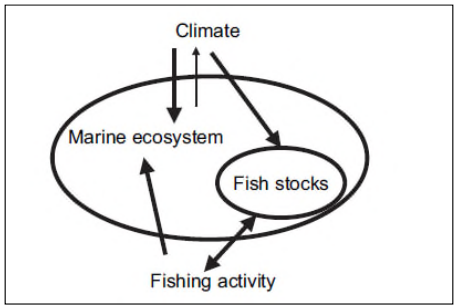
Ocean Affairs Council







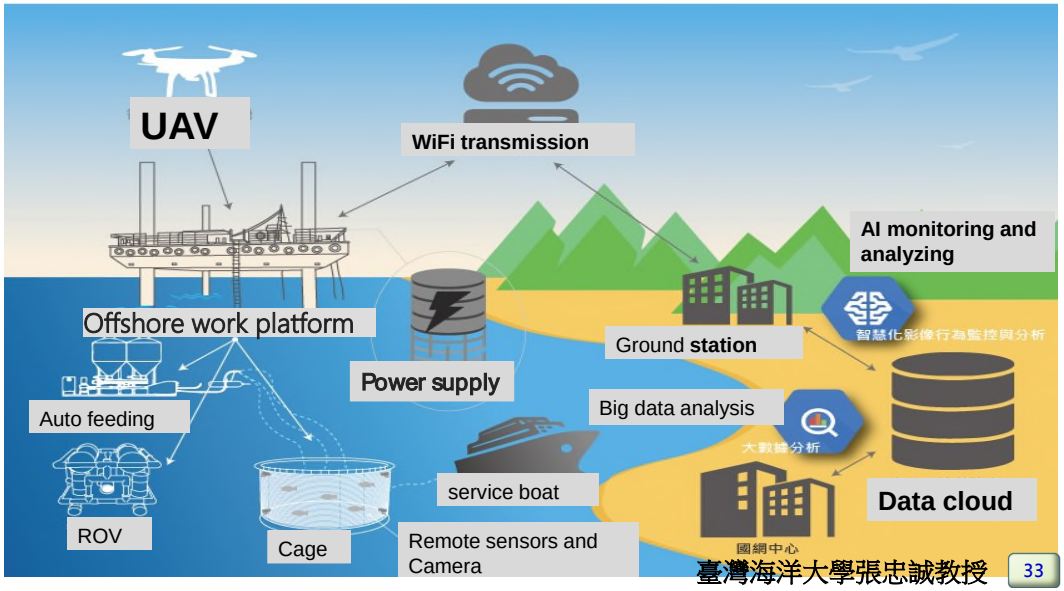
Short run (Direct effect):
sea-level rise
sea temperature change
lower ocean pH levels
changes in rainfall .
Longer-run (indirect effect)
all marine ecosystems, Ex: shift trophic level



Marine Industries Development in Taiwan: 3. Fisheries(Artificial Intelligence)

Ocean Affairs Council

How can AI be Applying to Cage Aquaculture?



臺灣海洋大學張忠誠教授

Marine Industries Development in Taiwan: 4. Marine Tourism

Ocean Affairs Council

➢ **Industrial types:**

Recreational fisheries, fishing village cuisine, water sports, seaside activities, recreational vessels, ocean parks, interaction with marine life (Whale-dolphin watching), etc.

➢ **2020-Taiwan Sustainable Tourism Development Plan:**

- **Innovation and sustainability, creating a happy industry.**
- **Diversified development, creating value-added tourism experiences.**
- **Safety, security and tourism social responsibility.**

Marine Industries Development in Taiwan: 5. Strategies of Offshore Wind Power in Taiwan

Ocean Affairs Council

•Principles of Development

➢Land before offshore;

➢Demonstration before implementation;

➢Shallow before deep sea.

•Promoting strategies

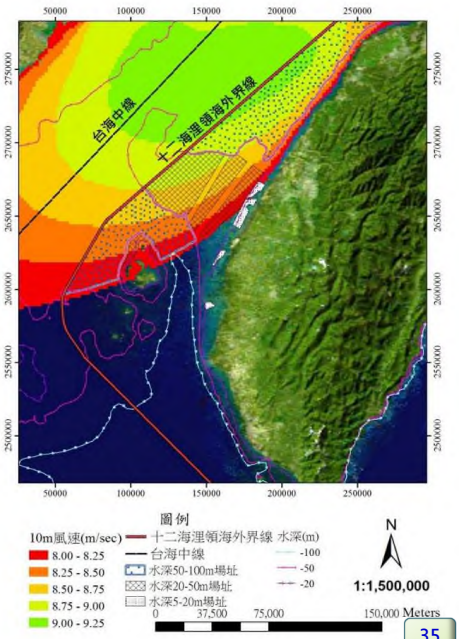
➢**Land:**

Develop the best wind farm before the secondary wind farm. (1.2 GW by 2025)

➢**Offshore:**

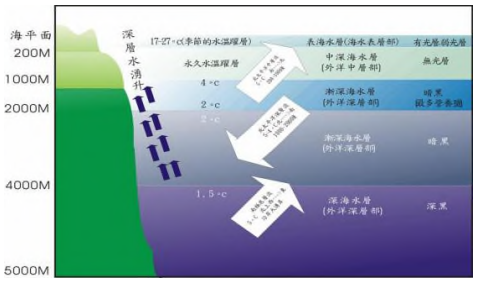
1.Establish the demonstrated wind farms in the shallow sea (depth within 20 m). Target: finish 3 GW installed capacity by 2025.

2.Block development , then large scale implementation, and extend to the deep sea area.



Marine Industries Development in Taiwan: 6. Deep Sea Water Industry

Ocean Affairs Council



- "Policy Programme of the Deep Sea Water (DSW) Utilization and Industrial Development", Taiwan, 2005;
- Special and ideal position: Kuroshio current;
- Applied to drinking water, cosmetics, and ocean temperature differential power generation;

Deep Seawater Garden in Taiwan

Applied to recreation & medical treatment

Marine Industries Development in Taiwan: 7. Circular Economy

Ocean Affairs Council

Reduce	Reuse	Recycle
Restriction on uses of plastic material – Announced and implemented on 9 June, 2006	Reuse items – Reuse containers	Recycle – Recycling Chain of Wasted Fishing Net
Decomposable plastic bag	– Reuse shopping bags	– PET Bottle Recycling Product

Ocean Affairs Council

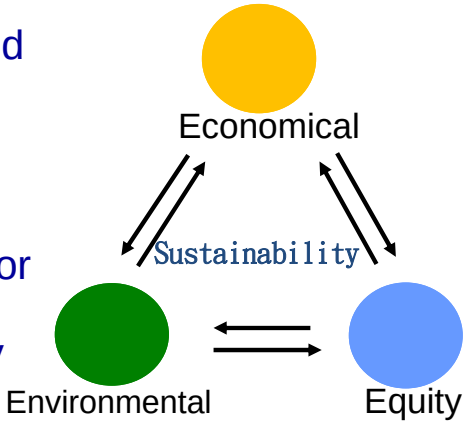
OUR OCEANS OUR FUTURE

6 Conclusion

Ocean Affairs Council

Blue Economy, Sustainable Taiwan

- Building a quality ocean country following the 3E principles.
- Achieving the 2030 SDGs, and setting the14th goal as top guidelines for Taiwan's ocean policy.
- Following international ocean laws and making related Acts for ocean governance.
- Improving the marine industry output value by 5% of GDP contributions by 2030.



Proposing Regulatory Driven *Blue Finance* Mechanism for Blue Economy Development

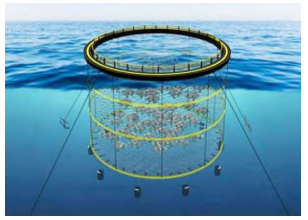
Nagisa Yoshioka (OPRI-SPF),
Hsing Hao Wu (NUK), Michael C. Huang (OPRI-SPF)

SASAKAWA PEACE FOUNDATION OPRI THE OCEAN POLICY RESEARCH INSTITUTE

Greening the Ocean => *Blue Economy*

Industry sustainability & Environment

- External costs of marine industries
- Dependence on healthy environment (eg. Tourism in SIDS)



Growth in existing marine industries

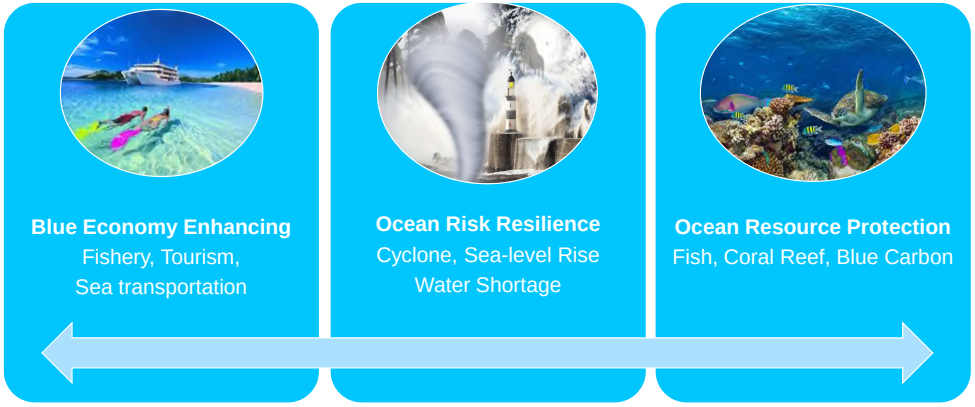
- Stronger rates of growth than land based industries
- "Blue growth"

New Marine Industries and Innovation

- Potential for new jobs and competitive advantage

How to mobilize the money for ocean preservation and sustainable development?

Scope of Blue Finance



Seychelles Government

“Blue Bond” for 15 million USD (2018)

Utilize the financial resource from blue bond to support fishery by improving the vassal and assist government strengthen commitment for environment by reinforcement of IUU regulation, private sector and international cooperation toward sustainable ocean governance.

- Understand financial needs & market condition,
- Identify the need for a guarantee
- Donation to cover transaction costs
- Find investment banks and trustee to collaborate with Global Environment Facility

Seychelles

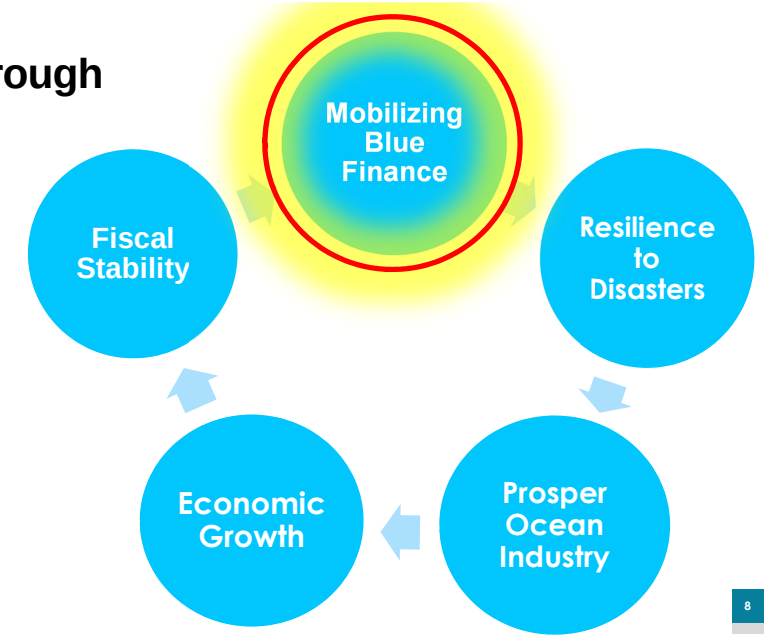
Population	96,762
GDP	1.59 bil. USD
GNI/capita	15,600 USD
Economic growth	3.6% (2018)

Source: World Bank

Blue & Green Bond

	Seychelles Blue Bond	Fiji Green Bond
Issued Year	2018	2017
Issuer	Government (+WB, GEF)	Government
Total Amount	15 million USD	40 million FJD (18.8 million USD)
Maturity	10 Years	5 years/ 13 years
Coupon Rate	6.5%	4.0% / 6.3%
Purpose	expansion of marine protected areas, improved governance of priority fisheries, and development of blue economy	renewable energy, waste management, resource conservation, and disaster resilience etc…

Circulating through Blue Finance



Year	Issuance	Feature
2007	EURO 600 million	European Investment bank issues a Climate Awareness Bond targeting energy sectors
2008	USD 440 million (equivalent – issuance in Swedish krona)	First green labeled green bond, issued by the World Bank
2012	USD 2.6 billion	Green bond issuance picks off
2014	USD 36.6 billion	Green bond principles – voluntary guidelines formed
2017	USD 155 billion	Green bond issuances – predominantly energy sector
2018*	USD 167.6 billion	

From *Green* to *Blue*

Bond	Objective	Size/ Duration	Investors	Key Terms
Seychelles Blue Bond	Transition support to sustainable fisheries	USD 15mn; 10 years	World Bank; Private Placement: Calvert Impact Capital; Nuveen, and Prudential	Loan provided by GEF reduced interest rate for government from 6.5% to 2.8%
Nordic-Baltic Blue Bond	Bond issuance focus on investments within water resource management and protection	USD 213mn; 5yrs	Capital Market	0.375% coupon

Source: Climate Bond Initiative, Dr Raghu Dharmapuri Tirumala, University of Melbourne

ADB OCEANS FINANCING INITIATIVE

ACCELERATING BLUE INVESTMENTS IN ASIA AND THE PACIFIC

ADB

The **Oceans Financing Initiative** supports ADB developing member countries to catalyze financing for projects that will help protect and restore marine ecosystems and promote sustainable blue economies. The initiative will leverage public sector funds to create investment opportunities able to attract financing from a range of sources, including the private sector. Technical assistance and funds from ADB and donors, along with innovative financing instruments such as revenue guarantees and credit-enhanced blue bonds, will be used to reduce project risks and make them "bankable". ADB will work with development and financing partners from around the world to accelerate the investment needed to meet the Sustainable Development Goals, including SDG 14: Life Below Water.

OUR APPROACH

Supporting countries to develop bankable investment opportunities in ocean health and the blue economy.

Blue finance frameworks
Developing detailed principles, criteria, and indicators for selecting projects and measuring impacts.

Bankable projects
Working with governments and other partners to develop innovative and bankable projects.

Innovative instruments
Supporting the development of financing mechanisms that reduce investment risks, such as blue bonds, blue credits for avoided cost, and first loss guarantees.

Access to funds
Increasing access to funds from ADB, development partners, donors, and the private sector.

FOCUS AREAS

The Oceans Financing Initiative is aligned with ADB's Action Plan for Healthy Oceans and Sustainable Blue Economies, which aims to expand ADB investments and technical assistance to $5 billion between 2019 and 2024 to promote ocean health and the blue economy.

Blue Economy
Creating inclusive livelihood and business opportunities in sustainable tourism and fisheries.

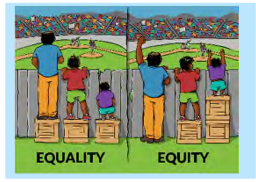
Ecosystem Management
Protecting and restoring coastal and marine ecosystems and key rivers.

Pollution Control
Reducing land-based sources of marine pollution including plastics, wastewater, and agricultural runoff.

Sustainable Infrastructure
Improving sustainability in port and coastal infrastructure development.

Environmental Sustainability

Economic Sustainability



Social Sustainability

Developing states:

- Self-dependent for economic growth
- Invest in disaster reduction and resilience
- Require fund for better infrastructure Investments
- Commitment on environmental preservation for support (Coral reef, IUU fishery elimination, coastal management)

Not to be profitable in the short run…

NGOs, think tanks and IGOs

- Call for global partnership
- Demand for commitments from all states
- Advocate for environmental preservation project
- Review and evaluate on commitments and support program
- Evidence-base research

Development banks & global funds:

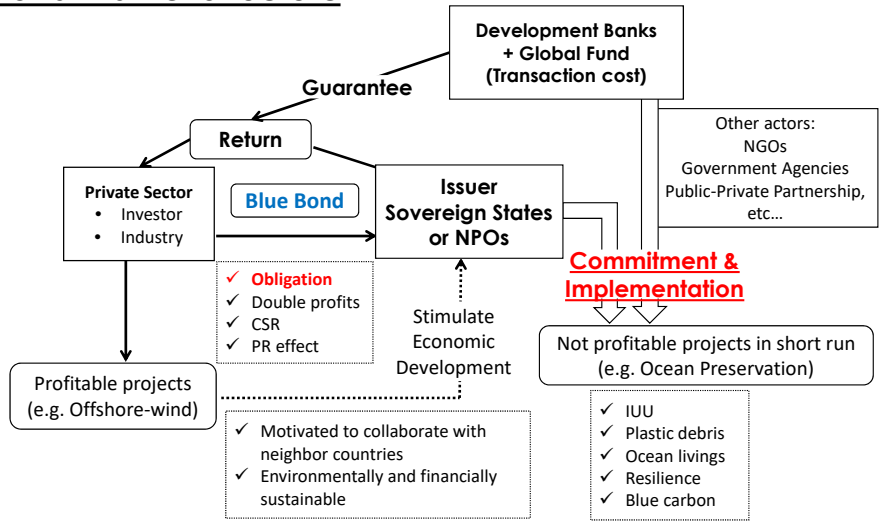
- Reduce poverty and support development projects
- Provide incentive for developing states to make commitment
- Encourage global collaboration

UNDP gef THE WORLD BANK ADB ASIAN DEVELOPMENT BANK

Private sectors & industries:

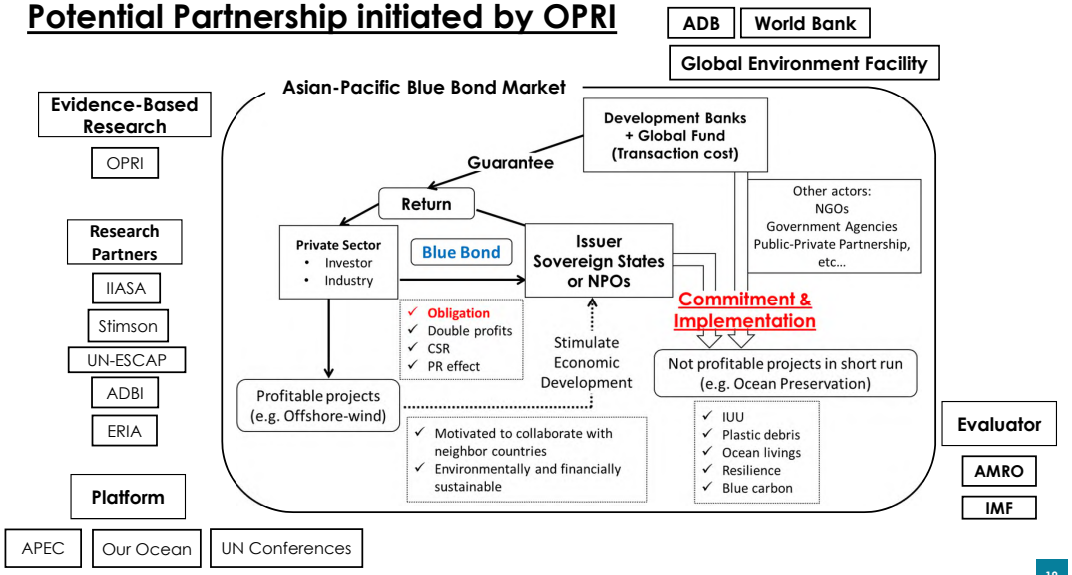
- Invest in potential profitable development project
- Provide better equity to shareholders
- Contribute social responsibility to environment compensation

Blue Bond Market Structure



Source: Huang, Wu, Yoshioka, Tanaka, OPRI-SPF

Potential Partnership initiated by OPRI



Pacific Ocean Finance Conference (11-15 Nov 2019)

Fiji delegate Apisalome Movono

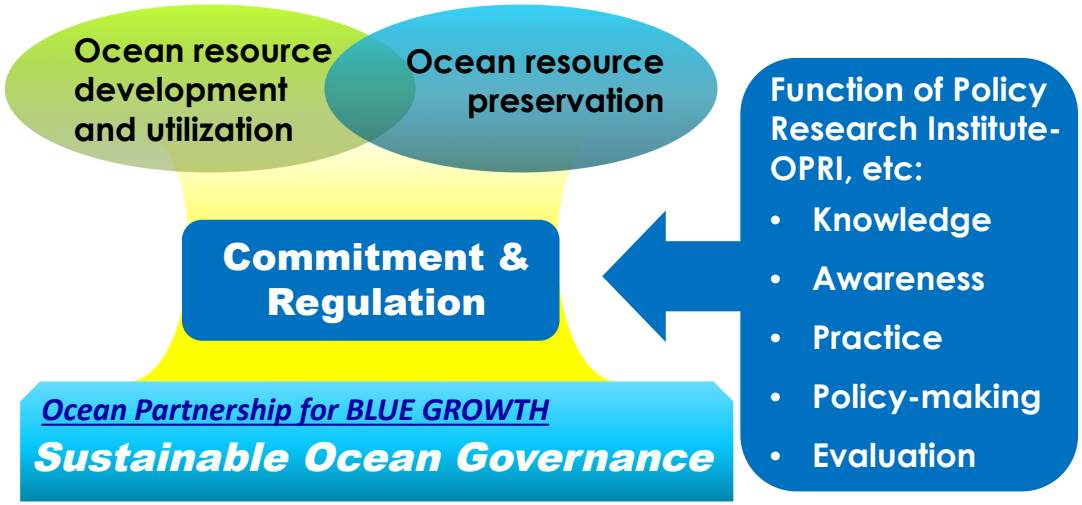
- Missing ***link to our conservation efforts*** and efforts to protect the oceans for future generations.

Tuvalu delegate Fa'aui-Ekapale Telii

- There's very little that's been provided for ***effective management of ocean health and governance***.

Palau's delegate Fleming Umiich Sengebau

- Great opportunity for SIDS to ***share lessons learned in our own respective countries.***
- More importantly, how we can ***bring those resources to bear and really help our countries move forward***.



SPF OPRI

Thank You. www.spf.org/en/opri/

THE UNIVERSITY OF MELBOURNE

Blue Finance Accelerator

Dr. Raghu Dharmapuri Tirumala
Senior Lecturer
Faculty of Architecture, Building and Planning

Introduction

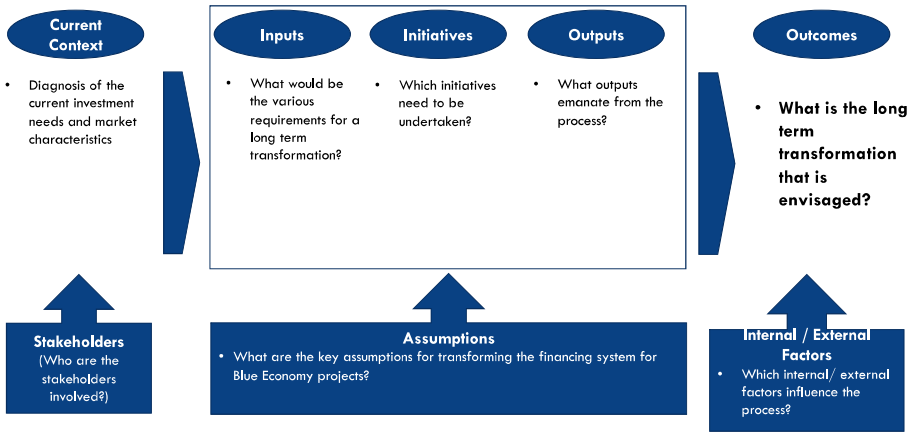
- Sustainable Development Goal 14 - deals with life below water.
- Many countries have indicated their intention to curtail the ocean pollution, evident through their articulation of nationally determined contributions under the Paris Agreement and the Aichi targets (part of the Convention on Biological Diversity).
- The conventional funding sources that underpin the commitments include the official development assistance and public budgets (Wabnitz and Blasiak 2019; McManus et al. 2019).
- Newer sources have emerged in the recent past that includes philanthropic grants (Mallin et al. 2019; Guggisberg 2018; Vanderklift et al. 2019).
- The avenues available under the green finance are sought to be utilized for funding the blue economy, however the past trends of green finance indicates that water related sectors did not manage to raise substantial sums (Climate Bonds Initiative 2019).

Aim of Research

- How do the recent blue investment instruments (blue bonds) compare with the investment needs?
- What are the policy recommendations for accelerating blue economy investments?

This research uses 'Theory of Change' or ToC ex-ante to systematically generate a picture of transformation through a series of change initiatives.

ToC Steps



International Initiatives … 1

- The 21st Conference of the Parties of the United Nations Conference on Climate Change, held in June 2017, resulted in including “Ocean” in the Paris Agreement and paved the way for subsequent Global Climate Action Agenda.
- The Paris Agreement requires all Parties to put forward their best efforts through “Nationally Determined Contributions” (NDCs) in responding to the threat of climate change. Parties need to report regularly on their emissions and implementation plans.
- UNFCCC has a system in place for measuring, transparency and verification.
- The Ocean and Climate Initiatives Alliance (OCIA) gives emphasis to the need for cooperation and unity in achieving greater impact for Ocean and Climate Action.
- In order to mitigate the declining ocean health, numerous commitments and initiatives have been taken by nations, within the Rio + 20 outcome document, and through their nationally determined contributions.

International Initiatives … 2

S No.	Entity	Blue Economy Initiative
1	Asian Development Bank (ADB)	ADB launched the “Action Plan for Healthy Oceans and Sustainable Blue Economies for the Asia and Pacific region” in May 2019. The action plan will provide financing and technical assistance for ocean health and marine economy projects to USD 5 billion from 2019 to 2024.
2	The World Bank	The World Bank’s Blue Economy Program, PROBLUE was launched in September 2018, to support integrated and sustainable economic development in healthy oceans. “PROBLUE focusses on four key themes: • the management of fisheries and aquaculture • the threats posed to ocean health by marine pollution, including litter and plastics • the sustainable development of key oceanic sectors such as tourism, maritime transport and off-shore renewable energy • building the capacity of governments to manage their marine and coastal resources in an integrated fashion to deliver more and long-lasting benefits to countries and communities.”
3	United Nations Environment Programme (UNEP)	UNEP has drafted a new “Marine and Coastal Strategy of UN Environment Programme for 2020-2030”. The strategy sets out the guiding principles for sustainable ocean actions and emphasizes “four key objectives and core outputs. • Establish knowledge-base on marine and coastal ecosystems to inform policy actions • Build circularity in economies and promote sustainable approaches to address marine pollution • Support policies and strategies enabling integrated management and sustainable use of marine and coastal ecosystem services. • Innovate financing instruments and initiatives facilitating sustainable blue economy transition.”
4	United Nations Conference on Trade and Development (UNCTAD)	“UNCTAD is supporting developing countries to identify opportunities and challenges in the ocean economy. It supports national trade and other competent authorities to design and create an enabling policy and regulatory environment that promotes the development and emergence of sustainable oceans economic sectors through the definition and implementation of national and regional oceans economy and trade strategies.”
5	European Union (EU)	“In 2012, the EU proposed the “Blue Growth” strategy, specifying that Blue Growth will be the core of marine policies and stating clearly key development areas and specific measures for the future. Blue Growth Strategy has launched initiatives in many policy areas related to Europe’s oceans, seas and coasts, facilitating the cooperation between maritime business and public authorities across borders and sectors, and stakeholders to ensure the sustainability of the marine environment. In 2017, the EU issued the Report on the Blue Growth Strategy Toward More Sustainable Growth and Jobs in the Blue Economy. Five aspects described in the report are: • Pushing for growth in five focus areas - including blue energy, aquaculture, coastal and maritime tourism, blue biotechnology, sea bed mineral resources; • The benefits of marine data, spatial planning and maritime surveillance to facilitate growth in the blue economy; • Promoting a partnership approach; • Boosting investment; and • Making blue growth strategy fit future challenge.”

Much more needs to be done…

- As part of the Ocean Conference and the nationally determined contributions, nearly 1400 voluntary commitments have been made (Wabnitz and Blasiak 2019), about 70% of those had marine related aspects (Gallo, Victor, and Levin 2017).
- However, the importance ascribed to SDG 14 is relatively lower (Singh et al. 2018), while the official development assistance to the marine sector have reduced more than 30% between 2010 and 2015 (Blasiak and Wabnitz 2018).
- The inadequacy of conservation funding is widely prevalent (Bos, Pressey, and Stoeckl 2015) partly due to the reason that the project revenue models for most of marine conservation projects depend on monetisation of economic rewards and capture of enforcement fees and penalties (Fujita et al. 2013).
- The discourse on marine sustainability and urban pollution have been treated separately, though the integration is increasingly visible in the urban settlements (Elmqvist et al. 2015; Gómez-Baggethun et al. 2013), leading to development of interrelated project ideas, such as urban runoff and sustainable drainage systems (Depietri and McPhearson 2017).

Blue Economy Investment needs

- The estimates for ocean conservation funding are based on the United Nations Convention of Biological Diversity target of 20% of the ocean in the marine protected areas and are expected to be of the order of **USD 4 billion to USD 8 billion per annum** (Balmford and Whitten 2003).
- The same were subsequently revised to **USD 3 billion to USD 8 billion per annum for 10% of MPA coverage** (Ban and Klein 2009).
- Under UNFCCC, developed countries have committed to an annual USD 100 billion by 2020. Of the major funds established namely Least Developed Countries Fund, the Special Climate Change Fund, the Adaptation Fund, and the Green Climate Fund, an estimate by Guggisberg, indicates that **only 6% is in marine or coastal initiatives** (Guggisberg 2018).

Sources of Funds

- Conservation of ocean economy is funded through a variety of sources, the most common ones being official development assistance and grants (Bos, Pressey, and Stoeckl 2015).
- The funding availability is constrained by many factors including business and revenue uncertainties faced by the investors, legal and regulatory challenges (relating to property rights, policy certainty over the project life) (Vanderklift et al. 2019).
- The gap in conservation funding is quite significant and needs a combination of different sources to bridge the same. While the study by McKinsey estimates the gap in financing to be the order of **USD 300 billion** (Davies et al. 2016), various researchers have estimated the same at a much higher magnitude of approximately **USD 7 trillion** (Trucost 2013; Mallin et al. 2019; Bos, Pressey, and Stoeckl 2015).
- The blue economy projects have received very marginal share of available conventional and green sources (Vanderklift et al. 2019). There have been arguments to increase the share of private capital markets and for more innovative financial instruments (Wabnitz and Blasiak 2019).
- Bonds specifically for ocean related activities have been launched in the recent past. The deployment of such funds is sought across a diverse range of marine economy initiatives such as stakeholder capacity building and infrastructure projects (Macfadyen, Huntington, and Cappell 2018).

Blue Bond Initiatives

Bond	Objective	Size/ Duration	Investors	Key Terms
Seychelles Blue Bond	Transition support to sustainable fisheries	USD 15mn; 10 years	World Bank; Private Placement: Calvert Impact Capital; Nuveen, and Prudential	Loan provided by GEF reduced interest rate for government from 6.5% to 2.8%
Nordic-Baltic Blue Bond	Bond issuance focus on investments within water resource management and protection	USD 213mn; 5yrs	Capital Market	0.375% coupon

Recent Ocean Related Fund Activity

Fund	Objective	Size/ Duration	Investors	Key Terms
RARE's Meloy Fund	Incentivize the development and adoption of sustainable fisheries	USD 22Mn; 10-12 projects in 10 years	GEF; FMO (Dutch Development Bank); Impact Investors; the Jeremy and Hannelore Grantham Environmental Trust; Bloomberg Philanthropies; JPMorgan Chase	Equity and Debt; Looking at effective IRR of near 6%; debt at 10%.
Encourage Capital	Investing for sustaining global fisheries	USD 100Mn (hypothetical assumptions) across 6 blueprints	Private investors; grant foundations; multilaterals	5 – 35% equity returns; around 10 years
Althelia's Sustainable Ocean Fund (SOF)	Providing growth capital to companies that harness the ocean's natural capital	USD 100Mn across 10 -15 investments	Conservation International; Environmental Defense Fund	Duration of 8-10 years with annual coupon
Circulate Capital	Protecting South & Southeast Asia from plastic waste	Aim USD 5Bn • USD100mn equity commitments from private corporations • USD35mn guarantee secured from USAID	PepsiCo, Procter & Gamble; Dow; Danone; Unilever, Coca-Cola	Aiming to unlock USD5.5bn in private financing

Summary of Blue Funds

- While the announced initiatives have a large initiative size, all the initiatives that have been launched have a typical size under USD 50 million, with an investment horizon of about 10 years.
- The deal sizes of each project are expected to be an average of USD 2 million. The return expectations are typically commercial with the targeted projects in fisheries and circular economy.
- The final beneficiary of most of these funds is a private sector developer. The funds are highly assisted/ structured products, which makes replicability a concern.
- The funds while expected to benefit the direct users, might not have a significant impact on the environment given these features and large investments needed.
- Blue bonds alone will not be able to solely bear the burden of scaling blue finance in the coming years. Rather, they are well-positioned to support certain kinds of projects, in certain development phases, and under certain market conditions.
- For a significant boost to the ocean health to be achieved, public sector projects focussed on conservation need to be simultaneously implemented.

Imperatives for accelerating ocean finance

- Various investment approaches and opportunities that are available (i.e., multilateral/ bilateral sources, market-based approach, incentives, regulations, etc.). need to be dovetailed for a cohesive development framework of the blue economy.
- The challenges faced for upscaling ocean economy investments include:
  - Generating a healthy pipeline of blue economy projects
  - lack of consistent source of concessional finance
  - limited capacity of the implementing authorities (to develop project pipelines and subsequently develop and implement in projects),
  - bankability concerns of the blue sector projects and
  - nascent customised instruments.

Features of Blue Economy Sectors

Sector	Features	Revenue Model
Fisheries and Aquaculture	Mostly private initiatives – with many small and a few large players – across geographies	Sale of processed / unprocessed produce. Incentives needed for sustainable fishing
Coastal and Marine Tourism	Cruises, hotels/ resorts	User Charges/ fees
Water Supply	Public Control	Not financially free standing. User fees covers a portion of costs. Significant funding support needed.
Environmental Protection	Public control Waste water treatment Water Body Cleaning	Not financially free standing. User fee only in FSM, covers costs partially.
Shipbuilding	Private Sector	Manufacturing, services
Ecosystem Conservation (Mangrove, coral reef)	Public Sector	Economic benefits, avoided costs, blue carbon financing, conservation financing
Chemical/ Pharmaceuticals	Private sector	Sale of products
Ports and Shipping	Public/ private sector	Sale of products/ services
Offshore Oil and Gas	Private Sector	Sale of produce – usually policy support only
Energy (marine renewable + Coastal wind/ solar/ tidal)	Private Sector	Sale of power – incentives for feed in tariff

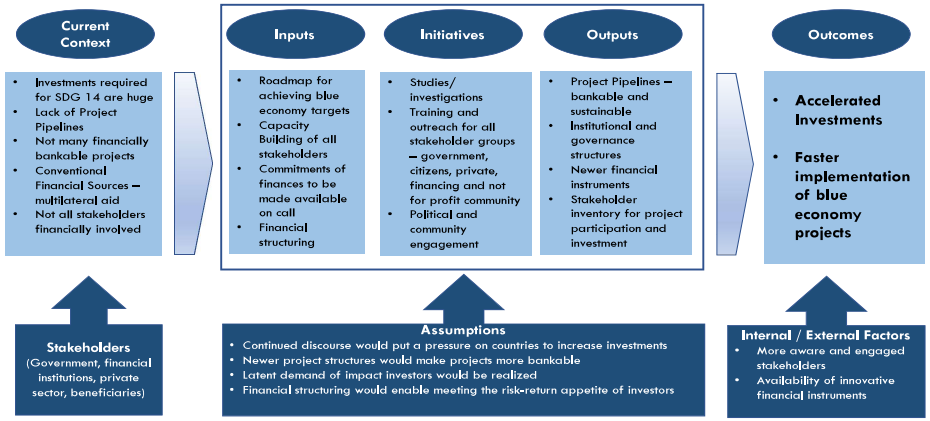
Drivers of the blue economy ...1

- Most environmental sectors need public funding support for construction and O&M of infrastructure.
- Need for Sustainable, long-term concessional and innovative financing structures (Thiele and Gerber 2017; Forrer et al. 2010).
- Need to provide substantial quantum of concessional finance across the spectrum of blue sectors to get the projects off the ground. While the projects that have sizeable revenue potential, would find support of private investment, the challenge would be those projects that have large economic benefits but very limited existing cash flow streams.
- The recent initiatives such as the ASEAN Catalytic Green Finance Facility have been able to substantially lower the cost of funds (below those offered by official development assistance). Similar bouquet of stakeholders, along with philanthropy sources can provide a sustainable source of low cost funds for ocean finance.
- The funds can then be used to provide capital expenditure and operations and maintenance related expenses, and could be used to underwrite or guarantee issuance of bonds by the project entities.

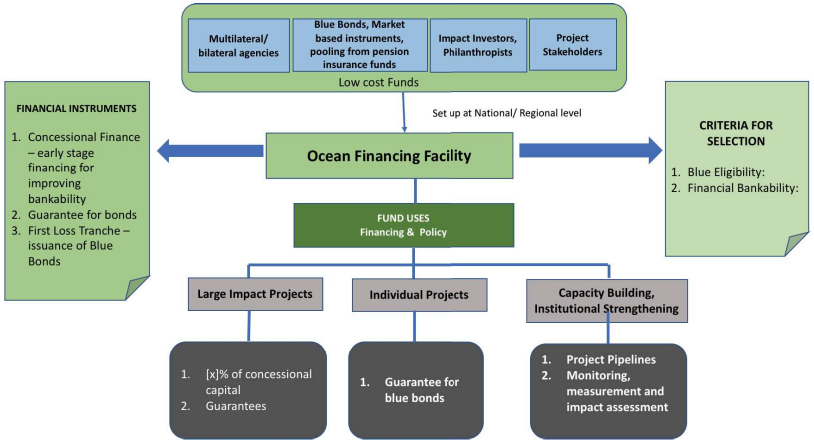
Drivers of the Blue Economy ...2

- Generating a healthy pipeline of blue economy projects that:
  - support a country's sustainable development goals while also being
  - well-structured and
  - bankable (or having the potential to be bankable).
- Scaling up conservation and development efforts will be challenging in the absence of addressing the pipeline challenge.
- Much of this work needs to happen at a national level and will be a critical part of creating the systematic "transformation" required to fully realize a sustainable blue economy (WEF 2019).
- Establishing routine processes in project evaluation is a way to increase efficiency in the selection process.
- A good due-diligence checklist for evaluating projects can help fund managers remove impractical ones from their pipelines early on to devote more time and money towards better ones.
- Project templates can accelerate the process of developing and structuring projects while helping investors avoid high-risk concepts.

ToC Constituents for Accelerating Blue Economy Investments



Framework for Accelerating Blue Economy Investments



Conclusion

- The current path of investment is not capable of addressing the magnitude of financing needs. One of the key challenges to mobilize private finance for addressing the blue economy challenge is to reduce/share the risks of private actors to invest or to raise their rates of return to a level that is acceptable to the market.
- Some of the clearest interventions include the role of multilateral development banks undertake include opening new markets for blue financing, assuming some risks, providing early stage finance and new technologies, and crowding-in private capital.
- Blended finance vehicles have a role to play, but more innovative structures like blue bonds, social impact bonds, as well as projects to tap regional capital markets need to be explored (Mehta et al. 2017).
- Establishing collaborations between stakeholders and getting influencers from the government to be at the forefront can help in developing a strong project pipeline in the blue economy. Education, public awareness and capacity development are crucial to have behaviour change or lasting transformational change and the governance needed in blue economy.

Conclusion

- Private sector involvement in blue economy is essential – from research to design, deployment, operation, and financing.
- Public and private partnership is important to move the blue economy forward.
- The various project phases will require different blending approaches. Blending solutions for the “construction” or riskier initial period will need to change for less risky funding required once the infrastructure project is completed. This would separate those forms of blended finance that would help with the riskiest phase (e.g., partial risk guarantees) from those that might help down the road (e.g., providing some first-loss protection on a pool of existing assets). As well as segmenting the blended finance, this fits with segmentation of the investors since some (e.g., many pension funds) would only consider operating assets anyway.

Thank you

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REGIONAL CONFERENCE AND POLICY DIALOGUE ON

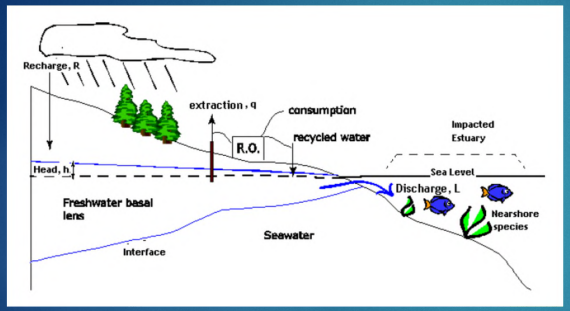
"BLUE ECONOMY, OCEAN TOURISM, AND SUSTAINABLE BLUE FINANCING"

25-27 FEBRUARY 2020, NADI, FIJI

Mountain-to-sea Ecological-resource Management: Forested watersheds, coastal aquifers, and groundwater-dependent ecosystems

SITTIDAJ PONGKIJVORASIN,
(FACULTY OF ECONOMICS, CHULALONGKORN UNIVERSITY)
CHRISTOPHER WADA, KIMBERLY BURNETT
(UHERO, UNIVERSITY OF HAWAII)

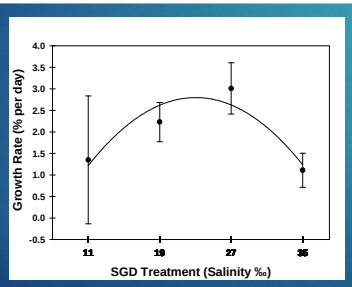
Aquifer - Nearshore resource

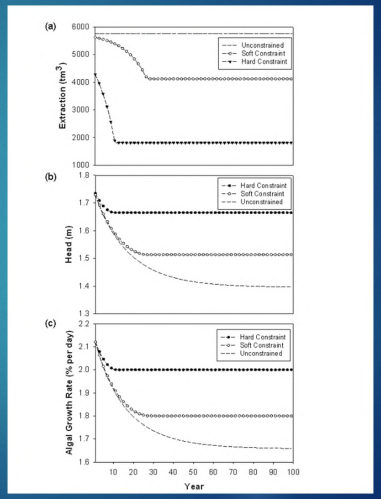


Aquifer - Nearshore resource

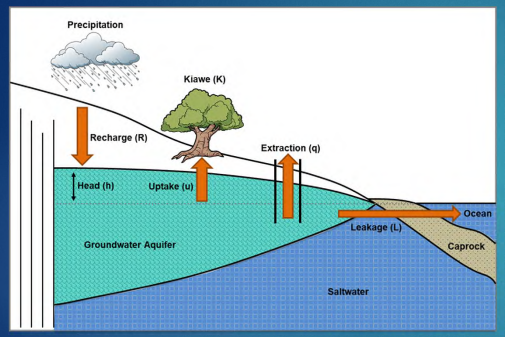
Table 1. Summary of Key Equations

Function	Equation
Aquifer state equation	$\dot{h} = 3.96 \times 10^{-6}(R - l - q)$
Discharge function	$l(h) = 4800h^2$
Unit cost of water extraction	$c = 0.00083\,(403.2 - h)$
Water demand	$P = 3.1 - 0.00048q$
Salinity level	$s = 36 - 0.00033l$
Growth	$g = 10.2975 - (0.2625s)$



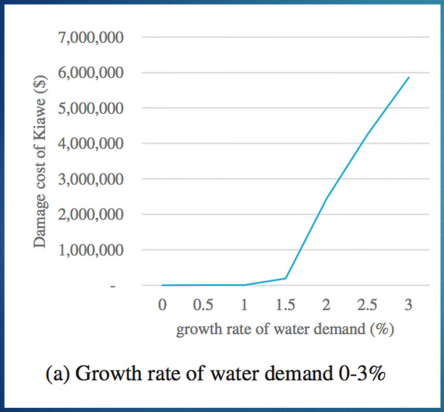


Invasive tree - Coastal aquifer



Photos courtesy of B. Dudley and F. Hughes, USDA Forest Service

Invasive tree - Coastal aquifer

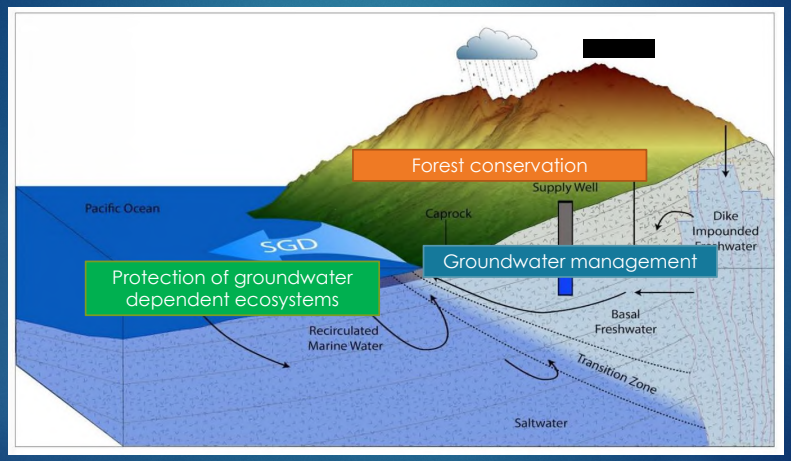


(a) Growth rate of water demand 0-3%

POLICY IMPLICATIONS

- The decision of whether to remove kiawe depends primarily on the growth in water demand and kiawe removal costs
- For example, when the cost of removal is around $100/ha, the entire kiawe stock should be removed from the outset if water demand is forecasted to grow faster than 1.45% per year

Mountain-to-sea management



Source: Bishop et al. (2015)

Watershed and Groundwater Recharge


Feral pig (*S. scrofa*)


Pig wallow


Strawberry guava (*P. cattleyanum*)


Himalayan ginger (*H. gardnerianum*)

Recharge Function

Recharge is a function of investment in conservation capital stock

Description	Equation
Recharge	$R(N_t) = 3992.7 + 0.172N_t - 0.000008N_t^2$
Conservation capital	$\dot{N}_t = I_t$

Aquifer Dynamics

Change in volume depends on inflows and outflows


R: recharge


I: leakage


q: extraction

Description	Equation
Aquifer state	$\dot{h}_t = (0.000049)(R(N_t) - l(h_t) - q_t)$

Groundwater-dependent Ecosystems

Algae growth depends on salinity, which depends on SGD, which

Description	Equation
Submarine groundwater discharge	$l(h_t) = 117.8h_t$
Nearshore salinity	$s_t = 36 - 0.00125l(h_t)$
Algae growth rate	$g_t = 10.2975 - 0.2625s_t$

Benefits and Costs

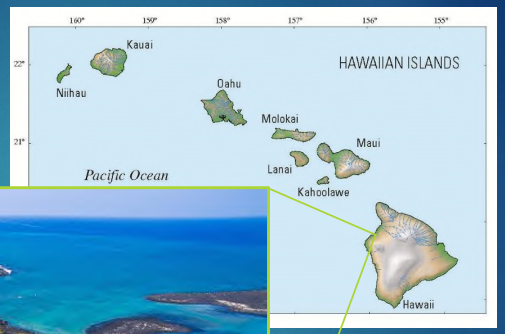
Description	Equation
Groundwater unit extraction cost	$c(h_t) = 0.00115(1322.82 - h_t)$
Present value unit fence cost	$c_f = 75$
Backstop (desalination) unit cost	$c_b = 7570$
Water demand	$p_t = 15.066 - 0.0086q_t$

Control variables: groundwater extraction, backstop, investment in fencing

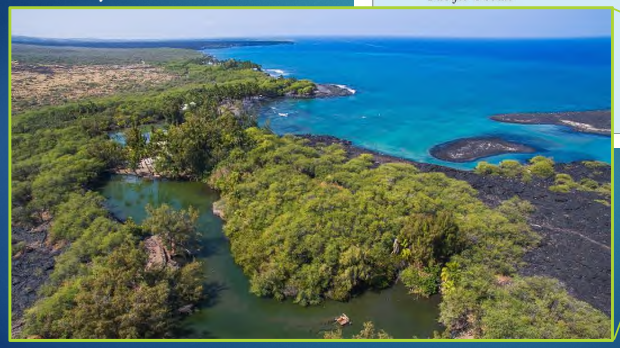
State variables: groundwater stock, fence stock

Constraints: minimum algae growth, standard non-negativity

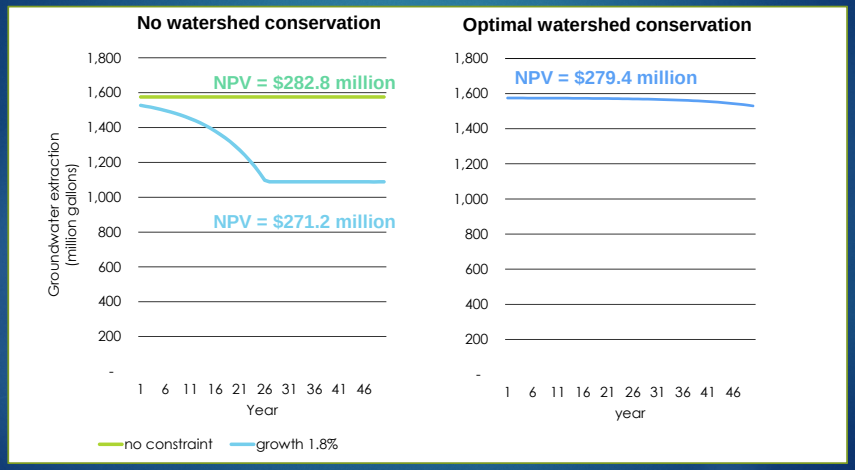
Study Site



Kīholo, Hawai'i Island



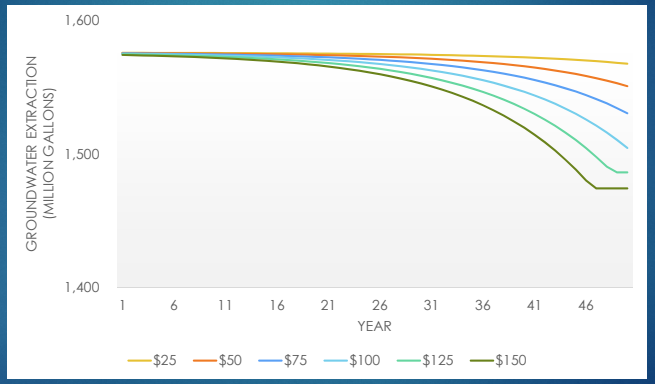
Key results:
Fencing partially offsets loss from GDE protection



Optimal fence size over range of costs and 1.8% growth constraint

Per-unit cost ($/ft/50-yr)	First-year installation size (acres)	NPV over 50 years (million $)
25	3,135	281.62
50	2,984	280.51
75	2,869	279.42
100	2,761	278.37
125	2,661	277.34
150	2,567	276.33
288	2,100	271.19
≥289	0	271.21
Benchmark no fence	0	271.21

Optimal extraction for range of fence costs



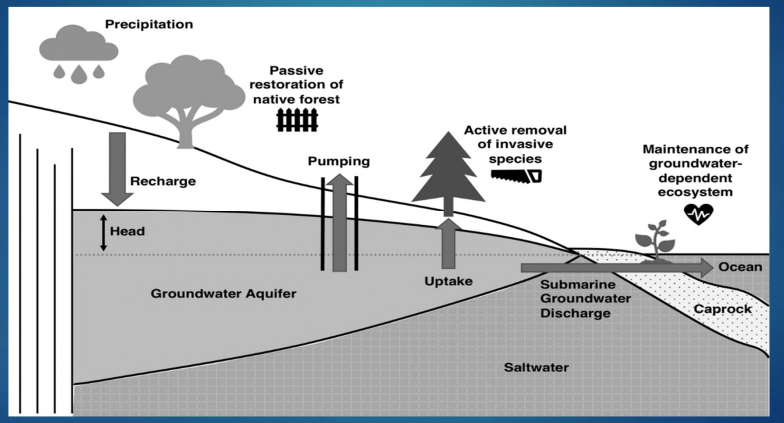
Summary of the Results

- Watershed conservation can be an effective tool to offset potential welfare losses resulting from imposition of safe minimum standard
- Partial fencing is always optimal, i.e. zero/max fencing are suboptimal
- Optimal investment increases as the desired level of GDE protection increases
- Optimal investment is lower when watershed conservation is more efficient at capturing recharge
- Optimal investment is higher when demand growth is higher

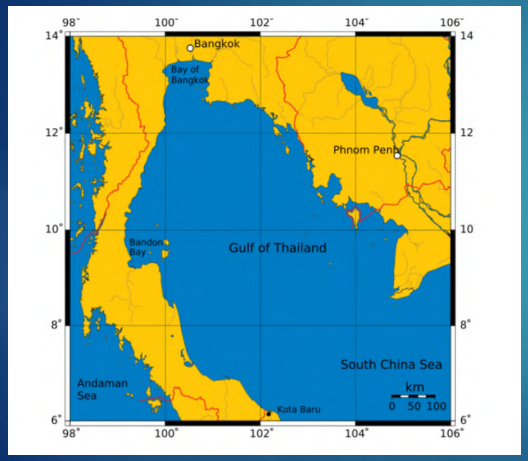
Messages to Policy-Maker

- Linkage between multiple resources are important in decision-making
- Environmental consideration might come with economic costs
- However, proper management can help offsetting loss from conservation
- Making decisions in an uncertain world, sensitivity analysis plays important roles in policy suggestions (e.g., on direction or robustness)

Some extensions



Other contexts



Land-use

Mangrove v.s. Shrimp-farm Industry

↓

Nutrient: Organic Carbon

↓

Stock of fish in the ocean

↓

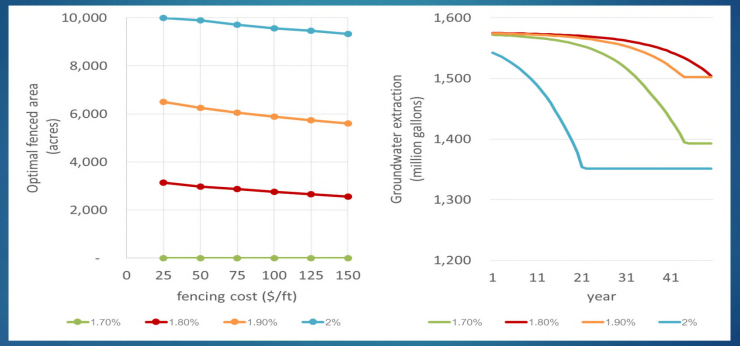
Fishery productive: Catch and Effort

Thank you very much

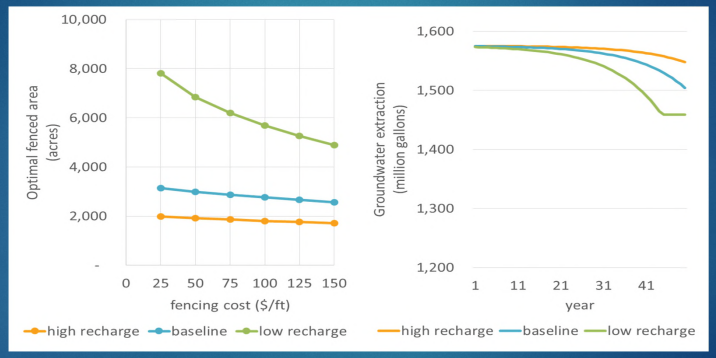
Many thanks to our supporters

- Interested in more applications of economic analysis to Hawaii' s priority environmental challenges? Check out http://www.uhero.hawaii.edu/136/project-environment
- And follow UHERO on Facebook: https://www.facebook.com/UHERO.forum

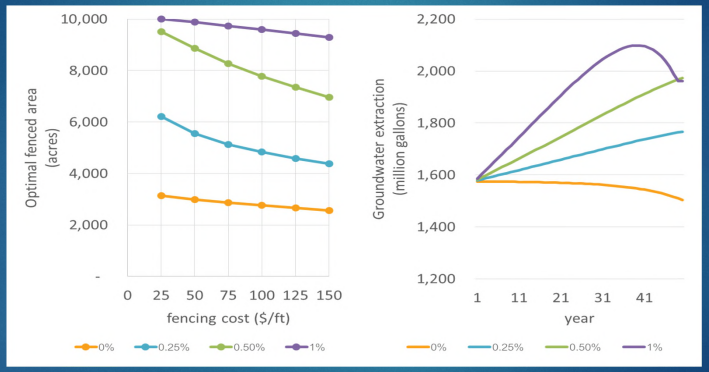
SA: Algae safe minimum standard

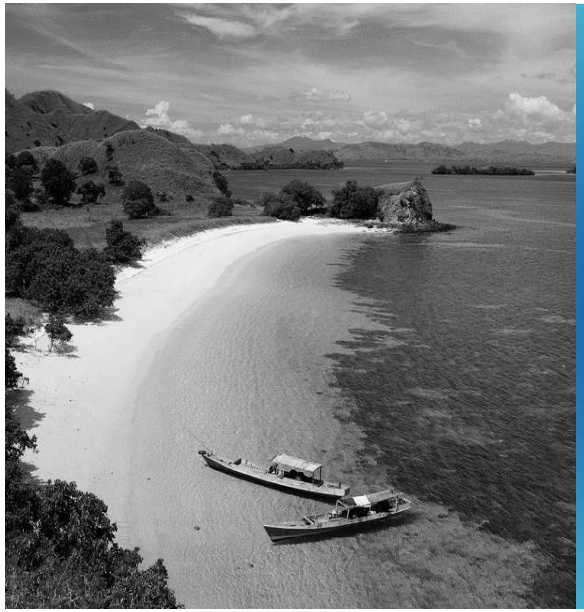


SA: Recharge Function



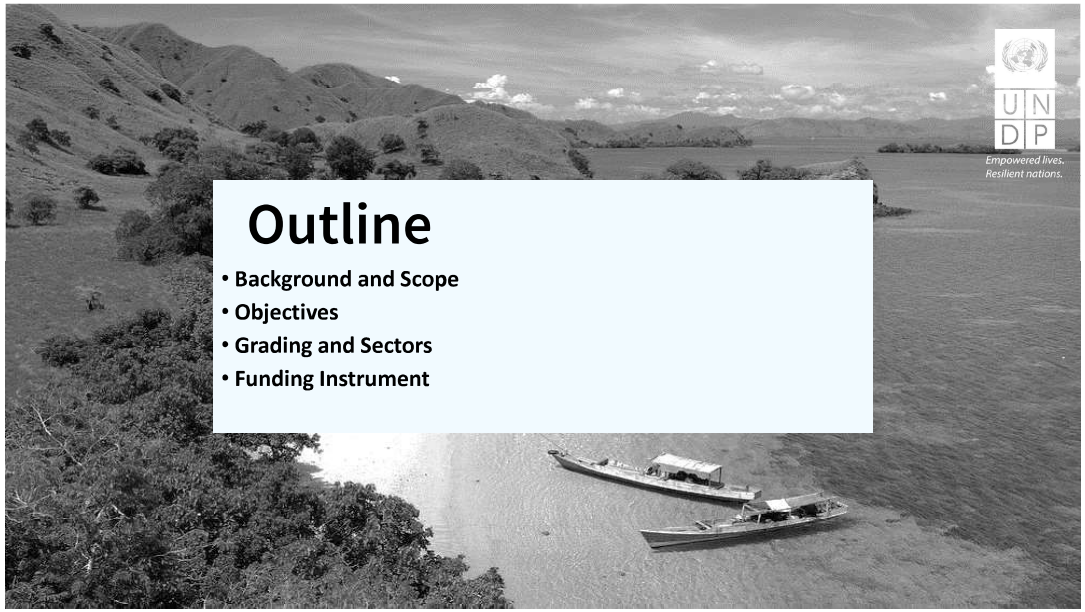
SA: Water demand growth





Blue Financing Strategic: the Case of Indonesia

Rima Prama Artha
Country Economist UNDP Indonesia
Rima.Artha@undp.org
February 2020



Outline

- Background and Scope
- Objectives
- Grading and Sectors
- Funding Instrument

Background

Indonesia is the largest archipelagic country in the world, boasting **6.400.000 km2** vast ocean, **17.499 islands**, astounding marine and fisheries resources.

The marine related contribution to Indonesia GDP was only around 3 % in 2018

Financing gap for SDG

This situation presents both opportunity to become the world's blue economy hub and maritime axis yet also susceptibility towards unsustainable use of ocean resources for economic growth.

Blue Economy

"Blue economy is an approach ***to improve sustainable marine management as well marine conservation and coastal resources and their ecosystems*** *in order to realize economic growth with principles including community involvement, resource efficiency, minimize waste, and multiple value added* (Explanation of Indonesia Regulations No. 32 Year 2014 Article 14)*"*

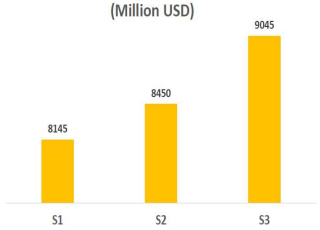
The Financing Gaps (IO Simulation)

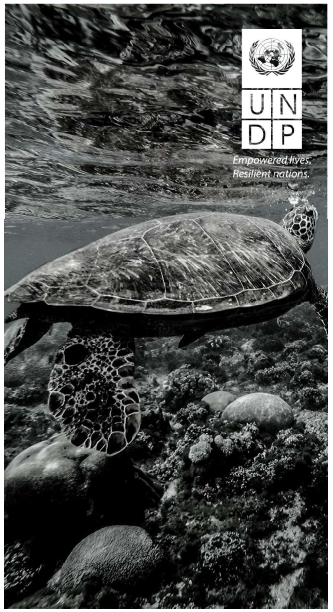
With business as usual, the Blue Economic sector contribution to GDP remain stay around 3 % and its values only double from 2018 to 2045. However, with extra financing that cost on average 8 - 9 Billion USD per year , it will increase its value to more than 8 times in 2045 compare to current one.

Blue economic sector Contribution to GDP in 2018 (3%)

Target in 2045: 6-7%

Additional Financial Investment Per Year (Million USD)





Expanding the Green Financing Success

Blended Finance Project: Combination of Islamic Finance, CSR, and global fund

INDONESIA GREEN SUKUK

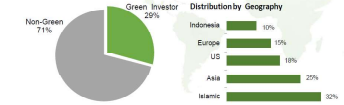
In 2018 & 2019, Republic of Indonesia has issued Green Sukuk of

$2 Billion

(~IDR 30 trillion)

- The world's first sovereign green sukuk
- First country to issue green bond/sukuk twice consecutively

THROUGH THE ISSUANCE, ROI HAS TAPPED INTO NEW TYPE OF INVESTORS (GREEN INVESTOR up to 29%)



Proceeds of Green Sukuk 2018 is allocated into

23 PROJECTS

across Indonesia

121 UNITS
of solar,mini-hydro and micro-hydro power plant was developed

727 KM
double-track railways is built in Java's North Coast Line

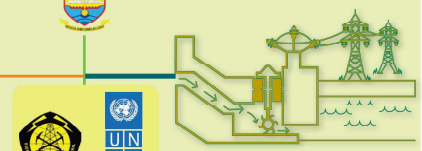
3.4 MILLIONS
of households received the benefit of the improvement in solid waste management

Zakat Funds
$ 350.000

BAZNAS
Badan Amil Zakat Nasional

BANK JAMBI

CSR Fund
$ 281.357



THE OBJECTIVES

to open capital markets for investment in the blue economy.

i. Provide essential information to be a basis for eligibility criteria for selecting "Blue Project".

ii. Define the blue financial instrument as a best practice for public and private investment.

BLUE SECTORS

DEFINITION

The utilization of Marine Resources:
1. Fishery
2. Energy and mineral resources
3. Coastal and small islands resources
4. Non-conventional resources

The exploitation of marine resources:
a. Marine industry
b. Marine tourism
c. Sea transportation
d. Sea building

TRANSLATED TO SECTORS

Sustainable fishery, Marine protection and restoration of Biodiversity and Ecosystem, Marine renewable energy and Disaster management and risk reduction

Waste management
Marine bio and non-bio technology
Eco-Tourism

How Do We Grade It?

Empowered lives. Resilient nations.

Environmental Impact (50%)

Economic Impact (25%)

Social Impact (25%)

Grading Matrix of Blue Economy Framework Sectors

Criteria			Grading
Environment Impact	Economic Impact	Social Impact	
High	High	High	Navy Blue (High Impact)
Medium	Medium	Medium	
Low	Low	Low	
High	High	High	Sapphire Blue (Medium Impact)
Medium	Medium	Medium	
Low	Low	Low	
High	High	High	Sky Blue (Low Impact)
Medium	Medium	Medium	
Low	Low	Low	

Blue Economy Sectors Framework

Empowered lives. Resilient nations.

- Sustainable Fisheries
- Marine Renewable Energy
- Waste Management
- Marine Protection, Restoration of Biodiversity and Ecosystem
- Disaster Management and Risk Reduction
- Marine Biotechnology
- Tourism
- Marine Technology

Financial Instruments

BLU

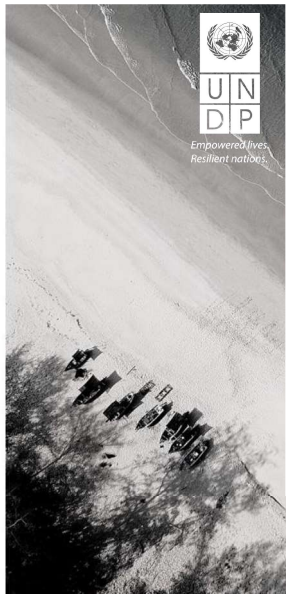
Crowd Funding

Blue Bond and Sukuk

Insurance

Blended Financing

Trust Fund



Main Features of the Maritime and Fisheries Business Capital Management Institution (LPMUKP)

- Adjacent Revolving Loans or Funding

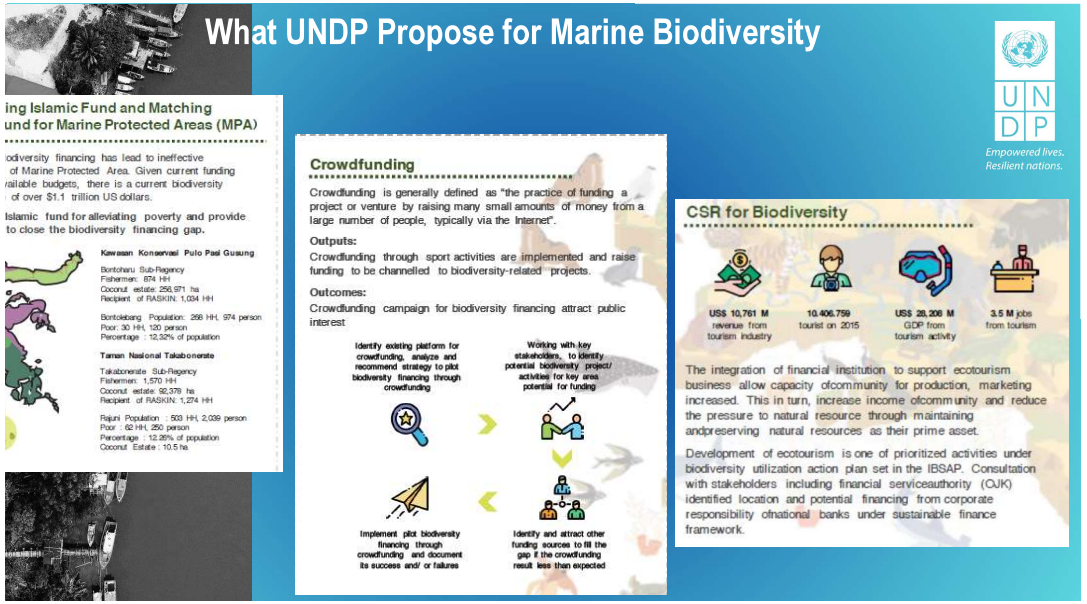
LPMUKP Task

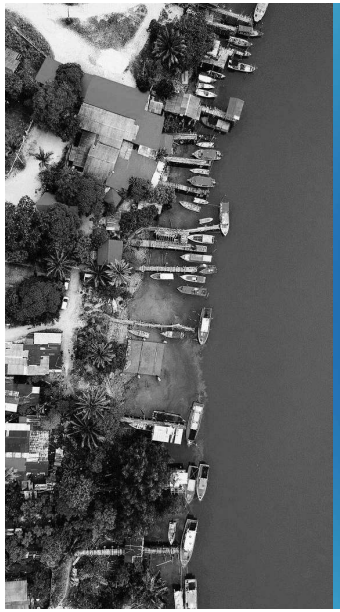
(Minister of Maritime Affairs and Fisheries Regulation No. 3/2017)

- Carry out management of revolving funds that are accompanied by micro, small and medium enterprises in the marine and fisheries sector

Fish cultivator business and its supporters → Fishing business and other supporting activities → Business management and marketing of fishery products → The salt business of the people and their supporters → Coastal community businesses, coastal shops, marine tourism, etc.

UNDP Empowered lives. Resilient nations.





Thank You!

UNDP Empowered lives. Resilient nations.

U O W

Governing a Blue Future

CHALLENGES AND OPPORTUNITIES IN BLUE ECONOMY GOVERNANCE

Dr Michelle Voyer – Australian National Centre for Ocean Resources and Security

UNIVERSITY OF WOLLONGONG AUSTRALIA

Blue confusion

WHAT DO WE MEAN BY A BLUE ECONOMY?

Oceans as natural capital Focus on conservation objectives Favoured by environmental NGOs. Major sectors: Eco-tourism and MPAs, Payment for Ecosystem Services models, Carbon intensive industries (e.g. oil and gas) and deep sea mining excluded.	**Oceans as a driver of innovation** Focus on technological or technical fixes, including innovation hubs Favoured by industry and Governments and some research institutes Major sectors: All sectors especially emerging industries like renewables, biotechnology and deep sea mining.
Oceans as livelihoods Focus on poverty alleviation and food security objectives Favoured by Small Island Developing States (SIDS), Small Scale Fishing (SSF) advocates and development agencies. Major sectors: Small scale fisheries/eco-tourism, aquaculture. Precautionary approach to deep sea mining.	**Oceans as good business** Focus on economic growth and employment Favoured by industry, and larger global economies (EU, OECD, China etc.) Major sectors: All sectors but focus on large multi-national corporations and sectors – shipping, oil and gas, renewables and deep sea mining.

GOVERNANCE CHALLENGES

- No agreed definition
- No guidance on implementation
- Lack of clarity on links with other governance tools and approaches

Voyer et al (2018) Shades of Blue: what do competing interpretations of the Blue Economy mean for oceans governance?, Journal of Environmental Policy and Planning

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Blue confusion

GOVERNANCE IMPLICATIONS

Exacerbating complexity

Inequity and injustice

Blue washing

Geopolitical and spatial conflicts

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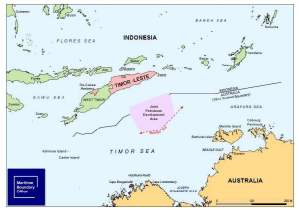
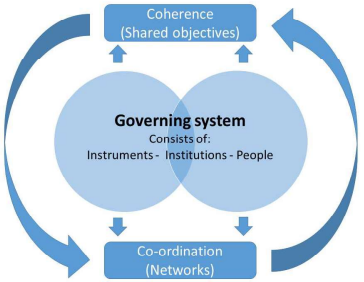
Managing complexity through policy coherence

TIMOR-LESTE CASE STUDY

- How coherent and coordinated is the existing governing system for 'Blue Economy' sectors?
- Where and how could Blue Economy governance add value?





Voyer M, Farmery A K, Kajlich L, Vachette A, Quirk G (in press) Assessing policy coherence and coordination in the sustainable development of a Blue Economy. A case study from Timor Leste, Ocean and Coastal Management

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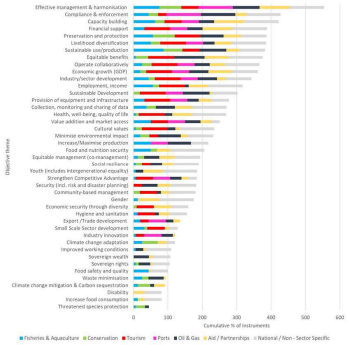
Managing complexity through policy coherence

TIMOR-LESTE CASE STUDY

Shared objectives

- Sectoral instruments already share many objectives, which are consistent with the Blue Economy concept
- Gaps were identified:
  - Poor representation of social objectives
  - Poor representation of climate change adaptation and mitigation
  - Some inconsistencies between domestic and aid/partner organization objectives



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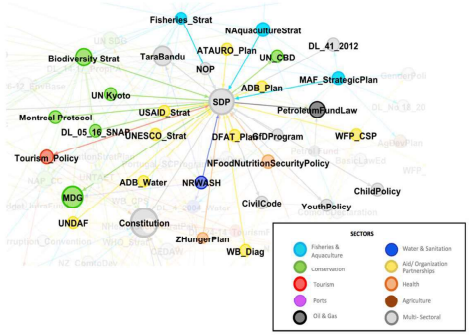
Managing complexity through policy coherence

TIMOR-LESTE CASE STUDY

Coordination across instruments

- Existing instruments are already facilitating a coordinated approach across sectors
- Strengthening or linking with these existing instruments may be more efficient then creating new instruments



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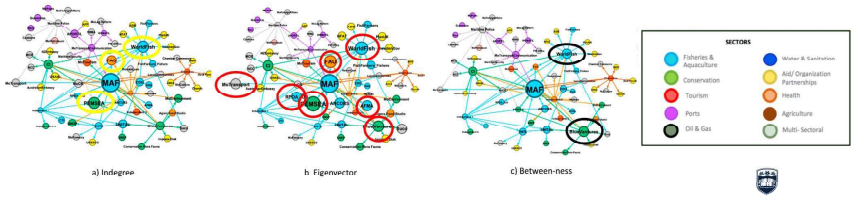
Managing complexity through policy coherence

TIMOR-LESTE CASE STUDY

Coordination across organizations

- Existing organizations are playing a bridging role across sectors (esp. MAF and Worldfish)
- This creates both opportunities and challenges for progressing Blue Economy governance



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Managing complexity through policy coherence

TIMOR-LESTE CASE STUDY

A Blue Economy that addresses, rather than adds to complex governance will…

- Plug gaps
- Resolve tensions
- Build on existing structures and frameworks through boundary organizations and bridging mechanisms

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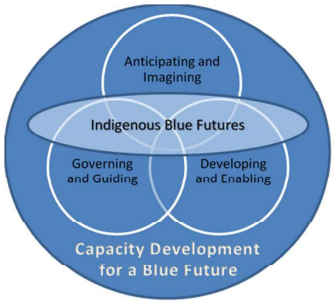
Ensuring a fair and equitable Blue Economy

UOW APPROACH

Building a community based Blue Economy

- Blue Economy planning which foregrounds:
  - Social and cultural values, especially intangible values
  - Indigenous aspirations and knowledge

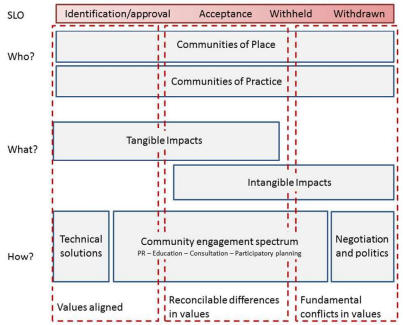


A social license for the Blue Economy

GUARDING AGAINST BLUE WASHING

What is the role of governing systems in ensuring a social license to operate (SLO)?

- SLO an informal license
- Is there a role for institutions?
- What is the relationship between SLO at a:
  - project scale
  - sectoral scale
  - cross sectoral scale?



Voyer, D. M., & van Leeuwen, D. J. (2019). 'Social license to operate' in the Blue Economy. *Resources Policy, 62*, pp. 102-113.
http://www.sciencedirect.com/science/article/pii/S0301420718303878

Managing conflict in the Blue Economy

DECISION SUPPORT TOOLS

How effective are Blue Economy decision support tools for resolving resource conflict?

- Ocean accounts
- Marine Spatial Planning
- What are some other options?

Blue Futures

GOVERNANCE OPPORTUNITIES FOR THE BLUE ECONOMY

Coherent policy linked to common normative goals

Community based, participatory approach

Sectoral and cross sectoral social license to operate

Regional approaches

U O W

Thank you & questions

https://www.uow.edu.au/global-challenges/sustaining-coastal-and-marine-zones/blue-futures/

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Island Tourism. On the Edge of the Deep Blue Ocean
or Does Tourism Benefit Islanders?

John Connell

University of Sydney

February 2020

Cayman Islands 1955

It was Andrew Morris Gerrard, Commissioner of the Cayman Islands from 1953 to 1957 who in a remarkably prescient observation warned the Islanders of an impending immigration and development change.

> The growth on a large scale of the Dependency as a tourist resort will make some Caymanians very rich indeed, and it will certainly make all Caymanians a good deal better off in the material sense than they are now. I doubt if it will make anyone any happier. If you are not to sell your birthright for a mess of pottage, now is the time to do something about it – to go for planned development, to strengthen the legislation in regard to migration and aliens.
>
> (Hansard, 1955: 3–4)

Santorini, Greece

- Santorini is fatally picturesque. Armadas of cruise ships and low-cost air carriers carry selfie and Instagram addicts to its clogged towns. Air bnbs have replaced residents. The island's donkeys buckle under the burden of portly visitors. ("Fat tourists leave Greek island donkeys CRIPPLED," read a headline in Britain's Express newspaper.)


Armadas of cruise ships and low-cost air carriers carry selfie and Instagram addicts to

Ms. Huang and Mr. Lin posing for Toto Kuo in Oia.CreditLaura Boushnak for The New

Wallis and Futuna: ‘the Pacific's newest tourist destination’?

- Wallis and Futuna has set a target of 10,000 visitors a year in a new strategy to move its tourism industry forward.
- The Chamber of Commerce: there were 100 visitors to the islands last year.
- "We are very proud to show our island and to receive people, receive tourists in our island … It's good for the economy but for us, the most important thing is to keep our island like this. And our culture is very strong“
- “We do not want to have too many visitors like the Cook Islands' 100,000.“ (President, Chamber of Commerce, 10 August 2019)

What is Development?

Economic Growth and Trickle-down

did it ever go away?

SDGs (2015)

values (Bhutan, Thailand … Pacific Way …)

trade-offs?

optimism – ‘more responsible consumption’

UNCED (Rio, 1992) ‘poverty eradication as an indispensable requirement for sustainable development’

The Challenge

Sustainable development has broad appeal and little specificity, but some combination of development and environment as well as equity is found in many attempts to describe it. However proponents of sustainable development differ in their emphases on what is to be sustained, what is to be developed, how to link environment and development and for how long a time’ (Parris and Kates 2003: 559)

…………. and who decides?

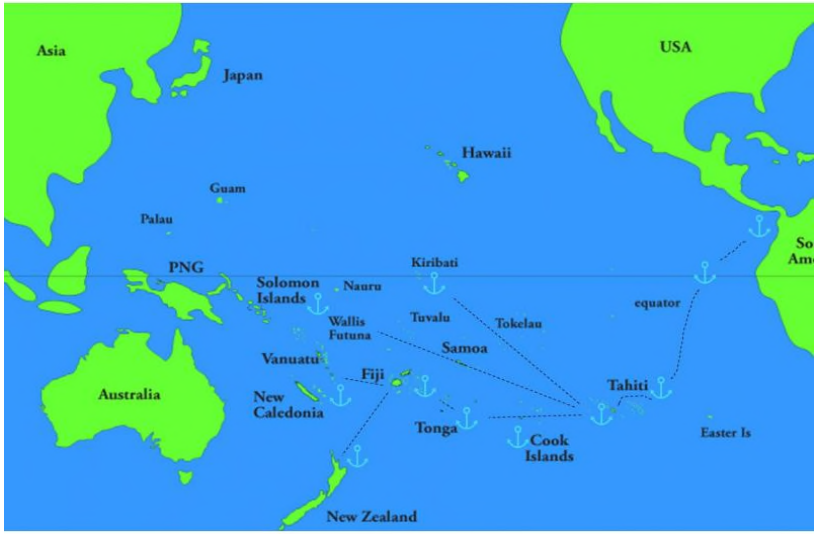
Islands

Well-known constraints to development

- Isolation, fragmentation, size, resources (physical/human), hazards
- No economies of scale

High costs of imports, exports (e.g. fuel, food etc)

Globalisation of expectations



Island Tourism

SIDS belatedly turn to tourism – income generation – 1970s

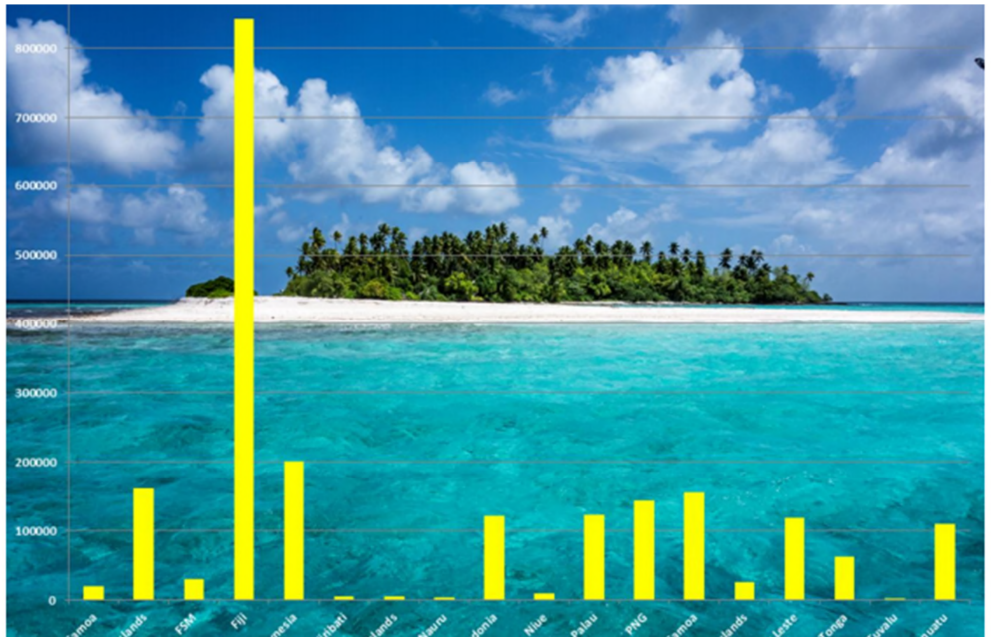
- economics (what alternatives?)
- culture v. social change

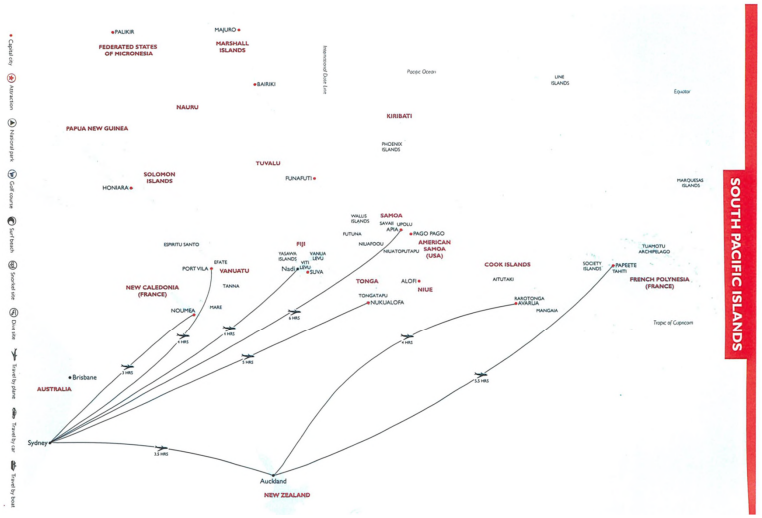
Comparative advantage? – sea, sun, sand .. .. sex? (surgery?)

Constraints - Intervening opportunities (e.g. Wallis and Futuna, Tuvalu….)

- Economics/Access
- Political (violence) shifts

External markets - 'tourist amnesia' … a good time





Forms

Luxury Resort
Standard/Mainstream
Backpacker
Ecotourism (numbers)
Cruise

Niche

Impacts …. Costs and Benefits

1. Incomes, employment/wages …
   labour-intensive

Linkages
   agriculture/fishing - low volumes, seasonality, uncertain supplies.
      tourist preferences ('island nights') ..
      food miles (and drink miles …)

   transport
   handicrafts …
Uneven development … scale?

Business Development

2. Business Development
   huts > hotels
      hard to go upmarket
      'community' to competition
   travel agents (airlines)
   car rentals
   fast food etc restaurants (franchises?)

   MNCs
      Wakaya (Fiji)

Impacts --- Social Change

3. Social Change
   Problem tourists – sex (prostitution), begpackers etc

   Protection or destruction of culture?
      Invented Tradition
      Culture villages
   Mystery Island (Vanuatu)
Immigration
   Cayman Islands, Turks and Caicos 'belongers'

Inevitability of Social Change (Man Friday?)

Impacts -- Environment

Pristine pleasures?
Pressures on environment –
   reefs, lagoons ……. management? CSR?
      coastal squeeze
   land losses … golf courses?
Traffic congestion – cruise ships, cars ..
   fresh water
   waste management – plastics ..
Infrastructure bias (e.g. Fiji)
   sewerage - energy – water


THE HIGHEST POINT ON SOUTH
TARAWA 3 metres
E/TA
RISING SEAS. DROWNING ISLANDS
TCCC/UNFCCC
SAVE THESE ISLANDS! YES WE CAN

Tourism Life Cycle?

Environmental Degradation

'tourism death spiral '

Overdevelopment

Taste (a Santorini perspective?)

Norfolk Island ('newly wed and nearly dead')

Revitalization?

Kuta (Bali) – D and D tourism ..

Isle of Man

Controlling and Planning?

Regulation of the golden goose

EIS

Political will and economic benefits

Short-term gains, long-term.. ?

'sustainability lite' and local

International Linkages

Multinational companies

Islands are far from isolated units (e.g. tourism …)

A fate and future influenced by distant others

Larger islands --- more control?

Strategies and Challenges

or six impossible things before coffee

<u>Strategies</u>

1. Policy Focus/Plan? -public/private ..
2. Financing what? by who?
3. A place for ecotourism, AirBNB ..? Which size fits who? Which business model?
4. Marketing

<u>Issues</u>

1. Intervening Opportunities .. 'a warm and friendly people'
2. Environment
3. Technology (costs and carbon …)
4. China
5. Zero-Dollar tourism, all embracing resorts ..

<u>Challenges</u>

1. Local Politics
2. Global Economy 'staycations'? VFR/Roots
3. Climate Change
4. Cruises
5. Linkages

In Search of a Conclusion

Tourism ---- potential > real benefits

Islands poorly placed to achieve SD

Crucial decisions made beyond them

Management challenges to regulating/developing policy and practice

Dissent on development, timing and 'trade-offs'

Balancing economy, environment and society

Who benefits? …. Some islanders + ?

Marine Tourism for Sustainable Development in Cox's Bazar, Bangladesh

Dr. Md. Anowar Hossain Bhuiyan
National University
Gazipur, Bangladesh

Regional Conference and Policy Dialogue
on Blue Economy, Ocean Tourism, Sustainable Blue Financing
25-27 February 2020, Nadi, Fiji

Marine Tourism

- Key components of blue economy and related to SDG-14
- Represents 5% of world GDP (UNWTO, 2019)
- Contributes 6-7% of global employment (UNWTO, 2019)
- Employment, improve capacity, develop local supply chains, and promote local cultural heritages (Papageorgiou, 2016).
- Improve livelihoods, economic growth and environmental well-beings (White and Rosales, 2003)

Marine Tourism and Community

- Contribute in social, environmental and economic benefits
- Creates awareness and support for conserving natural resources (Diedrich, 2007).
- Communities' supports on conservation activities related to benefits gathering from the tourism (Lindberg et al., 1996).
- Tourism activities negatively effects on environment such as pollution, damage and coastal erosion (Diedrich, 2007).
- Negative impacts on environment due to irresponsible nature-related activities (Gossling, 2001).

Marine Tourism in Bangladesh

- Bangladesh has entitled to 118,813 square kilometers in her territorial sea areas in Bay-of-Bengal
- There are number of tourism spots like beaches, islands and forest areas are situated in this ocean and coastal belt.
- Marine tourism is potential in Bangladesh for enjoyment activities, travel opportunities, accommodations, amenities, target tourists and tourism philosophy
- The livelihoods of coastal areas people are vulnerable due to population growth, unplanned urbanization, coastal change, climate change, pressure on marine resources and increase marine pollution

Marine Tourism in Bangladesh and SDG

- Average performance in **SDG** achievement
  - Index Score- 56.2
  - Regional Score-63.3
  - Global Rank-120 (of 157)
- **SDG-14: Ocean Health Index** (Sachs et al., 2017) :
  - Biodiversity (0-100): 91.7
  - Ocean Health Index - Clean Waters (0-100):36.7
  - Ocean Health Index - Fisheries (0-100): 38.8

Objectives and Methods

The present study identifies the stakeholders' perception on sustainable marine tourism development in Cox's Bazar of Bangladesh

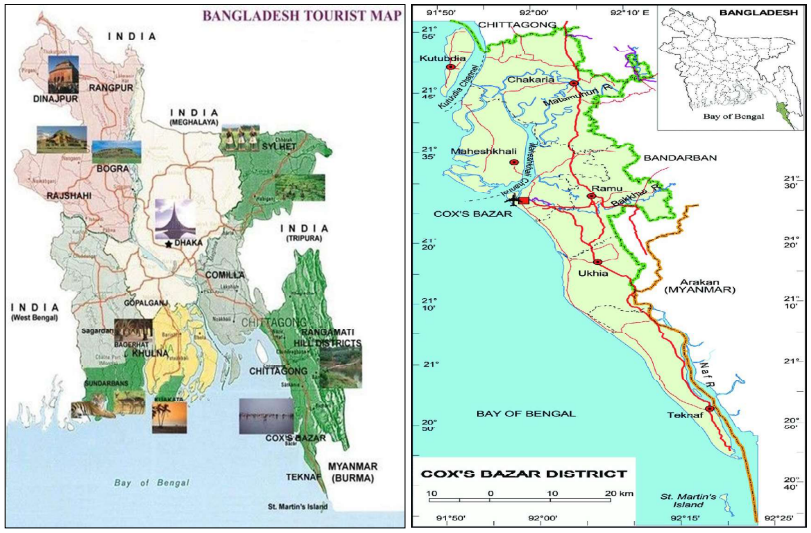
Study Area: Cox's Bazar is the longest sea beach in the world situated in Bay-of-Bengal. Cox's Bazar is coastal district of Bangladesh, situated in the south-east part of the country

Research Tool and Data collection: A semi-structured questionnaire has been administered for data collection. The respondents were asked to express their opinion based on a 5-point Likert Scale in several statements regarding sustainable development and marine tourism perspectives

Sampling Methods

- Sample size (n= 135) was determined with 98% statistical validity and 10% maximum allowable errors considering equal proportion of community perception
- Samples are selected purposively under convenience sampling design and 200 questionnaires were distributed. Finally, 150 appropriately completed questionnaires were returned by the respondents.
- Among the 150 respondents, equal proportions were found from tourists, local communities who directly affected from tourism and peoples who are engaged with tourism business. The respondents from tourism business include hotel owners, tour operators, tour guides and local businessman.

Tourism in Cox's Bazar

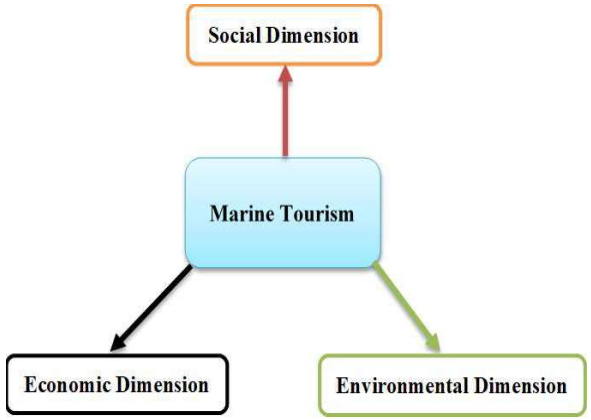


Tourism Attractions in Cox's Bazar

- **Beaches:** Kolatoli, Inani, Laboni, Himchori
- Himchori Waterfall
- Buddhist Temples
- Hindu Mandirs
- Ancient Mosques
- Maheskhali Hilly Island
- Dulhazra Safari Park
- Elephant Sanctuaries
- Saint Martin Coral Island
- Cox's Bazar Marine Drive
- **Three Exclusive Tourism Zones**: Sabrang, Naaf, Sonadia

Tourism in Cox's Bazar

Theoretical Framework



Theoretical Framework

- **Social**: quality of life, local ecosystem, environmental education, infrastructure and public facilities, local cultural heritage, living cost, illegal activities (Gier et al., 2017; Lopes et al., 2015; Hin, 2010).
- **Economic**: economic benefits, fishing, employment, livelihood activities, foreign investment and price of local goods (Hunter et al., 2018 ;Samoilys et al., 2017).
- **Environmental**: Health of marine environment, impacts on marine lives, support for conservation, ecosystem services, waste generation, overcrowded situation, pressure on marine resources (Renfro and Chadwick, 2017; Bozec et al., 2016).

Demographic profile of the respondents

Variables		Frequency	Percentage
Sex	Male	130	86.7
	Female	20	13.3
Age (years)	20 – 30 years	50	33.3
	31 – 40 years	64	42.7
	40 years above	36	24.0
Education	Primary	20	13.3
	Secondary	40	26.7
	College and above	90	60.0
Occupation	Self-employed	40	26.7
	Business	40	26.7
	Service holder	70	46.6
	Total	N = 150	100.0

Perception on Social Aspects of Marine Tourism

Statements	Mean Agreement Score	Agreement Level	Standard Deviation	H0: μ=4, Vs. Ha: μ>4		
				t-value	p- value	Comment
Improve quality of life for local	4.24	Agree	1.117	2.632	0.005	Significant
Give value on local ecosystem	3.96	Neutral	1.210	-0.405	0.657	--
Education opportunity about marine environment	3.94	Neutral	1.213	-0.606	0.727	--
Facilitate to the infrastructure and improve public facilities	4.21	Agree	1.131	2.274	0.012	Significant
Tourism development increase the living cost	4.13	Agree	0.802	1.985	0.024	Significant
Respect local cultural heritage	3.96	Neutral	1.210	-0.405	0.657	--
Increase crime, drugs and illegal activities	4.21	Agree	1.186	2.169	0.016	Significant

Perception on Economic Aspects of Marine Tourism

Statements	Mean Agreement Score	Agreement Level	Standard Deviation	H_0: μ=4, Vs. H_a: μ>4		
				t-value	p- value	Comment
Provide economic benefits to local	4.14	Agree	0.624	5.993	0.002	Significant
Marine tourism helpful for fishing activities	4.31	Agree	0.874	4.349	0.000	Significant
Provide employment opportunities	4.24	Agree	1.127	2.632	0.005	Significant
Develop livelihood of the poor	4.64	Agree	1.197	3.374	0.000	Significant
Attract foreign investment	3.57	Neutral	1.142	-0.322	0.626	--
Increase price of local goods	3.58	Neutral	1.115	-4.613	1.000	--

Perception on Environment Aspects of Marine Tourism

Statements	Mean Agreement Score	Agreement Level	Standard Deviation	H_0: μ=4, Vs. H_a: μ>4		
				t-value	p- value	Comment
Preserve the health of local marine environment	3.96	Neutral	1.112	-0.220	0.587	--
Create negative impacts on marine lives	4.21	Agree	0.91	2.826	0.003	Significant
Support for conservation	4.19	Agree	1.127	2.065	0.020	Significant
Marine tourism support ecosystem services	3.58	Neutral	1.115	-4.613	1.000	--
Tourism activities create overcrowd in beach areas	4.18	Agree	1.124	1.961	0.026	Significant
Create additional waste and degradation	4.23	Agree	0.931	3.026	0.001	Significant
Tourism activities create pressure on marine resources	4.21	Agree	1.186	2.169	0.016	Significant

Conclusion

- Stakeholders' support in tourism development if they get benefits
- Marine tourism contributes in sustainable development-social, economic, environment
- Marine tourism development creates negative impacts like increase living cost and illegal activities in study area
- Cause several problems like overcrowded, degradation, waste generation, increase pressure on natural resources and thus put negative impacts on marine resources
- Sustainability depends on ecological balance, pollution free ecosystem, conservation and proper utilization of natural resources, and reduces the conflict with local stakeholders

Recommendations

- **Increase the facilities for marine tourism activities**, such as angling, sailing, surfing and adventure centers with sustainable manner
- **Training and certification** for marine tourism activities, water sports, boat and engine activities, and tour guiding activities
- Propose **willingness to pay (WTP)** mechanism for the tourists to collect revenue and utilize this for conservation of marine resources
- Form **National Governing Bodies for regulating** marine tourism activities, training, awards and qualifications

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Tourism and SME Development: Do Tourism related SMEs Perform better than Non-Tourism SMEs?

Evidences from SMEs in Coastal Tourism Destination in Southern Province of Sri Lanka.

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A land like no other

Outline of the Presentation

- Introduction
- Problem Statement
- Research Objectives
- Literature Review
- Methodology
- Results and Discussion
- Conclusion
- Recommendations
- References

Introduction

Tourism as one of the key drivers of Sri Lanka economy

- Sri Lanka has proved to be one of the fastest growing tourist destination in Asia
- It contributed more than US $2980 million to the economy which seconds only to remittances and textiles and garments and 14.2% of total foreign exchange earnings of Sri Lanka (Annual Statistical Report in 2017 of Sri Lanka Tourism Development Authority (SLTDA)

Introduction

Small & Medium Enterprises (SMEs)

- Different countries use different definitions for SMEs based on different dimensions.
- The commonly used yardsticks are;
  - total number of employees
  - annual turnover and
  - total investment

Introduction

Small & Medium Enterprises (SMEs)

- In the Sri Lankan context, SME classification based on the number of employees and annual turnover

Table 01: Defining SMEs in Sri Lanka

Company category	Manufacturing Sector		Service Sector	
	Number of Employees	Annual Turnover (Million)	Number of Employees	Annual Turnover (Million)
Micro	1-10	≤ LKR 15	1-10	≤ LKR 15
Small	11-50	≤ LKR 16-250	11-50	≤ LKR 16-250
Medium	51-300	≤ LKR 251-750	51-200	≤ LKR 251-750

Source: National Policy Framework for SME Development, Ministry of Industry and Commerce, Sri Lanka (2016)

Problem Statement

- Tourism has been recognized as an emerging sector in Sri Lanka.
- There are significant number of tourism-related SMEs have been started especially in tourism destinations.
- However, there is a huge gap related to systematic study which compares the performance of tourism-related SMEs and non-tourism SMEs.

Objectives of the Study

1. To recognise and profiling the tourism and non-tourism SMEs located in Hikkduwa, Galle, Mirissa and Tangalle in Southern Province of Sri Lanka.
2. To examine whether the profit of tourism related SMEs are higher profit than that of non-tourism SMEs.

Literature Review

Tourism

Tourism as an identifiable nationally important industry, which involves wide area sector of component activities including the provision of transport, accommodation, recreation, food and related services. (Australian Department of Tourism and Recreation 1975)

SMEs

Many studies have reported that economic growth requires participation from small business units (Battilana and Casciaro, 2012). They play a fundamental role by stimulating domestic and regional economic growth, reducing unemployment, stimulating market effectiveness or innovation based customer need fulfilment (Kaur and Sharma, 2014).

Tourism SMEs

The SME businesses in the hospitality and tourism industry include local restaurants that provide for the needs of the tourists; accommodation in the form of homestays, budget hotels and boutique hotels; transportation; and other necessities (Rashid et al., 2013; Konrad and Ekiem, 2011).

Tourism SME business activities classified in the hospitality and tourism into food and accommodation services, retail and souvenir, travel agent, transport and tour guide, and other services which are the requests of the visitors (Othman and Rosli, 2011).

Tourism impacts on SME businesses

Tourism creates opportunities for small enterprises, because startup cost and barriers to entry in this sector are relatively low and can even accessible to the poor. (UNESCAP, 2008).

With tourism development, the local people have golden opportunities to offer services or sell products to local and foreign tourists. (Dickman, 1992; Rogerson, 2004).

Methodology

Study Area

- Southern Province of Sri Lanka
- Four coastal tourism destinations - *Hikkaduwa, Galle, Mirissa and Tangalle*

Data collection

- Enterprise survey with 200 tourism SME holders (Snowball Sampling Technique)
- Focus Group Discussions (FGDs) – 05
- Key Informant Interviews (KIIs) - 05

Research Method

Data Analysis

Employed both Econometric and Descriptive Analysis

Table 02: Dependent and Independents variables of the study

Variable Name	Explanation	Expected Sign
Profit	Annul profit of the firm	
TOURISM	Dummy variable to represent SMEs related to Tourism TOURISM=1 for Tourism related SMEs TOURISM=0 for Non-Tourism SMEs	Positive when TOURISM = 1
lnSL	Log of annual sales revenue	Positive
lnTR	Log of number of employees who are trained annually	Positive
lnRD	Log of R&D expenditure	Positive
lnK	Log of total capital of the firm	Positive
lnL	Log of number of workers	Positive
lnHC	Log of the level of education of SME holder	Positive
lnAGE	Log of number of years in the industry	Positive
TYPE	Dummy variable for Type of SME TYPE=1 for Small TYPE=0 for otherwise (Medium and Large)	Negative when TYPE = 1

Source: Developed by authors based on literature survey

Results & Discussion

Profiling the SMEs: Key business types of SMEs

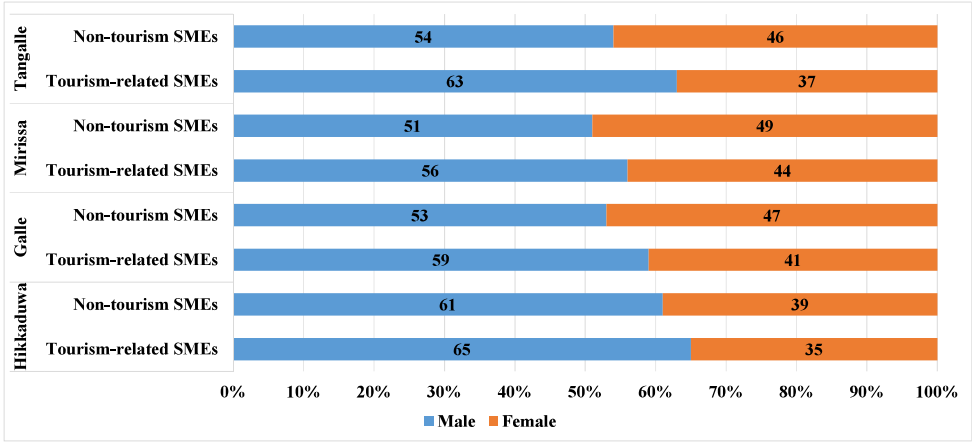
Table 03: Key business types of tourism-related and non-tourism SMEs

	Type of Business	Number of SMEs	Percentage
Non-tourism SMEs	Agriculture, farming and dairy	18	21.69
	Arts and crafts	12	14.46
	Apparel and bags	22	26.51
	Auto parts and maintenance	10	12.05
	Household items	11	13.25
	Cement and metalwork	8	9.64
	Other	2	2.41
	Sub Total of Non-Tourism SMEs	83	41.50
Tourism-related SMEs	Hotels & Homestay	39	33.33
	Spas & Ayurveda	21	17.95
	Cafes, Food & Beverages	15	12.82
	Travelling & Guiding	12	10.26
	Surfing & Diving	10	8.55
	Souvenirs & Handcraft	17	14.53
	Other	3	2.56
	Sub Total of Tourism-related SMEs	117	58.50

Source: Created by authors based on survey

Profiling the SMEs: Gender Composition of SME Holders

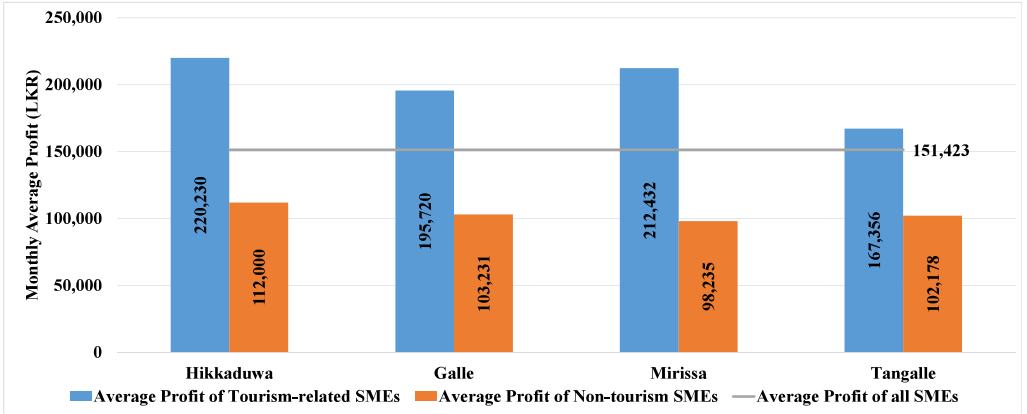
Figure 01: Gender composition of SMEs in four destinations



Source: Created by authors based on survey

Profiling the SMEs: Average Monthly Profit of SMEs

Figure 02: Average monthly profit SMEs in four destinations



Source: Created by authors based on survey

Profiling the SMEs: SME Holders' Level of Education

Table 04: Education level of SME holders

Destination	Years of Schooling of Tourism-related SMEs			Years of Schooling of Non-tourism SMEs		
	Maximum	Minimum	Average	Maximum	Minimum	Average
Hikkaduwa	19	5	12	19	8	12
Galle	19	8	13	19	5	13
Mirissa	18	8	10	19	8	12
Tangalle	19	8	12	19	8	12

Source: Created by authors based on survey

Impact of Tourism on the performance of SMEs

Variable Name	Model 01	Model 02	Model 03
TOURISM	0.7215*** (0.2314)	0.6548*** (0.2114)	0.5861*** (0.1945)
lnK	0.5894*** (0.2014)	0.5104** (0.2358)	0.4896** (0.2251)
lnL	0.7415*** (0.2547)	0.4896*** (0.1589)	0.3548*** (0.1358)
lnHC	0.0954** (0.0451)	0.0876** (0.0372)	0.0741** (0.0351)
lnSL		0.7894*** (0.2541)	0.6987** (0.3198)
lnTR		0.0278** (0.0129)	0.0626** (0.0289)
lnRD		0.0548* (0.0288)	0.2027 (0.5481)
lnAGE			0.9841 (0.6841)
TYPE			-0.0765** (0.0325)
Constant	0.2101*** (0.0192)	0.2326*** (0.0204)	2.3531*** (0.1050)
Number of Observations	200	200	200
R^2	0.5272	0.6056	0.7962
Prob on F	0.0000	0.0000	0.0000

- Three models were estimated by adding different independent variables gradually in order to check the robustness of the relationship between Tourism and profit of SMEs
- Estimated coefficients for Tourism in all three models are positive and statistically significant at 1% level. This relationship is consistent even when the models are controlled by other characteristics of firms.
- The estimated models are statistically significant at 1% level and also have higher R^2 value in model 03 (0.7962) representing higher level of goodness of fit.

Conclusion

- The survey identified six main business types in terms of non-tourism SMEs as agriculture, farming and dairy, arts and craft, apparel and bags, auto parts and maintenance, household items and cement and metalwork.
- The businesses as hotels and homestays, spas and Ayurveda, cafes, foods and beverages, travelling and guiding, surfing and diving and souvenirs and handcraft are recognized as common business types in relation to tourism-related SMEs.
- Majority of SME holders are male in tourism-related SMEs compared to non-tourism SMEs.

Conclusion

- The average profit of tourism-related SMEs are considerably higher than non-tourism SMEs.
- The education level of tourism-related SMEs are slightly lower than that of non-tourism SME holders.
- The econometric analysis confirm that tourism-related SMEs account for higher profit compared to non-tourism SMEs and this relationship between being a tourism-related SMEs and accounting for higher profit is highly statistically significant.

Recommendations

- To motivate people who are interested in doing a tourism-related SME in studied areas by providing necessary trainings and initial capital for them to start their business up.
- To establish a proper mechanism to inspect the service provided by SMEs in order to ensure a quality service for tourists.
- To Provide a solid public-private partnership

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Thank You

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KEEPING BLUE OCEANS GREEN: CREATING TRUSTWORTHY SUSTAINABLE GREEN HOTELS AROUND OCEANS

Presented By:
Dr. ANSH GUPTA
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(Visiting Faculty)

Protect the Oceans and You Protect Yourself....

Jean-Michel Cousteau

Premise and Problem

- Ocean sustain all life on our planet.
- The quality of life depends upon the health of oceans.
- Oceans are blue **but tourism activities around the oceans are endangering** the oceans themselves. Specifically, the hotels used for accommodation around oceans.

Introduction

- Increasing **consumer sensitivity for constantly deteriorating** environment, Kyoto Protocol (2005) and Paris Agreement (2015)
- **Hospitality business around oceans**, forms part of ocean infrastructure, is also increasingly **getting sensitized to popular public sentiment and constantly devising strategies** for effective response to the consumer needs for eco-friendly goods/services (Grove, Fisk, Pickett and Kangun 1996)
- **Not all** the product/service offerings **are really green**, making many such **green claims suspicious**(Smith and Font 2014; Chen and Chang 2012).
- **Greenwashing**, Suspicious Green Claims and Low level of Consumer Trust

Research Questions

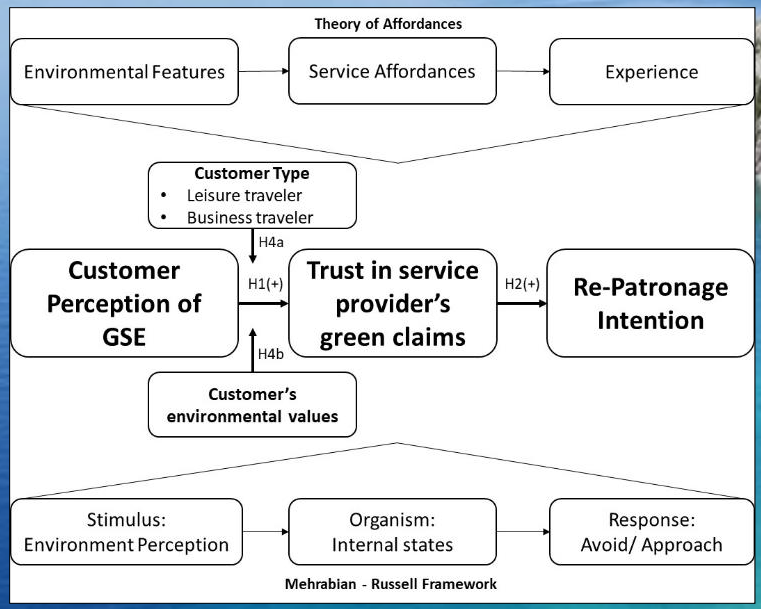
- Which specific aspects of Green Hotels result in building or reducing Green Trust?
- What is the effect of environmental values, an individual trait, and travel purpose on the above relationship?

Conceptual Framework

- The framework of the current work is rooted in the **S-O-R paradigm and theory of affordances** (Mehrabian and Russell 1974; Tussyadiah 2014)
- The S-O-R paradigm suggests that consumers in any environment Respond in two ways:
  - **Approach** - intention to explore the environment as well as future re-engagement
  - **Avoidance** - desire to stay away from the environment
- These are outcome of consumer's **evaluation of the environmental setting** (Stimulus) for shaping meaningful **consumption experiences** (Organism) (Baker et al. 2002)

Conceptual Framework(Cont..)

- According to the **theory of affordances**, servicescape atmospherics **enable positive consumption** and **trustworthy experiences** (Strannegård and Strannegård 2012).
- If conceived and executed properly, **servicescape designs** can deliver resources that **create an favorable experience**.



Key Elements of the Framework

- **Green Service Encounters (GSE):**
  Customer's interaction with all green aspects of a service environment, including its **physical facilities**, **personnel** and other **tangible and intangible elements** that serve as **physical evidence** for actual green delivery (Wu, Ai and Cheng, 2016; Baker 1986).
  - Restrict harmful wastage (for example use of bio-degradable materials)
  - Innovative service-design attributes (for example, waterless toilet flush),
  - Alternate service elements that protect exploitation of natural resources overall, help in environmental conservation around Oceans

Key Elements of the Framework (Cont..)

- **Green Trust** :
  the willingness to depend on a particular brand **based on the belief or expectation** resulting from its **credibility, benevolence, and ability** about environmental performance.
- Trust becomes **critical in high-involvement** offerings, especially pro-environment services, as consumers run the **risk of making wrong choices**, leading to increased costs and moral hazards (Lam, Lau and Cheung 2016).
  - The realization that one patronized a service that did not perform well on its green claims may **lead to customers to experience guilt.**

Key Elements of the Framework (Cont..)

- Re-patronage intention refers to **strong customer intent of re-engaging** with a service brand(Oliver 1997)
- Given increased competition in hospitality, it's important for service providers to **add more service value** in order **to encourage re-patronage and going green**, as well as fulfilling related obligations diligently, **is one such way** (Manaktola and Jauhari 2007).

Hypotheses

- Green Service Encounters are **the moments of truth**
- Trust is creation happens in 2 ways :
  - **Psychologist** (Trustor & Trustee Relations), hotel service elements **create trust in customers**, measured through **Design and Ambience (Inside and Out Side)** of a green service environment
  - **Sociologist perspective** - trust formation also happens due to interaction with other people (**Social**) in the hotel environment (Staff and Other Customers (**Conformity/non-conformity**)).
- Overall, these varied meanings derived from consumption of GSE, be it **economic benefits to the ocean environment** or social **conformity/nonconformity** of such consumptions, **create a greater sense of customer trust** in the hotel green service (Wang et al. 2014).

H1:Positive perception of a hotel's GSE enables consumer's trust in the green claims.

Hypotheses (Cont…)

- **Trustworthy experiences** from a service are **important** for determining **future customer behavior** (Zaltman 2003)
- **The believability** of value delivery enables a strong **trust-based** consumer-brand relationship, more so in case of services like hospitality (Barsky and Nash 2002; So, King and Sparks 2016)

H2: Higher consumer trust in a hotel's green service claims enhances re-patronage intention.

Hypotheses (Cont…)

- Presence of a stimulus that is **perceived to be unreliable** is **unable to provide** efficient responses (Morgan and Hunt 1994, Chaudhuri and Ligas 2017; Gkorezis and Bellou 2016)
- Becoming **sustainable** helps a hotel to **differentiate service** and offers **additional value to guests** as an opportunity to be **environmentally responsible**, it's **important to build trust** for making the customer decision easy for future engagements(Wu and Liang 2009; Keng et al. 2007; Barskyand Nash 2002)

H3: Consumer's trust mediates the relationship between GSE and re-patronage intention.

Hypotheses (Cont…)

- Tourism in general **involves a duality**, with travelers **self-ideals entangled with collective beliefs** of co-tourists, each affecting the other (Lauring, 2013; Doran, Larsen and Wolff 2015).
  - From a **self-determination theory** perspective, **self-ideals indicate** intrinsic **motivation** to engage in tourism for **sole purpose of pleasure**
  - **Collective ideals** induce **introjected regulation** that are internalized to **avoid guilt and enhance self-esteem**. Both **creating Positive Emotions**.
- Leisure Travelers (**Hedonic Purpose, play and enjoyment**) will be more involved with green features before trusting the green service
- Business Travelers (**Utilitarian Purpose, normative motives**) will be more compliant with green behaviors which reflect social acceptance.

H4a: The impact of GSE on trust will be greater for leisure travelers than business travelers.

Hypotheses (Cont…)

- **Environmental values** of an individual play a **crucial role** in the development of **unique experiences**.
- People with **pro-environmental attitude**, consciously try to **minimize the negative impact** of their consumption through reduced energy consumption and waste production (Kollmuss and Agyeman 2002).
- Individuals with **high environmental values**, due to greater concerns, ensure accuracy in their **judgment about eco-friendliness** of a service environment.

H4b: The impact of GSE on trust will be greater for customers with higher environmental values.

Data Collection

- Both **Qualitative and Quantitative** approach were adopted
- Exploring Dimensions of GSE
  - To better understand the benefits sought by the guest at the green hotels, **indepth interviews** were conducted at 3 certified Green Hotels in the coastal cities of India – **Chennai, Mumbai and Kochi** . 25 guests were interviewed
  - With the permission of the hotel management, Guests were **randomly approached** in the lobby area. Each interview went for 75-90 mins and was audio recorded.

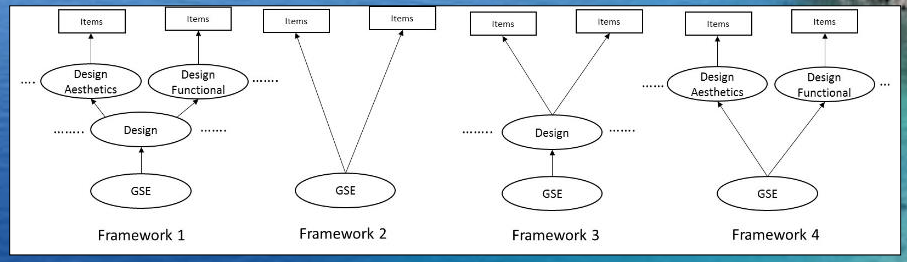
Analysis of the Qualitative Part

GSE Dimensions	Encounters observed by respondents
Ambient- Interior	Natural fragrance, natural lighting, temperature inside is not too hot not too cold, quality of air is fresh, sound of running water, and natural oils are heated for generating fragrances.
Ambient- Exterior	Pleasant natural aroma in the gardens, fresh air in the outdoors, sounds of waterfall, well maintained greenery and flowers.
Design- Functional	low flow water fixtures, organic foods, linen/towel reuse option, energy saving buttons in guest rooms, recycling bins, multi-glazed windows, refillable amenities dispensers, waterless urinals, organic soaps,
Design- Aesthetics	Sensor controlled lighting in rooms and lobbies, stationery made of recycled material, objects used for decoration are made up of recycled materials, energy efficient lighting, local artifacts used for décor, no cut flowers used for décor, lot of plants are used for decoration, environmental certification is well displayed.
Social- Staff	Hotel has a dedicated 'green team', staff seems well trained in practicing eco-friendliness, and staff very well explained some of the green features in my room.
Social – Other customers	Lot of guests turned up for the tree plantation exercise organized by the hotel, other guests also consciously separating organic and non-organic waste, as per the hotel stats about 80% of the guests opt for linen/towel reuse option

Analysis of the Quantitative Part

- Data was collected from 12 certified Green hotels in the coastal cities of India.
- Some of the items generated for measuring GSE were dropped after there were found to insignificant or not loaded properly on the respective factors.
- CFA analysis, after dropping the above items, reported fit indices of $\chi^2 = 549.7$, $df = 309$, $\chi^2/df = 1.78$, **GFI=0.902; CFI=0.901; IFI=0.902; TLI=0.902**; **RMSEA=0.063; SRMR=0.046,** suggesting satisfactory fit of model to data (Bentler and Bonnet 1980).

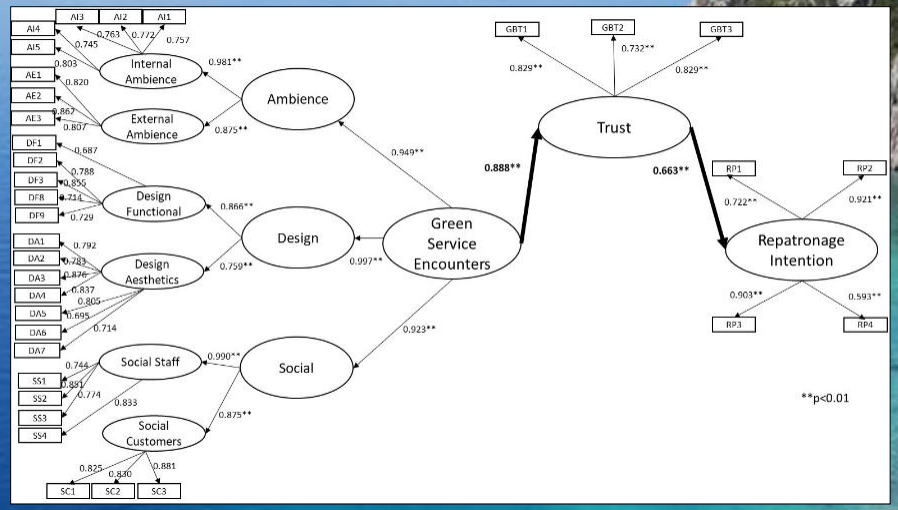
- **We found GSE to be higher order construct showing a better model fit indices.**



Measuring Green Trust, Re-Patronage Intention and Environmental Values

Trust	I feel that this hotel's environmental commitments are generally reliable (GBT1)	Chen and Chang (2012) Chen (2010)
	I feel that this hotel's environmental performance is generally dependable (GBT2)	
	This hotel keeps promises and commitments towards environmental protection (GBT3)	
Re-patronage Intention	I will prefer to stay at hotels of this brand when traveling (RP1)	Han, Hus, Sheu (2010)
	I will encourage my friends and relatives to stay at hotels of this brand when they are traveling (RP2)	
	If someone is looking for a hotel, I will suggest to him/her to stay at hotels of this brand (RP3)	
	I am willing to spend extra in order to stay at an environmentally friendly hotel of this brand (RP4)	
Environmental Values	It is important to me that products I use do not harm the environment (EV1)	Haws, Winterich, and Naylor, 2010
	I consider the potential environmental impact of my actions when making many of my decisions (EV2)	
	My purchase habits are affected by my concern for our environment (EV3)	
	I am concerned about wasting the resources of our planet (EV4)	
	I would describe myself as environmentally responsible (EV5)	
	I am willing to be inconvenienced in order to take actions that are more environmentally friendly (EV6)	

Testing of the Path Model



Mediation and Moderation Testing

Relationship	Path via Trust	Path coefficient	χ2/df	FIT INDICES						Inference
				CFI	IFI	GFI	NFI	RMR	RMSEA	
GSE→Re-patronage Intention	Constrained	0.745**	3.226	0.915	0.915	0.840	0.882	0.060	0.065	FullMediation
	Not constrained	0.124	3.157	0.918	0.918	0.844	0.884	0.058	0.064	
Note: Significance **p<0.01										

Independent Variables		Trust		
		Model 1 Standardized β	Model 2 Standardized β	Model 3 Standardized β
Main Effects	GSE	0.802**	0.731**	0.730**
Moderator	Travel Purpose Dummy		-0.093**	-0.112**
	Environmental Value		0.162**	0.146**
Interaction Terms	GSE X Travel Purpose			0.110**
	GSE X Environmental Value			0.125**
R^2		0.643	0.675	0.687
Adjusted R^2		0.642	0.672	0.681
F Change		940.127	24.943	10.380
Δ R^2		0.643	0.031	0.013
Note: Significance **p<0.01				

Discussion and Implications

- Hotels in the ocean regions face **great challenge of generating TRUST** among the customers about their practices being good for the oceans/ environment.
- This study introduces a **novel concept of GSE** for hotels which details **the moments of truth** when customers actually interact with the eco-friendly aspects of a hotel around the ocean.
- GSE is a multidimensional construct with **ambience, design and social** being the three main dimensions. Statistically separable but operationally inseparable

Discussion and Implications(Cont…)

- Results show that there is **strong relation between the perceived GSE and trust**.
- Thus, it's critical that **green hotels** around oceans **need to develop a complete sustainable package for GSE** including all sub-dimensions.
- Findings also show that **trust generated by such encounters**, through **procedural and operational capabilities** of the service provider, goes a long way is building **loyalty-driven behaviors** (Re-Patronage Intention)

Discussion and Implications(Cont…)

- The moderation hypothesis for travel purpose (leisure/business) and in turn motives (hedonic/utilitarian) **was disproved** and suggests that **impact of GSE on trust formation is higher for business travelers**.
- This implies that, as argued by Steg et al. (2014), **tourists with hedonic motives** are driven by primarily **self-enhancement values**, view green services as an inconvenience and tend to ignore them.
- People with **high environmental** values **are more open to new experiences** and highly sensitive to information asymmetry and complexity of green service elements.

Take Away for Practitioners and Policy Makers

- For **Keeping Blue Oceans Green**, Hotels should **offer wholesome Green Serviescape** to the customers **making them trust** their sustainable efforts and **generate loyal futuristic** behavior
- Actionable points are offering eco-friendly
  - **Ambience** (keeping natural surrounding, eco-friendly interiors)
  - **Design** (max. natural light, low flow faucets)
  - **Behavior of both staff and fellow guests** (generating minimum waste, communicate to the guests about the eco-friendly aspects of the hotel)

Limitations

- It focused only on hotel services around **ocean cities of India**.
- This study **focuses on only green attributes and interaction with other general service attributes** is not considered.
- As hotel properties in the sampling frame are three-star hotels and above, **most of the respondents are higher-level business executives, have higher educational degrees and belong to higher income groups**.
- The **situational bias** of the guests, for example **mood, exposure to the hotel's green campaign in ocean areas, purposeful price variations**, may influence their experience and hence responses.
- There may be potential bias with the **study environment of the ocean already being eco-friendly**
- **Demographic variables** like **age, income, education and other variables like nationality and type of travel** (solo, family or group)**may also affect** the proposed relationships and need further investigation


KEEPING BLUE OCEANS GREEN:
CREATING TRUSTWORTHY
SUSTAINABLE GREEN HOTELS
AROUND OCEANS
Presented By:
Dr. ANSH GUPTA
PhD Marketing, IIM Lucknow
Delhi Technological University
(Visiting Faculty)

Introduction

Small & Medium Enterprises (SMEs)

- In the Sri Lankan context, SME classification based on the number of employees and annual turnover

Table 01: Defining SMEs in Sri Lanka

Company category	Manufacturing Sector		Service Sector	
	Number of Employees	Annual Turnover (Million)	Number of Employees	Annual Turnover (Million)
Micro	1-10	≤ LKR 15	1-10	≤ LKR 15
Small	11-50	≤ LKR 16-250	11-50	≤ LKR 16-250
Medium	51-300	≤ LKR 251-750	51-200	≤ LKR 251-750

Source: National Policy Framework for SME Development, Ministry of Industry and Commerce, Sri Lanka (2016)

Problem Statement

- Tourism has been recognized as an emerging sector in Sri Lanka.
- There are significant number of tourism-related SMEs have been started especially in tourism destinations.
- However, there is a huge gap related to systematic study which compares the performance of tourism-related SMEs and non-tourism SMEs.

Objectives of the Study

1. To recognise and profiling the tourism and non-tourism SMEs located in Hikkduwa, Galle, Mirissa and Tangalle in Southern Province of Sri Lanka.
2. To examine whether the profit of tourism related SMEs are higher profit than that of non-tourism SMEs.

Literature Review

Tourism

Tourism as an identifiable nationally important industry, which involves wide area sector of component activities including the provision of transport, accommodation, recreation, food and related services. (Australian Department of Tourism and Recreation 1975)

SMEs

Many studies have reported that economic growth requires participation from small business units (Battilana and Casciaro, 2012). They play a fundamental role by stimulating domestic and regional economic growth, reducing unemployment, stimulating market effectiveness or innovation based customer need fulfilment (Kaur and Sharma, 2014).

Tourism SMEs

The SME businesses in the hospitality and tourism industry include local restaurants that provide for the needs of the tourists; accommodation in the form of homestays, budget hotels and boutique hotels; transportation; and other necessities (Rashid et al., 2013; Konrad and Ekiem, 2011).

Tourism SME business activities classified in the hospitality and tourism into food and accommodation services, retail and souvenir, travel agent, transport and tour guide, and other services which are the requests of the visitors (Othman and Rosli, 2011).

Tourism impacts on SME businesses

Tourism creates opportunities for small enterprises, because startup cost and barriers to entry in this sector are relatively low and can even accessible to the poor. (UNESCAP, 2008).

With tourism development, the local people have golden opportunities to offer services or sell products to local and foreign tourists. (Dickman, 1992; Rogerson, 2004).

Methodology

Study Area

- Southern Province of Sri Lanka
- Four coastal tourism destinations - *Hikkaduwa, Galle, Mirissa and Tangalle*

Data collection

- Enterprise survey with 200 tourism SME holders (Snowball Sampling Technique)
- Focus Group Discussions (FGDs) – 05
- Key Informant Interviews (KIIs) - 05

Research Method

Data Analysis

Employed both Econometric and Descriptive Analysis

Table 02: Dependent and Independents variables of the study

Variable Name	Explanation	Expected Sign
Profit	Annul profit of the firm	
TOURISM	Dummy variable to represent SMEs related to Tourism TOURISM=1 for Tourism related SMEs TOURISM=0 for Non-Tourism SMEs	Positive when TOURISM = 1
lnSL	Log of annual sales revenue	Positive
lnTR	Log of number of employees who are trained annually	Positive
lnRD	Log of R&D expenditure	Positive
lnK	Log of total capital of the firm	Positive
lnL	Log of number of workers	Positive
lnHC	Log of the level of education of SME holder	Positive
lnAGE	Log of number of years in the industry	Positive
TYPE	Dummy variable for Type of SME TYPE=1 for Small TYPE=0 for otherwise (Medium and Large)	Negative when TYPE = 1

Source: Developed by authors based on literature survey

Results & Discussion

Profiling the SMEs: Key business types of SMEs

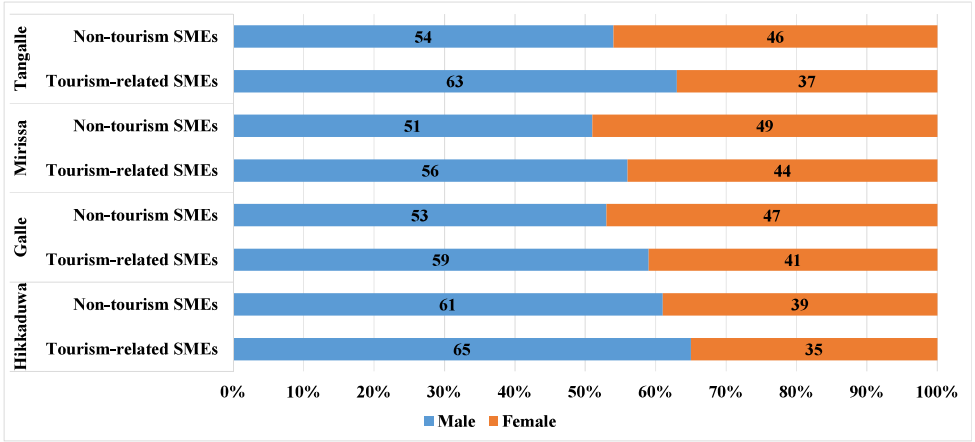
Table 03: Key business types of tourism-related and non-tourism SMEs

	Type of Business	Number of SMEs	Percentage
Non-tourism SMEs	Agriculture, farming and dairy	18	21.69
	Arts and crafts	12	14.46
	Apparel and bags	22	26.51
	Auto parts and maintenance	10	12.05
	Household items	11	13.25
	Cement and metalwork	8	9.64
	Other	2	2.41
	Sub Total of Non-Tourism SMEs	83	41.50
Tourism-related SMEs	Hotels & Homestay	39	33.33
	Spas & Ayurveda	21	17.95
	Cafes, Food & Beverages	15	12.82
	Travelling & Guiding	12	10.26
	Surfing & Diving	10	8.55
	Souvenirs & Handcraft	17	14.53
	Other	3	2.56
	Sub Total of Tourism-related SMEs	117	58.50

Source: Created by authors based on survey

Profiling the SMEs: Gender Composition of SME Holders

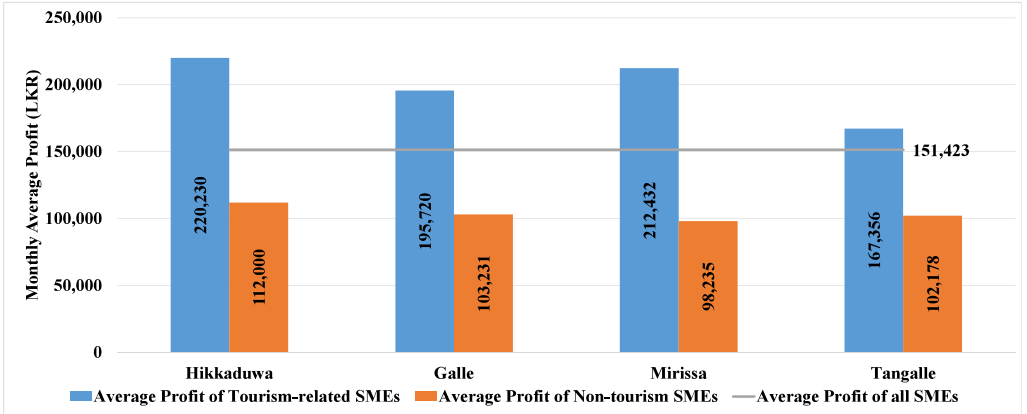
Figure 01: Gender composition of SMEs in four destinations



Source: Created by authors based on survey

Profiling the SMEs: Average Monthly Profit of SMEs

Figure 02: Average monthly profit SMEs in four destinations



Source: Created by authors based on survey

Profiling the SMEs: SME Holders' Level of Education

Table 04: Education level of SME holders

Destination	Years of Schooling of Tourism-related SMEs			Years of Schooling of Non-tourism SMEs		
	Maximum	Minimum	Average	Maximum	Minimum	Average
Hikkaduwa	19	5	12	19	8	12
Galle	19	8	13	19	5	13
Mirissa	18	8	10	19	8	12
Tangalle	19	8	12	19	8	12

Source: Created by authors based on survey

Impact of Tourism on the performance of SMEs

Variable Name	Model 01	Model 02	Model 03
TOURISM	0.7215*** (0.2314)	0.6548*** (0.2114)	0.5861*** (0.1945)
lnK	0.5894*** (0.2014)	0.5104** (0.2358)	0.4896** (0.2251)
lnL	0.7415*** (0.2547)	0.4896*** (0.1589)	0.3548*** (0.1358)
lnHC	0.0954** (0.0451)	0.0876** (0.0372)	0.0741** (0.0351)
lnSL		0.7894*** (0.2541)	0.6987** (0.3198)
lnTR		0.0278** (0.0129)	0.0626** (0.0289)
lnRD		0.0548* (0.0288)	0.2027 (0.5481)
lnAGE			0.9841 (0.6841)
TYPE			-0.0765** (0.0325)
Constant	0.2101*** (0.0192)	0.2326*** (0.0204)	2.3531*** (0.1050)
Number of Observations	200	200	200
R^2	0.5272	0.6056	0.7962
Prob on F	0.0000	0.0000	0.0000

- Three models were estimated by adding different independent variables gradually in order to check the robustness of the relationship between Tourism and profit of SMEs
- Estimated coefficients for Tourism in all three models are positive and statistically significant at 1% level. This relationship is consistent even when the models are controlled by other characteristics of firms.
- The estimated models are statistically significant at 1% level and also have higher R^2 value in model 03 (0.7962) representing higher level of goodness of fit.

Conclusion

- The survey identified six main business types in terms of non-tourism SMEs as agriculture, farming and dairy, arts and craft, apparel and bags, auto parts and maintenance, household items and cement and metalwork.
- The businesses as hotels and homestays, spas and Ayurveda, cafes, foods and beverages, travelling and guiding, surfing and diving and souvenirs and handcraft are recognized as common business types in relation to tourism-related SMEs.
- Majority of SME holders are male in tourism-related SMEs compared to non-tourism SMEs.

Conclusion

- The average profit of tourism-related SMEs are considerably higher than non-tourism SMEs.
- The education level of tourism-related SMEs are slightly lower than that of non-tourism SME holders.
- The econometric analysis confirm that tourism-related SMEs account for higher profit compared to non-tourism SMEs and this relationship between being a tourism-related SMEs and accounting for higher profit is highly statistically significant.

Recommendations

- To motivate people who are interested in doing a tourism-related SME in studied areas by providing necessary trainings and initial capital for them to start their business up.
- To establish a proper mechanism to inspect the service provided by SMEs in order to ensure a quality service for tourists.
- To Provide a solid public-private partnership

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Thank You

Blue Sukuk Ijarah as an Innovative Financing Instrument in Marine Tourism Sectors

The Case of Wakatobi

Alvin Joeshar[1], Ahmad Pakihadina Rahmatulloh[2] & Syifa Ainul Yaqin[2]

Fiji, February 2019

[1] Bank Indonesia
[2] Primagama Consulting

ADBInstitute

Chapter-1 Introduction

Chapter-I Background

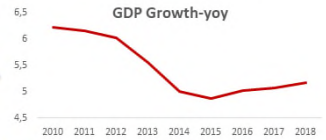
"Indonesia Needs New Driver to Accelerate Economic Growth"

Current Economic Circumstances

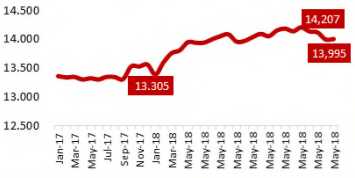
Global Drivers

- Prolonged Global Uncertainty caused by:
  i. US-China Trade War
  ii. Brexit
  iii. MENA Conflicts

1. Due to external and domestic pressure, Indonesia GDP is slowing down



2. Current Account Deficit is consistently widening, put some exposure to rupiah



Domestic Factors

- Corporate Investment are Creeping
- Commodity Price are declining
- Fintech Disruptions and Low-skilled Labor

Source: Bloomberg

Chapter-I Background

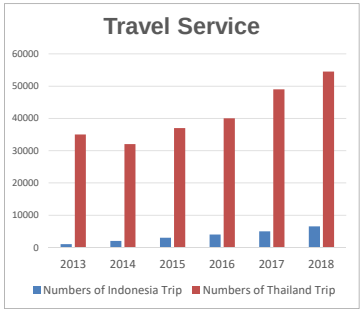
"In ASEAN Indonesia is the Biggest Archipelagical Countries, And Marine Sectors could be the Future of Our Economic Driver"

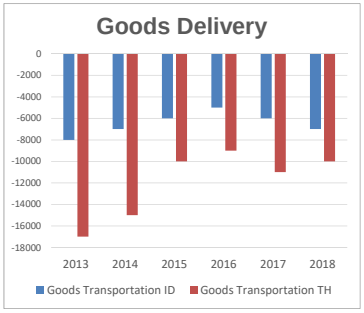
- **Indonesia has over 18.000 islands, making it the largest and most varied archipelago on earth.**
- Approximately 6000 of the islands are inhabited and the majority of the islands are yet to be named. It spans nearly 2 million square kilometers between Asian and Australia, with land area 1.811.569 square kilometers and water area 93.000 square kilometers.
- Indonesia, followed by Madagascar and Papua New Guinea, is the biggest island nation (an independent state consisting of one or more islands) both by population and by the size of the land area

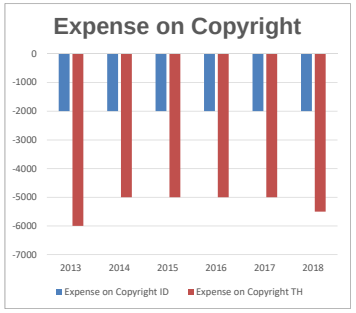
Chapter-I Background

"In term of Optimizing Tourism Sector, compared to Thailand, Indonesia has lot of homeworks"

- Indonesia's current account balance is still experiencing a deficit, due to the tourism sector is not yet optimal
- As a benchmark, Thailand has succeeded in optimizing the tourism sector through an effective tourism development and marketing strategy, so that it can cover the service deficit in other sectors.



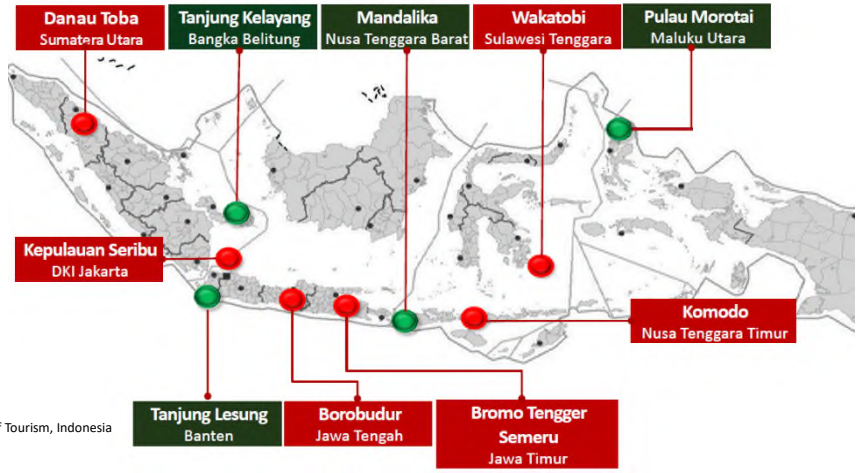




Source: Bank Indonesia

Chapter-I Background

"To Boost Tourism Sector Development especially in Marine Sectors, Government has pledged the commitment to develop 10 New Bali's"



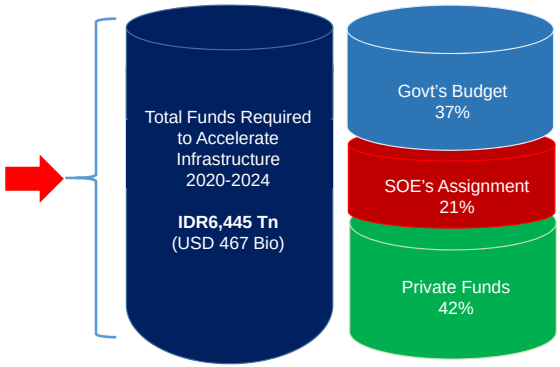
Source: Ministry of Tourism, Indonesia

Chapter-I Background

"However, the Government ambition constrained by the limited capacity of fiscal budget"

- To increase infrastructure stock from 43% of GDP in 2017 to 50% of GDP in 2424, infrastructure investment of Rp6,445T (6.1% of GDP) is needed, an increase of 34.3% from 2015-2019 investment of Rp4,796.2T.
- From the estimated financing of Rp 6,445 T, the private party is expected to contribute as much as Rp 2,707 T.
- **Nevertheless, the private sector is expected to only be interested in infrastructure projects with commercial IRR rates.**

Governments Ambition to Increase Infrastructure Stock



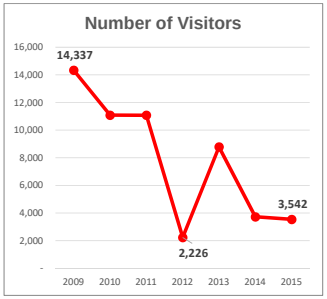
Source: Bappenas

Chapter-I Background

"Precedent of Unsustainable Marine Sectors Exploitation: The Rise and Fall of Bunaken Marine Park"

- Destructive fishing activities and boat anchoring had caused considerable damage to the shallow reef areas, and due to regular strong current sweeping over the reef, many corals were broken into rubble.
- In parallel, since the establishment of bunaken as marine park and make it broadly open to tourist, make the coral reefs bleaching damage even worse. Other issues in bunaken is also bade waste management.

Source: Dr. Mark Edman



Source: Ministry of Tourism Indonesia

Chapter-I
Objectives

Current State

Indonesia Needs New Driver to Accelerate Economic Growth

Gap

- State's Budget is Limited and the Urgency to invite private sectors
- Based on past experience, exploitation of Marine Sectors is having negative externalities and financial impact in the long run.

Our Proposal

Designate Innovative Financing with Below Characteristics

- Bridging the need for sustainable tourism sector expansion
- Ability to tap massive funds with a structure that meet tourism sector characteristics

Chapter-II
Literature Review

Coral Reef and Marine Coastal Area

- **International Coral Reef Initiative** (ICRI, 2018) was defined Coral reefs as part of a larger ecosystem that also includes mangrove forests and seagrass beds. Mangroves are salt tolerant trees with submerged roots that provide nurseries and breeding grounds for marine life, which then migrate to the reef.
- Based on **data conservation area of Marine and Fisheries Ministry of Indonesia**, Wakatobi is an acronym of four large islands, such as the wangi-wangi islands, kaledupa, Tomia, and Binongko. Being a marine tourism destination (snorkeling, diving) in Wakatobi district, Southeast Sulawesi Province. There is a marine national park which covers an area of 1.39 million hectares. This national park has 25 pieces of coral reefs with a circumference of the coast of the coral islands along the 600 km. More than 112 species of coral from 13 families.
- According to **Ecotourism Society (1991)**, ecotourism is Pure travel to natural areas, to understand the culture and natural history of the environment, be careful not to change the integrity of the eco-system, while generating economic opportunities that make conservation of natural resources beneficial to local society.

Protection & Conservation Program

- **Conservation Programs for Prevention**

using the **Marine Protected Area (MPA) Method**. In accordance with the study of Magris Rafael A. et al (2017) which focuses on biodiversity, connectivity, and strengthens ecosystem resilience to global warming by designing Marine Protected Areas (MPAs) especially on coral reef ecosystems. through spatial priorities of coral reefs in Brazil by dividing into two zones, namely the "no take zone" and the "multiple use area zone".

- **MPA Method is in line with the study of Wakatobi tourism management plan (2013)** The Wakatobi National Park area is divided into six zones with different designations, namely fisheries, aquaculture and ecotourism. The six zones consist of three no-take zones (Core Zone, Marine Protection Zone and Tourism Zone), two use zones (local and general), and one special land zone designated for infrastructure development for the community and government. The Core Zone is a fully protected area. The Maritime and Tourism Protection Zone is prohibited for fishing activities, but allows for non-destructive uses, such as recreational diving, both of which are intended to protect important resources and function as a fish bank. Very extensive Local Use Zone specifically intended for local people of Wakatobi. The General Use Zone is for deep sea pelagic fisheries

Chapter-II
Literature Review

What is sukuk

- **Auditing and Accounting Organization of Islamic Financial Institution** (AAOIFI, 2003) defines Sukuk as "Certificates of equal value representing undivided shares in the ownership of tangible assets, usufructs and services or (in the ownership of) the assets of particular projects or special investment activity"
- **International Financial Service Board** (IFSB, 2009) defines sukuk as "frequently referred to as "Islamic bonds", are certificates with sukuk representing a proportional undivided ownership right in the tangible assets, or a pool of predominantly tangible assets, or a business venture (such as a mudarabah contract). These assets may be in a specific project or investment activity in accordance with Shari'ah rules and principles".

Classification of Sukuk

- Sukuk can be classify into two categories (Paltinieri, A. et al, 2019) such as : asset-backed and asset-based sukuk.
- **Asset backed Sukuk**

is The former involves the true sale of the underlying asset which is legally transferred to the sukuk holder through a Special Purpose Vehicle (SPV). The transferred asset will no longer remain in the book of the originator. In the event of default, the sukuk holder will recourse to the asset and will have a full priority over unsecured creditors.

- **Asset-based Sukuk**

involve the transfer of beneficial ownership to the SPV in the form of trust, while legal ownership remains with the originator. In the event of default, the sukuk holder can only recourse to the originator and will be ranked among other unsecured creditors.

Blue Sukuk Instrument

- our paper use a **blue sukuk as instrument**.

Refer to **Green Bond Principal (GBP) issued by International Capital Market Association (ICMA, 2018)**, Green Bonds are all types of bond instruments for which proceeds will be applied exclusively to finance or refinance, in part or in whole, new and / or Green Projects (environmentally friendly projects) that meet existing conditions and are GBP-aligned.

According to **World bank (2018) Blue bonds** are debt instruments issued by governments, development banks or others to collect capital from affected investors to finance project based marine and ocean that have positive environmental, economic and climate benefits. Blue bonds inspired by the concept of green bonds. The Blue bond is financial instrument in the form of debt securities, another form of green bond, which is implemented in the marine and sustainable fisheries sector.

Finally we can difines **blue sukuk** as another form of blue bond based on sharia principles.

Chapter-II
Literature Review

Benchmarking Blue and Green Bond

- Blue bond Seychelles (BBS)
- Sea Blue Bond Nordic Investment Bank (NIB)
- Green Sukuk Mudharabah PT Sarana Multi Infrastruktur (PT SMI)
- Green Sukuk Mudharabah PT Purashaan Listrik Negara (PT PLN)

Instrument	Principal	Period	Coupon (%)
BBS	USD 15 Million	5 year	6.50%
NIB	USD 200 Million	10 year	0.375%
SMI	IDR 320 Billion	5 year	7.80%
PLN	IDR 186 Billion	5 year	7.70%

Source : World Bank 2018; Prospectus NIB 2019; Prospectus PT SMI 2018; Prospectus PT PLN 2017

Chapter-II
Literature Review

Scenario Analysis

Scenario Analysis:

Scenario analysis used to determine whether a project is feasible for investment. We modified scenario analysis modelling conduct by UN Environment, ICRI, and International Sustainibility Unit of Sweden Government (2018). Using 3 scenarios such as :

a. Optimistic scenario assuming income rises 10% and fixed costs;
b. a moderate scenario with the assumption that fixed income and costs will increase by 10%;
c. The pessimistic scenario assumes that income falls by 10% and costs go up by 10%.

The scenario analysis is conducted by considering various stages consists of: forecasting the number of tourists, calculating the net present value (NPV), calculating the Internal rate of return (IRR), and structuring income and costs on ecotourism objects in wakatobi.

Linier Regression

Forecasting the number of tourists

using the Simple Linear Regression model (Gujarati and Porter, 2010) :

$y = a + bx + e$ .....(1)

where:
y = Number of tourists in wakatobi
a = constanta
b = variable coefficient x
x = the number of year wakatobi tourists
e = error term

Chapter-II
Literature Review

Net Present Value (NPV)

Calculation of Net Present Value (Frensidy, 2014) :

$NPV = \sum_{i=0}^{n} \frac{CFi}{(1+k)i} - I\_0$ .....(2)

Where :
i = period of time
Cfi = year cash flows-i
K = discount rate
I_0 = Initial investment

Hypothesis:
If NPV > 0 → accepted, and
If NPV < 0 → rejected

Internal rate of Return (IRR)

Calculation of Internal Rate of Return (IRR) (Frensidy, 2014) :

$\frac{CF1}{(1+IRR)} + \frac{CF2}{(1+IRR)2} + \cdots + \frac{CFn}{(1+IRR)n} - I\_0 = 0$ .....(3)

Where :
CF = Cash Flow period 1, 2, 3, ..., n.
IRR = Internal Rate of Return
I_0 = Initial Investment

Hypothesis:
If IRR > K → accepted, and
If IRR < K → rejected

Chapter-III
Protection & Conservation Program

Additional Program supporting Prevention Conservation Program

In addition to the coral reef conservation program, we will also form related programs that will support conservation programs including :

- **Sustainable Fishery Program (SFP)**

World wildlife Fund (WWF, 2019) defines SFP as Establish certification for early adopters in the ornamental fish trade and identify the feasibility of certification for wild caught grouper and lobster fisheries and for farmed grouper. Establish fisheries management schemes that include 'No-Take Zones' for replenishment purposes, within seven sites (Bunaken, Wakatobi, Cendrawasih, Karimunjawa, Riung, West Bali and Ujung Kulon) and establish national policy strategies on no-take-zones for all MPAs.

According to Food And Agriculture Organization (2007), approximately the cost of sustainable marine certification includes pre-assessment of USD 20,000 and full assessment of USD 500,000. the cost depending on the complexity and size of the fishery.

- **extensification of education**

to protect ecosystems associated with the conservation of coral reefs, mangrove forests and seagrass beds. so that they do not capture marine products using dangerous tools (such as dynamite, cyanide bombs, and other toxic materials) for the sustainability of the underwater ecosystem.

- **Creating a Center of Entrepreneurship (CoE)**

CoE with a focus on training fishermen to produce added value from their catches, one example is the cultivation and processing of sea cucumbers that have high economic properties.
According to the World Bank (2019) there are opportunities for bioindustry to develop through sustainable sea cucumber cultivation so as to improve the welfare of coastal communities.

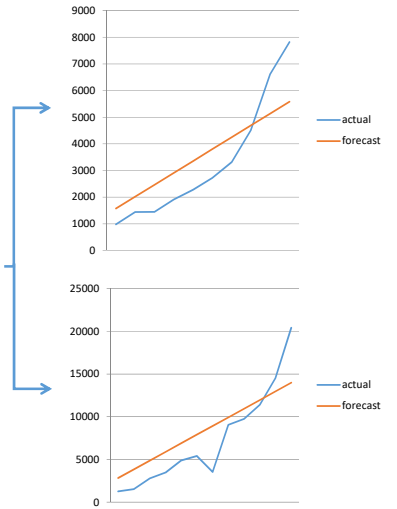
- **Creating a Waste Water Management**

as a pereventive step to prevent the accumulation of waste that will pollute the environment and plastic waste that is on the surface of the sea blocking the sun's rays is one of the causes of inhibition of coral reef growth. The blue investment sustainability program conducted by the Nordic Investment Bank (NIB) focuses on waste water management (Project-specific impact report for the 2019 NIB Blue Bond).

Another instrument that can be used is the imposition of **excise duty for plastics**. We propose plastics will be categorized as dangerous materials for the safety of the earth and humans.

Chapter-III
Linier Regression : Forecasting Number of Tourist

Based on data on the number of wakatobi tourists, the modeling used is simple linear regression.



Modeling data on the number of domestic tourist :
$Y = 445{,}28X - 1988{,}4$
Also obtained R^2 by 85%

Modeling data on the number of foreign tourist :
$Y = 1014{,}5X - 4268{,}3$
Also obtained R^2 by 79%

Chapter-III
Scenario Analysis : IRR & NPV Before PPP

In the NPV and IRR calculations there are two parameters that we use, such as : costs and income

Income components include entrance fees, vehicle rentals, hotel room rentals, tour packages, diving equipment rentals, and kiosk rentals.

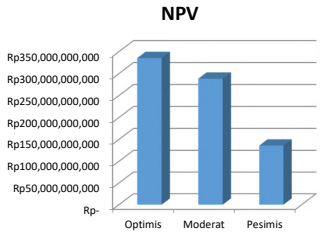
The cost components include amenities in the form of information centers, hotels, restaurants, kiosks, coral reef conservation costs and diving equipment rental centers

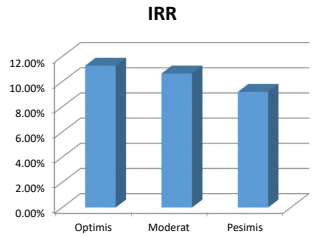
Then do the calculation by dividing based on the analysis scenario:
- Optimistic
- moderate
- pesimistic
With a discount by 7.76%

OPTIMISTIC SCENARIO ANALYSIS
- **NPV : IDR 335,4 Billion**
- **IRR : 11,27%**

MODERATE SCENARIO ANALYSIS
- **NPV : IDR 288,4 Billion**
- **IRR : 10,65%**

PESIMISTIC SKENARIO ANALISIS
- **NPV : IDR 136,2 Billion**
- **IRR : 9,19%**





Chapter-III
Scenario Analysis : IRR & NPV After PPP

In this research, NPV and IRR are divided into two types.

Availability Payment (AP)

Optimistic Scenario :
NPV = IDR 748,3 Billion; IRR = 17,52%

Moderate Scenario :
NPV = IDR 681,3 Billion; IRR = 16,81%

Pesimistic Scenario :
NPV = IDR 533,5 Billion; IRR = 15,14%

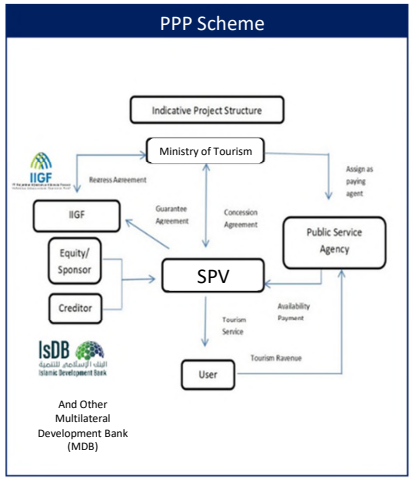
Viability Gap Fund (VGF)

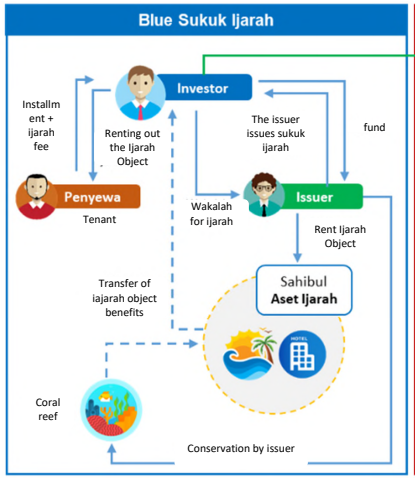
Optimistic Scenario :
NPV = IDR 308,9 Billion; IRR = 18,15%

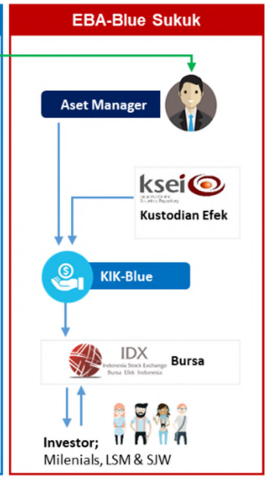
Moderate Scenario :
NPV = IDR 292,9 Billion; IRR = 17,96%

Pesimistic Scenario :
NPV = IDR 140,6 Billion; IRR = 16,35%

Chapter-III
PPP Scheme, Sukuk Ijarah and *Exit-Strategy for* Investor







Chapter-IV
Closing : Conclusion and Suggestions

Conclusion

1. Based on scenario analysis, Internal Rate of Return (IRR) is competitive and feasible to investment
2. The issuance of ijarah blue sukuk through public private partnership (PPP) approval is feasible the investment
3. Will be the first in the world as blue sukuk instrument and as an alternative to Islamic financing
4. Sharia financial market deepening through securitization with asset-backed securities (EBA) as a step to anticipate liquidity risk

Suggestions

For Regulators
- Blue Sukuk can be a benchmarking for innovative Sharia-based financing models
- In the initial phase, there should be incentives in the form of facilities for listing on the capital market, including tax incentives
- The regulation is accommodative in market development

For Issuer
- Prepare feasibility studies for various eco-tourism areas that have the potential as an underlying for the issuance of blue sukuk ijarah
- In collaboration with Multirateral Development Bank (MDB) i.e. with Asian Development Bank (ADB) as an enhancer project to make it more interesting

for investor
- As a means of a new investment model that is environmental friendly
- So that NGOs and SJW can be actively involved in retail participation

BLUE ECONOMY AND SUSTAINABLE TOURISM MANAGEMENT IN COASTAL ZONES:

LEARNING FROM EXPERIENCES

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Ningbo University, P.R. China

Paper's Outline

1. INTRODUCTION

- Within the context and framework of Blue Economy, tourism is increasingly receiving recognition for its contribution to sustainable and equitable growth.
- It is accepted that tourism could make an important contribution to many of the world's most pressing challenges (UN, Economic Commission for Africa, 2016a).
- It is also believed that the appropriate approach to address the above challenges is to plan and implement an Integrated Coastal Zone Management (ICZM) based on foundations of sustainable development (Cicin-Sain and Knecht, 1998; Kanji, 2006).
- The planning and management frameworks for coastal zone should fully consider the multifaceted nature of the coastal environment.
- These frameworks are considered as tools for sustainable coastal zone management with tourism as a backbone (Marafa, 2008; UNEP, 2009). Tourism in coastal areas brings along both positive and negative effects on the environment as a result of activities exerted upon.

INTRODUCTION

- This paper focuses on the interrelationship between tourism management and environmental protection in coastal zones within the general context of Blue Economy.
- The paper's aim is twofold:
  - ✓ to briefly discuss a number of case studies in this field; and
  - ✓ to suggest a framework of challenges to be addressed and critical success factors and guidelines to be adopted by planners, managers and decision-makers for coastal areas.
- In Section 2 the concept and framework of Blue Economy are outlined.
- This is followed by the synoptic presentation and discussion of 4 case studies on plans and projects in the field of integrated management of coastal areas with a special focus on coastal tourism management.
- The discussion of the cases allows to highlight the main lessons to take from the practice and identify the critical success factors (CSF) for efficient and effective implementation of such programs.

2. BLUE ECONOMY: CONCEPT AND FRAMEWORK

- The 'Blue Word' is made of vast lakes and rivers and an extensive ocean resource base. The Blue Economy is the aquatic and ocean-based economy and covers both aquatic and marine spaces, including oceans, seas, coasts, lakes, rivers, and underground water. It encompasses a range of productive sectors, including fisheries, aquaculture, tourism, transport, shipbuilding, energy, bioprospecting, and underwater mining and related activities (UN/ECA, 2016a).
- Blue economy is a concept and framework for policy-making and investment relating to the preservation and exploitation of the marine environment.
- Within this context, this paper has examined a number of case studies with the aim of taking some lessons from the planning, management and implementation of programs and projects in the field of sustainable tourism management in coastal zones.

3. CASE STUDIES: BRIEF PRESENTATION

- Sustainable tourism management plans and programs within the context of Blue Economy have been implemented or are under way around the world. The practice has developed a relatively good understanding of the approaches and guidelines, as well as frameworks and techniques for organising and implementing programmes.
- Therefore, practitioners and scholars alike should take some lessons from experiences. This is the aim of our study; to capitalize on international experiences to improve efficiency and effectiveness of such programs. Means: case studies analysis.
- The cases emphasise the implementation of sustainable tourism management within the general frameworks of Blue Economy and of ICZM. The criteria for selecting the 4 cases studies presented in the following subsections were four, namely:
  - ✓ representativeness: from various regions/continents; a broad geographical range, from Europe, Africa, Asia and Oceania;
  - ✓ the implementation of Blue Economy and sustainable tourism management programs;
  - ✓ The advanced stage of implementation; and
  - ✓ the availability of information and data.
- These cases from around the world generate new insights and applied knowledge.

3.1 MUSES Project, Northern Adriatic Sea, Italy

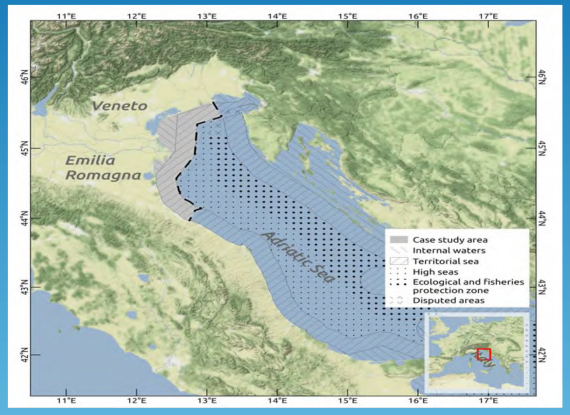


Figure 1. Geographic area with marine boundaries in the Adriatic Sea

MUSES Project, Northern Adriatic Sea, Italy

- This case study analyses the Multi-Use (MU) combinations that can be triggered and/or further expanded - considering existing experiences and initiatives - by tourism as a driver (Saba, 2015).
- The MUSES project analysed the role of coastal and maritime tourism as major driver for the development of MU opportunities in the Northern Adriatic. The MUSES project investigated the potential role of coastal and maritime tourism as a driver for MU development involving other sectors that could highly benefits from tourism-related MU.
- The MU overview performed through the desk analysis and stakeholder engagement led to the identification and exploration of 4 tourism-driven combinations:
  - ✓ tourism and fisheries,
  - ✓ tourism and aquaculture,
  - ✓ tourism and environmental protection,
  - ✓ tourism and underwater cultural heritage (UCH).

3.2 COAST PROJECT, KENYA

This case analyses and highlights the collaborative actions for sustainable tourism (COAST) project within the framework of Blue Economy in West Africa.

- The COAST project, whose main focus is on coastal communities, is an initiative supported by the Global Environment Facility (GEF) in partnership with UNEP, the United Nations Industrial Development Organization (UNIDO), and the UNWTO, which covers 9 countries in Africa (Cameroon, Senegal, Kenya, Tanzania, Mozambique, the Gambia, Ghana, Nigeria, and the Seychelles).
- The main goal of the project is to support and enhance the conservation of globally significant coastal, environmental, and marine ecosystems and associated biodiversity in sub-Saharan Africa through the reduction of the negative environmental impacts resulting from coastal tourism.
- The 2 main outcomes of the project are expected to be:
  - ✓ Sustainable tourism approaches for reducing pollution, contamination, and environmental degradation from coastal tourism demonstrated in the sub- Saharan African context; and
  - ✓ National and local mechanisms supporting sustainable tourism governance and management identified and enhanced to facilitate uptake of Best Available Practices (BAPs) and Best Available Technologies (BATs).
- Kenya is implementing demonstration projects in all three COAST Project thematic areas, namely:
  - ✓ Ecotourism,
  - ✓ environmental management systems, and
  - ✓ reef and marine recreation management.

3.2 COAST PROJECT, KENYA

Figure 2 – Kenya and Watamu Beach

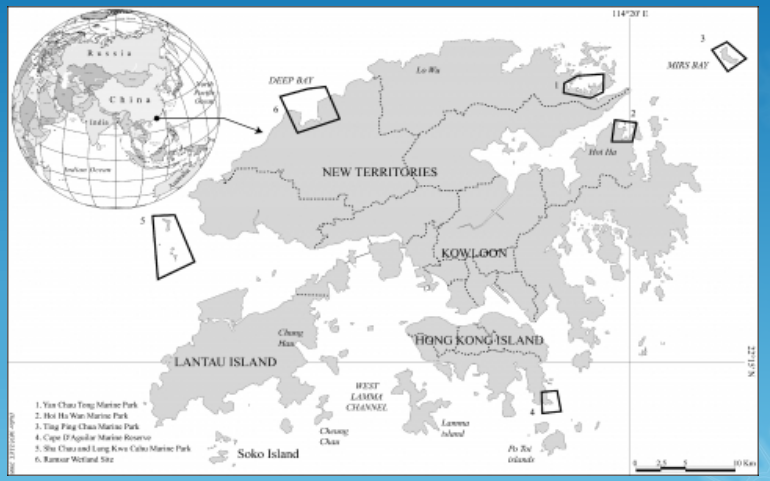
3.3. MARINE PROTECTED AREAS PARKS, HONG KONG, CHINA

This case from China highlights the imperative to integrate sustainable tourism management in coastal and marine zone environment.

The Context: The Coastal Zone

- The total area of Hong Kong is about 1100 km2 and it accommodates over 260 islands adding up to more than 800 km of coastline with its territorial waters extending over 1827 km2 (Liu and Hills, 1997). Some of the islands of Hong Kong offer a wide array of nature-based attractions.
- In Hong Kong, as in other coastal cities, tourism constitutes a pillar of the economy and a significant factor in the transformation of the coastal environment. One of the main coastal resources are beaches and backshore areas, scenery, habitats for flora and fauna, coastal landforms which provide amenity for recreation and tourism (Beatly *et al.*, 1994).
- Although Hong Kong epitomizes a successful tourism destination, an environmental-friendly tourism is attractive as the diversity of habitats and life forms makes the Hong Kong coastal area unique. Hong Kong is endowed with natural coastal and marine resources that could be used for planning and management of marine tourism. It is believed that there is an imperative for an effective and sustainable tourism management in order to ensure that the ecological richness will continue to provide avenues for environmental-friendly tourism (Marafa, 2008).

Figure 3. The protected area system: Marine Parks and Reserves in Hong Kong, China



3.4 GREAT BARRIER REEF MARINE PARK, AUSTRALIA

This case focuses on sustainable management strategies in protected natural environments. The case discusses how successful partnerships between the tourism industry and protected areas can be established. Stakeholder management and stewardship extended by collaborative partnerships, public participation, mutuality and government coordination are central concepts in this case.

Short Description

- The Great Barrier Reef Marine Park (GBRMP) was one of the world's first marine parks, established in 1975. The GBR World Heritage Area extends to a vast 348,000km2 and within this domain approximately 400 private tourism operators accommodate 1.8 million visitor days and 2.3 million passenger transfers each year (GBRMPA, 2018).
- Recognised as one of the world's best managed coral reef ecosystems, the GBR is potentially better placed to handle the pressures of accumulating risks than many other reef systems. The Great Barrier Reef Marine Park Authority (GBRMPA) works within a strong legislative framework to manage the marine park and employs a range of regulatory tools and management plans to ensure that tourism is managed in a sustainable manner.
- This case highlights the key strategies of GBRMPA to manage tourism in Australia's World Heritage Listed GBR, and the proactive leadership role of GBRMPA in balancing tourism development with environmental protection.
- Detailed information on the GBR can be obtained through the interactive spatial tool which provides a visual representation using Google maps of tourism operations along the Reef http://www.gbrmpa.gov.au/

Figure 4 – Great Barrier Reef Marine Park, Australia

4. INTEGRATED APPROACH, CHALLENGES AND CRITICAL SUCCESS FACTORS FOR SUSTAINABLE TOURISM MANAGEMENT IN COASTAL ZONES

- The development of coastal tourism and its management are of critical importance within the context of Blue Economy framework. All 4 case studies highlighted the importance of adopting an integrated approach and implementing multi-use strategies to managing sustainable tourism in coastal areas.
- They also pointed out the need to focus on practical actions of environmental protection. Likewise, they suggested the imperative for a comprehensive framework for sustainable management of tourism, along with other productive activities, in the coastal zones and (Willmott, 2000; UNEP, 2009). Tourism should occupy central place into related plans since it plays an important role in most communities (Jennings, 2004).
- Sustainable tourism management needs to be approached and planed in the context of promotion and implementation especially in coastal areas; leading to the management of all resources in sustainable and effective way (Clark, 1996; Kay and Alder, 1999). Furthermore, for the successful implementation of tourism in the coastal and marine environment, the challenges are cross-sectoral and multifaceted.
- The only strategy to surmount these challenges is to have a multidisciplinary approach to resource management.
- This paper argues that the experiences and practical implementation provide some lessons to take, based on the synoptic analysis and discussion of 4 case studies from regions around the world.

4.1 Main Lessons: A Synopsis

This is a summary of the main lessons to take from the four case studies. In order to achieve a sustainable tourism management within the context of Blue Economy the following considerations, aims/objectives and actions are needed: (classified into 3 areas/headings)

- ***Approaches***
  - ✓ Tourism can play an important role in the protection and presentation of marine protected areas.
  - ✓ The Blue Economy framework, along with the ICZM approach, is a path toward sustainable development.
  - ✓ An intersectoral approach linking all sectors together in the coastal/maritime zone.
  - ✓ Stimulate dialogue and involvement in development/management/environment decision-making.
  - ✓ A key aim of coastal resources management is conservation for sustainable use.
- ***Management Strategies***
  - ✓ Elaboration of a vision, strategy/action plans is very useful.
  - ✓ Collaboration is a cornerstone concept; collaboration of all stakeholders contributes to projects' success.
  - ✓ Stakeholders involvement, engagement and consultation is a must.
  - ✓ Multiple-use management is appropriate for most coastal resource systems.
  - ✓ Involvement of all levels of government in coastal management plan.
  - ✓ Creation of inter-sectoral networks able to design and promote integrated services/offerings.
  - ✓ Inter-sectoral cooperation among different institutions, and among public institutions and business operators.
  - ✓ Establish appropriate governance structures and coordination mechanisms.
  - ✓ Create and maintain a stakeholder network for developing and implementing collaborative sustainable practices that create shared (economic, social and environmental) value to all stakeholders
  - ✓ Plans for tourism management should be sensitive to the needs of local population on coastal zones.
  - ✓ Need for further scientific research and dissemination of best practices.

4.1 Main Lessons: A Synopsis

- ***Implementation: Control, Monitoring of Progress and Evaluation of Results***

- ✓ The practical implementation of Blue Economy and the ICZM approach is of critical importance for their acceptance; it is showing how they work in real-life situations can be a convincing element in the process of its acceptance by major decision-makers, planners and managers.
- ✓ Small-scale projects have better chances of success but as their replicability is restricted, they have limited multiple effects.
- ✓ Small-scale tourism industry plans can enhance community development as well as the uptake of new technologies to minimize environmental impacts.
- ✓ Build up and operation of effective partnerships for tourism
- ✓ Suitable, effective and efficient management offers potential for successful and viable solutions.
- ✓ Measurement of the progress: There is no robust evidence of measurement of the progress made from/resulting from the implementation of the Blue Economy approach. The GBR constitutes the only exception.
- ✓ The resulting benefits should be measured and evaluated. A need to developing a set of indicators to measure the results/outcomes of Blue Economy and sustainable tourism management plans.

All above lessons point out the imperative for integrated framework for coastal management.

4.2 Imperative for an integrated framework for sustainable coastal management

- Literature suggests that there must be a framework for symbiosis between tourism and conservation that will basically help strike a balance between conservation and economic development in the context of coastal environments (Shi et al, 2001; Jennings, 2004; Marafa, 2008). Therefore, there is a need for a CZM framework. The latter has developed from the struggle to find a mechanism to balance the demands on coastal resources, promote their sustainable use and manage individual activities including those associated with tourism.
- Management practices under the CZM are especially important for resolving the growing conflicts in this zone and ensuing sustainable tourism management (Wong, 1998; Kay and Alder, 1999; Shi *et al.*, 2001). These integrative practices and sustainable coastal tourism should include provisions:
  - ✓ for coastal management; and
  - ✓ to protect and conserve coastal environments.

- Consequently, there is an imperative for an integrated/comprehensive approach to coastal management and a flexible framework. This framework should be adaptable and flexible susceptible to take into account and to address the related issues and challenges in effective manner.

4.3 Issues and Challenges

- The management of coastal zone and coastal tourism based on sustainability principles have made a significant progress over the last decades (UNEP, 2009). Blue Economy approach and framework are relatively recent concepts.

- The interrelationship and integrated approach face with a series of challenges that must be addressed if these management frameworks are to produce the needed outcomes in coastal zones.

- This paper could summarize the following issues and challenges that tourism management in the coastal zone has to address and surmount within the context of coastal zone management, classified into 3 fields/areas (See following table 4):
  - ✓ Planning and management
  - ✓ Governance
  - ✓ Implementation.

Table 4 - Issues and Challenges in Managing Coastal Zone and Coastal Tourism

Fields	Issues and Challenges
Planning and management	- ***Approach*** used is mainly sectoral, setting barriers for integrated management - ***The limited influence*** (and thus weak integration) of environmental concerns - ***Management focus***: the prevalence of traditional land-use planning instead of a focus on resource management. - ***Traditional administrative systems***. - ***Resource management issues***: habitat conservation and restoration, ocean resources management, coastal hazards, promoting economic growth and sustainable development. - ***Coastal safety***. - ***Support management decision-making***.
Governance	- ***Appropriate models and schemas:*** suitable partnerships. - ***Participation and public awareness***: No active participation in public affairs; - ***Institutions***: limited capacity or inefficient institutions. - ***Coordination*** able to addressing institutional, financial and other obstacles/barriers. - ***Cooperation***: better coordination of the existing governmental bodies. - ***Information***: better dissemination of the existing information. - ***Capacity-building*** improvement of the environmental education
Effective Implementation	A number of barriers to a more effective implementation of management: - ***Culture of decision-making*** and the (partial…) implementation of decisions. - ***Funding*** (insufficient) - ***Economic analysis/measurement***: analysis of costs, benefits and impact on stakeholders. - ***Appropriate monitoring***

4.4 Critical Success Factors

The factors of critical importance are as:

- ✓ Political support, proper institutional arrangements, participatory mechanisms and the commitment of sufficient resources.
- ✓ Need to achieve comprehensive policy and legislation (as a tool of implementing policy).
- ✓ Imperative for integrated coastal planning and management action plans.
- ✓ Institutional cooperation across sectors and levels of government, is beneficial to policy making as well as to project performance.
- ✓ Elaborate mechanisms as part of the concrete promotion of sustainable coastal management.
- ✓ Consolidate the scientific and administrative capacity of coastal management.
- ✓ Regional cooperation and international support by eligible agencies and organisations.
- ✓ Involvement and engagement of local community and stakeholders.
- ✓ Coordination: vertical (local and national levels of government) and horizontal (different sector) coordination.
- ✓ Establishing best practices and dissemination of international expertise and know-how.
- ✓ Effective implementation with adequate progress monitoring mechanisms.
- ✓ Assessment of outcomes: performance evaluation processes and metrics to demonstrate the benefices to all stakeholders involved and gain their continuous support.

5. Concluding Remarks and Study's Limitations

- ❑ The case studies presented in this paper are drawn from diverse situations and contexts, demonstrating the varying settings and circumstances of coastal zones. Despite their diversity in context it has been possible to glean the lessons from each case in terms of planning approaches, management processes and strategies for coastal tourism management.
- ❑ Based on the discussion, the study makes a contribution in the following issues of integrated coastal zone management: the aim/objectives and suitable strategies to achieve the desirable outcomes, the challenges and issues to address in the practical implementation, as well as the CSFs in attaining effectiveness and efficiency of the related plans.
- ❑ The paper also highlights that an integrated management framework is a suitable tool for making tourism more sustainable in the coastal and maritime zones. In the current context related of climate change, coastal tourism has to undertake some significant changes. The 'beach, sun and fun' offering has to be enriched with the wider offering of experience opportunities, including some off-beach activities. The ideal scenario for sustainable tourism management would be to spread the offering over a larger zone, integrating of inland areas (Innovation for Sustainable Tourism, 2019; Jennings, 2004).
- ❑ In this regard, the integrated management constitutes the best tool to assist coastal zones in ensuring more balanced development and sustainable management, as well as in increasing their attractiveness in terms of quality experience opportunities.
- ❑ Finally, it is worth acknowledging the limitations that our study encompasses. The study has the inherent limitations/drawbacks of a qualitative research project (case studies analysis).

Many thanks!!