



INDO-PACIFIC ENVIRONMENTAL SECURITY FORUM

14-17 AUGUST 2023
SRI LANKA



August 2023

2023 INDO-PACIFIC ENVIRONMENTAL SECURITY FORUM

Dear Forum Participant,

Welcome to Colombo, Sri Lanka. The Sri Lanka Navy and the United States Indo-Pacific Command are pleased to co-host the 2023 Indo-Pacific Environmental Security Forum (IPESF), in partnership with the Australian Defence Force, New Zealand Ministry of Defence, and the Arizona State University's Julie Ann Wrigley Global Futures Laboratory.

While environmental stewardship, climate change, and regional security cooperation are not new concepts, the nexus between environment, climate change, and security is an emerging theme of increasing prominence. The Forum's program over four days provides a valuable opportunity to comprehensively explore environmental security challenges and solutions through multiple lenses including both defense and civil perspectives.

The relationships you build here can affect meaningful environmental security outcomes into the future. Fostering a strong civil-military community of practitioners will have a multiplier effect in building resilience and capacity across Asia and the Pacific. Enhancing mutual trust, collaboration and alignment on shared environmental security challenges helps underpin cohesion and partnership between states.

Please take full advantage of your time at the Indo-Pacific Environmental Security Forum and enjoy all that the Sri Lanka has to offer.

With warmest regards,

Rear Admiral RAPP Rathnayake
DGO-SLN
Navy Headquarters
Sri Lanka

GAVIN J. GARDNER
Brigadier General, U.S. Army
Director, Logistics and Engineering
U.S. Indo-Pacific Command

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INFORMATION PAPER

SUBJECT: 2023 Indo-Pacific Environmental Security Forum (IPESF), Colombo, Sri Lanka

1. Purpose: To provide stakeholders with the concept, background, description and objectives of the 2023 IPESF to be held in Sri Lanka 14-17 August 2023.

2. Environmental Security and U.S. Indo-Pacific Command (USINDOPACOM): Environmental security can be broadly defined as countering vulnerabilities caused by the abundance or scarcity of environmental resources and/or degradation. Security related to water, waste, energy, food, biosecurity, climate change and other non-traditional threats fit within this definition and can harbor greater security challenges if left unattended.

The annual IPESF is the cornerstone of USINDOPACOM's Environmental Security Program, and with the Indo-Pacific Environmental Security Partnership (IPESP), engages with regional militaries and civilian agencies on these topics and our mutual environmental stewardship obligations. Increasingly, environmental factors can affect national and regional security by exacerbating societies towards hunger, poverty, instability and conflict. These environmental factors and others often have cross-border impacts. USINDOPACOM believes security for all can improve by sharing lessons-learned, and encouraging governments and their militaries to plan, operate, and execute in an environmentally sustainable manner that supports regional cooperation as well as developing resilient communities and practices. Environmental security projects and cooperation are platforms for relationship building and can help open dialogue on more contentious topics.

Project areas have included oil spill responsiveness, wildfire suppression, illegal fishing and maritime environmental security, solid waste management, and water resource management. The program is ready to expand this list given regional needs as they arise.

3. 2023 IPESF – Colombo, Sri Lanka: The Sri Lanka Navy (SLN) and United States Indo-Pacific Command (USINDOPACOM) are hosting the 2023 IPESF in Colombo, Sri Lanka 14-17 August 2023. The 2023 IPESF will focus on the following themes:

- 1) Climate Change and Security
- 2) Maritime, Ocean, and Water Security
- 3) Impacts of Urbanization and Land Security
- 4) Building National and Regional Resilience

The IPESF will include presentations, panel sessions, and group activities to share lessons learned and best practices among environmental security stakeholders, as well as develop actionable plans to address environmental security challenges through project development and workgroup development workshops.

USINDOPACOM works closely with host nation stakeholders to identify the most pressing environmental security topics to include on the IPESF agendas. Below is a list of past events and topics covered:

Past IPESF Events

Year	Country Host	Environmental Security Topics Covered
2011	USA	1) climate change adaptation, 2) environmental sustainability, 3) water resource management, and 4) disaster preparedness.
2012	Indonesia	1) Regional disaster response 2) pollution, 3) deforestation, 4) overfishing and 5) water supply management in the ASEAN context (Association of Southeast Asian Nations).
2013	Australia	1) sustainable environmental management in military operations, 2) military support to disaster relief operations, 3) managing bio-security risks in the military context, and 4) adapting to climate change impacts.
2014	Maldives	1) water, 2) waste management, 3) resource protection, and 4) energy.
2015	Thailand	1) climate change, 2) protection of the commons, 3) military environmental programs, and 4) project concept development.
2016	Fiji	1) sustainable ocean resources, 2) protecting the coastal zone, 3) resiliency to extreme and frequent weather events, and 4) regional project collaboration.
2017	USA	1) environmental security best practices in the Indo-Pacific Region, 2) climate change, 3) water security, 4) waste, 5) energy, 6) State Partnership Program, and 7) biodiversity on military lands.
2018	Mongolia	1) establishing an environmental security habit of dialogue, 2) food-water-energy nexus, and 3) env. security in contingency operations.
2019	New Zealand	1) climate change, 2) environmental security transformation, 3) multilateral approaches to environmental security, 4) coastal planning, 5) marine pollution, 6) biosecurity, and 7) resource protection.
2021	Virtual	Indo-Pacific Environmental Security Partnership Working Group Focus: 1) Education, 2) Policy, 3) Networking, 4) Mitigation
2022	Maldives	1) Climate Security and Role of Defence Forces 2) Addressing Small Island Nation Environmental Security Concerns 3) Ocean and Water Security 4) Women, Peace, and Security and 5) Climate Change Challenges and Solutions

*For additional information on IPESF events and activities, please visit: www.ipesf.org.

4. Event Organization: Organizers from the host nation and USINDOPACOM work as a team to organize the IPESF. The USINDOPACOM team usually travels to the host nation two times for planning and other coordination; interim progress reviews meet via conference call. The agenda and invitation list are developed collaboratively. USINDOPACOM provides funding for the event venue, as well as travel expenses for eligible military and civilian participants. In like manner, the host nation provides ground transportation, hosts an “ice-breaker” social, and provides funds (if needed) for host nation and other attendees to participate.

5. Points of Contact:

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Day One

Climate Change and Security



Indo-Pacific Environmental Security Forum

DAY
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Agenda – Day 1, 14 August 2023 (Monday) *OPENING SESSION*

Master of Ceremony: Lieutenant Commander Stephen Woodham, U.S. Navy
Opening Session Lead: Sub Lieutenant Sashinidu Jayalath, Sri Lanka Navy

0700-0745	REGISTRATION <i>Participants are requested to complete registration by 0745, and be seated by 0755</i>
0750-0755	Arrival of the Invitees
0755-0800	Arrival of the Commander of the Sri Lanka Navy Vice Admiral Priyantha Perera
0800-0805	Arrival of Mr. Ruwan Wijewardena, the Senior Advisor to HE the President, Sri Lanka and the Honorable Mrs. Julie Chung, U.S. Ambassador to Sri Lanka
0805-0810	Arrival of the Officials to Lotus Ballroom
0810-0815	Introduction to IPESF 2023 by Master of Ceremony (MC)
0815-0820	Oil Lamp Lighting Ceremony followed by Welcome Dance
0820-0825	Commitments made by Sri Lanka Navy to Ensure Environment Security (Video)
0825-0830	Welcome Remarks by Vice Admiral Priyantha Perera, the Commander of the Sri Lanka Navy
0830-0835	Remarks by Mr. Ruwan Wijewardene, the Senior Advisor to HE the President, Sri Lanka
0835-0840	Remarks by The Honorable Mrs. Julie Chung, U.S. Ambassador to Sri Lanka
0840-0845	Group Photo
0845-0915	BREAK & REFRESHMENTS



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Opening Session

Vice Admiral Priyantha Perera, Commander of the Navy, Sri Lanka

BIOGRAPHY



Hon. Ranil Wickremesinghe, the President and Commander - in - Chief of the Armed Forces of Democratic Socialist Republic of Sri Lanka appointed Vice Admiral Priyantha Perera, RSP **, USP, ndu, psc, as the 25th Commander of the Sri Lanka Navy on 18th December 2022, after being elevated him to the rank of three-star Admiral.

Vice Admiral Priyantha Perera is a proud product of the Royal College, Colombo. He joined the Sri Lanka Navy in the Executive Branch in 1987 as an Officer Cadet of the 05th Intake of the General Sir John Kotelawala Defence University. He was awarded the 'Sword of Honour' for the best in the batch upon successful completion of naval training from the Naval and Maritime Academy, Trincomalee. He was commissioned in the rank of Acting Sub Lieutenant in 1989 and graduated from the General Sir John Kotelawala Defence University with a Bachelor of Arts Degree (Defence Studies) with honors.

In pursuing academics, he has completed a Post Graduate Diploma in International Relations at Bandaranaike Centre for International Studies and has also been conferred with a Master's in Science Degree (Defence Studies) in Management from the General Sir John Kotelawala Defence University. He also holds a Master's Degree of Maritime Policy with Distinctions from the University of Wollongong, Australia. Additionally, in pursuing of professional progress he has obtained specialization in Clearance Diving from the Indian Naval Diving Training School and in Principle Warfare from the Pakistan Navy. He is an alumnus of the US Naval War College, from where he has passed the US Naval Staff Course, and National Defence University of People's Liberation Army, People's Republic of China, having attended Defence and Strategic Studies Course in 2018-19 and conferred with a Master of Military Sciences Strategic Studies.

He has rendered more than thirty-five years of distinguished service to the Sri Lanka Navy with a reputation of a dedicated, professionally competent and an inspiring leader. His illustrious career has been enriched with vast experience in the Sri Lanka Navy, in various capacities and the officer has held command at sea and earned victories in battle as a Squadron Commander in the prestigious 4th Fast Attack Flotilla, the teeth arm of the Sri Lanka Navy fleet, as well as a Group Commander in the Special Boat Squadron at the height of the looming terrorist activities. He is also one of the Commanding Officers who led the Special Boat Squadron of the Navy and has been the Officer in Charge of Naval Diving and Salvage Unit, spearheading some crucial salvage work. At sea he has commanded a series of Fast Attack Craft, Fast Gun Boats, Landing Craft, Fast Passenger Craft, Sa'ar 4 Class Fast Missile Vessel and his last command at sea has been SLNS Sagara, an Offshore Patrol Vessel.

His key shore appointments include the Commandant SLNS Shiksha, the main recruit training center of SLN, Director Naval Training, Director Naval Operations, Director Naval Foreign Cooperation, Director Maritime Special Forces, Head of the Naval Research Wing, Deputy Area Commander North Central Naval Area, Commander Southern Naval Area, Commander Northern Naval Area, Deputy Chief of Staff and finally as the Chief of Staff of the Sri Lanka Navy.



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Vice Admiral Priyantha Perera is a recipient of Rana Soora Padakkama (RSP) thrice for conspicuous display of gallantry in combat and Uttama Seva Padakkama (USP) for unblemished service and devotion to duty. The senior officer has been commended by former Commanders of the Navy eight times for his leadership and professional conduct in challenging circumstances and tasks.

His prowess in sports is very versatile ranging from aquatic sports of swimming, water polo, windsurfing, kayaking and speed boating to adventure, cycling, musketry, fencing and archery among other things. He holds the record of being the first to circumnavigate Sri Lanka in a sea kayak and formerly held office as General Secretary of National Association of Canoeing and Kayaking in Sri Lanka, working diligently to promote paddle sport in the country. He is also an International Technical Official in Canoe Sprint and Dragon Boat discipline of International Canoe Federation and a qualified level one coach in canoeing. Vice Admiral Priyantha Perera is married to Mrs. Mala Lamahewa and they are blessed with two sons Sachith (24) and Shamal (21).



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Mr. Ruwan Wijewardene, Senior Advisor on Climate Change to the Sri Lanka President



BIOGRAPHY

Dinendra Ruwan Wijewardene (born 4 August 1975) is currently the Senior advisor to the President Ranil Wickremesinghe on Climate change. Popularly known as Ruwan Wijewardene, he sworn as the State Minister of Defense of the Democratic Socialist Republic of Sri Lanka on 12th January 2015 and is one of the youngest politicians to hold this important portfolio in the modern history of our country. He is also former Mass Media non-cabinet Minister and the Deputy Leader of the United National Party.

Hon. Ruwan Wijewardena hails from a well-connected political dynasty that had produced many freedom fighters and national leaders who had led the country since its independence from colonial powers. The first prime minister of independent Ceylon, as it was then called was his great grandfather. His paternal grandfather was a press baron who pioneered press freedom by establishing the Lake House newspapers group.

Public Life and Political Beginning

Being born into a political dynasty made public service a natural choice for the Honorable Minister who entered politics on the invitation of the Leader of the United National Party (UNP) and the incumbent President Hon. Ranil Wickramasinghe. He saw this as an opportunity to continue the legacy of his ancestors and is committed to serve the people of the nation with integrity and dignity.

As a young ranker of the UNP, the budding politician showed immense potential and signs of attaining higher echelons of leadership. These qualities were identified by the party hierarchy who made him the Chairman of the Young Professionals Organization of the United National Party, a post he held from 2002 to 2004.

In June 2001, Mr. Wijewardene was included as a Member of the Working Committee of the UNP, the main decision-making body of the Party and he holds his position to date.

He reached a milestone in his political life upon being appointed as the Chief Organizer of the UNP for the Biyagama Electorate in August 2006. Biyagama is an important electorate in the Gampaha District and the second most populous in the country.

In 2009 on contesting the Provincial Council Elections he was elected to office as a Member of the Western Provincial Council after securing the secured the highest preferential votes of the then main Opposition, the UNP, in the District.

From April 2011 to July 2016 he acted as the Chairman of the National Youth Front which is the principal youth wing of the UNP.

He gained to national prominence when he was entered to Parliament after successfully contesting the Parliamentary Elections in 2010. Even though he was representing the main opposition party his service to the people was greatly reflected by the election results when he received the highest preference votes for the UNP in the district.

For Mr. Ruwan Wijewardene to be offered an important portfolio as Defence is testimony to his personal ideals of politics. His appointment as State Minister of Defence by His Excellency the President



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Maithripala Sirisena subsequent to the Presidential polls in January 2015 is reaffirms the qualities that were identified in him by his political mentors.

Family Lineage and Early Life

Mr. Ruwan Wijewardene was born on 04th of August, 1975 as the youngest child to Mr. Ranjith Wijewardene and Mrs. Ranjani Neela Senanayake Wijewardene. His father is the heir to one of the largest a newspaper publishing houses established by the late D.R. Wijewardene, the legendary press baron and freedom fighter and his mother hails from an eminent political dynasty.

The first Prime Minister of Ceylon the Late Honorable D.S. Senanayake is Mr. Wijewardene's maternal great grandfather. The Late Honorable Dudley Senanayake, the second Prime Minister of Ceylon who was elected twice to the office was his grand uncle.

Late Don Richard Wijewardene the pioneering entrepreneur who established the Lake House Newspapers is his paternal grandfather. Don Richard Wijewardene played a pivotal role in the independence movement of the country.

Mr. Wijewardene is also the nephew of the first Executive President of Sri Lanka the Late Honorable J.R. Jayewardene and also is a close kinsman of the present Premier Hon. Ranil Wickremesinghe.

School Life and Education

Mr. Wijewardene began his school life in 1981 when was enrolled into one the best private schools in the country, St. Thomas' Preparatory School in Colombo. A brilliant student in academe he not only exhibited excellence in studies but was also an avid sportsman. Cricket and rugger were his forte which he conquered with ease. He began to reflect inborn leadership qualities as early as his school days both in the playing field and in the school. In 1991 the school management bestowed upon him the honor of being appointed the Head Prefect.

After completing primary and secondary education at St. Thomas he later joined Stafford International School in 1992 and completed his London A/L s.

In 1995, Mr. Wijewardene left the country to the United Kingdom to continue his higher studies. He entered the Sussex University, a prestigious seat of learning in the UK. He returned to his motherland where his destiny to greatness awaited with a BA in Politics (Specializing in Third World Politics).

Due to his visionary desire to assiduously serve his people and the nation he continues to seek ways and means to enhance his knowledge, experience and exposure both within and outside the country. He as recently as in 2013 completed a leadership course at the East West Center in Hawaii, which was designed for young elected Representatives of Asia and the Pacific.



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The Honorable Mrs. Julie J. Chung, U.S. Ambassador to Sri Lanka



BIOGRAPHY

Nominated by President Joe Biden and confirmed by the U.S. Senate, Ambassador Julie Chung has been the U.S. Ambassador to Sri Lanka since February 2022. A career member of the Senior Foreign Service with the rank of Minister-Counselor, Ambassador Chung has previously held senior positions throughout the Indo-Pacific and Western Hemisphere.

Prior to her current role, Ambassador Chung served as the Acting Assistant Secretary in the U.S. Department of State's Bureau of Western Hemisphere Affairs. She also has extensive experience in the Bureau of East Asian and Pacific Affairs, including as the Acting Deputy Assistant Secretary for Japan, Deputy Chief of Mission in Cambodia, and Economic Counselor in Thailand. In addition, she has served at the U.S. embassies in Iraq, Colombia, Vietnam, and Japan, and the U.S. Consulate in Guangzhou, China. She also served as an advisor on

nonproliferation discussions of the Agreed Framework with North Korea while working in the Office of Korean Affairs in Washington.

As a child, Ambassador Chung immigrated to the United States from Korea and was raised in Huntington Beach, California. She received a B.A. in Political Science from the University of California San Diego and an M.A. in International Affairs from Columbia University and joined the Foreign Service in 1996 in the first cohort of the Thomas R. Pickering Fellowship program. Ambassador Chung has been the recipient of numerous awards, including the Presidential Rank Award and the Secretary's Distinguished Honor Award, and speaks Korean, Japanese, Spanish, and Khmer.



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Agenda – Day 1, 14 August 2023 (Monday) *THEME: Climate Change and Security*

Moderator Day 1: Dr. Ananda Mallawatantri, Technical Advisor, Office of the President Sri Lanka

0915-0920	Overview of IPESF Agenda Mr. Chris Sholes, Environmental Security Program Manager, U.S. Indo Pacific Command (USINDOPACOM)
0920-0930	Introduction to the Session Dr. Ananda Mallawatantri, Technical Advisor, Office of the President, Sri Lanka
0930-0950	Military Logistics & Supply Chain Resilience in the Face of Climate Change Brigadier Carla Watts, Director General, Support Branch Headquarters Joint Operations Command, Australian Defence Force
0950-1010	Addressing Energy Insecurity & Increasing Climate Resiliency for Small Island Developing States in the Indo-Pacific Region Mr. James Ellsmoor, CEO, Island Innovation & Mr. Viliame Kasanawaga, Senior Consultant, Pacific Region Infrastructure Facility, Fiji
1010-1030	Radical Defense Decarbonization – Global Assessment of Strategies and Investments Ms. Shiloh Fetzek, Associate Fellow, International Institute for Strategic Studies
1030-1115	Climate Change and Security Panel Session Moderated by Dr. Ananda Mallawatantri
1115-1215	LUNCH BREAK
1215-1335	Building Climate Change Resilience with Allies & Partners Panel Session – Sri Lanka as a Case Study Scene Setting by Mr. Stephen Frano, Climate Change Impact Program Manager, USINDOPACOM Panelists: 1) Commodore Buddhika Jayaweera, Sri Lanka Navy 2) Ms. Nihani Riza, USAID Colombo 3) Ms. Valerie Hickey, World Bank & 4) Ms. Maryruth Belsey Priebe, Pacific Forum
1335-1340	<i>Admin Brief – Workshops Overview for Day 1 and Move to Workshop Sessions</i> LCDR Stephen Woodham
1340-1455	DAY 1 Workshops 1A. Employing Data Science in Climate Risk Management – Lead Facilitator, Mr. Robert Kalei Miller, Senior Disaster Services Analyst, Pacific Disaster Center 1B. Mobilizing Finance for Climate Action – Lead Facilitator, Ms. Valerie Hickey, Global Director for Environment, Natural Resources and Blue Economy, World Bank
1455-1530	BREAK & MOVE TO NEXT WORKSHOP SESSION
1530-1645	Second Workshop Session (1A → 1B, 1B → 1A)
1645-1650	Participants regroup in Lotus Room
1650-1700	Administrative Notes by MC – End Day 1
1900-2100	ICE BREAKER Hosted by Sri Lanka Navy



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Master of Ceremony

Lieutenant Commander Stephen Woodham, U.S. Navy



BIOGRAPHY

Lieutenant Commander Woodham is a native of Montgomery, Alabama. He graduated from Auburn University in 2003 with a Bachelor of Civil Engineering. He was commissioned as an officer in the Navy Reserve via Direct Commission in 2011.

LCDR Woodham was assigned to U.S. Naval Construction Battalion TWO FOUR in Huntsville, AL. He served as Engineering Projects Officer, overseeing construction projects, and served as Detachment Officer-In-Charge of Bessemer, ensuring readiness of 65 Seabees. In 2013, he reported to U.S. Naval Mobile Construction Battalion FOURTEEN, serving as Assistant Operations Officer and Alpha Company Commander. In 2014 he deployed as part of the Global War on Terror with NMCB FOURTEEN in support of the Combined Joint Task Force Horn of Africa. He served as Assistant Officer-In-Charge, Operations Officer, and Alpha Company Commander of the 89-person

Detachment. From 2018 to 2021 he served as Current Operations Officer, FIRST Naval Construction Regiment, overseeing execution of Regimental operations and subordinate battalion deployments.

He currently serves as Engineering Plans Officer, INDOPACOM J445, overseeing execution of Environmental Security projects in South Asia. Executed projects have included an Oil Spill Response Workshop in Sri Lanka, National Response Plan for Maldives. Project in the planning phase include mangrove forest rehabilitation in the Maldives and Sri Lanka, coastal restoration in Sri Lanka, and reforestation project in Mongolia, as well as the Indo-Pacific Environmental Security Forum to be held in Sri Lanka in 2023.

LCDR Woodham is a Professional Engineer in the State of Alabama, Georgia, and Tennessee, is a certified Project Management Professional, and is qualified JPME Level 1. He is also a qualified Seabee Combat Warfare Officer. His personal awards include the Navy and Marine Corps Commendation Medal (two awards) and Navy and Marine Corps Achievement Medal (one award), and various service medals.

As a civilian, LCDR Woodham is employed as a Principal Engineer and Geotechnical Team Lead for Thompson Engineering, focusing on Geotechnical Engineering and Construction Materials Testing. His civilian work has focused on geotechnical engineering for energy, industrial, and transportation clients.



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Day 1 – Climate Change and Security Presentations and Panel Session

Overview of IPESF Agenda

Christopher Sholes, Environmental Security Program Manager, U.S. Indo-Pacific Command



BIOGRAPHY

Chris Sholes is the Environmental Security Program Manager within the USINDOPACOM Engineering Division. His duties include overseeing environmental compliance for bilateral exercises (e.g. Talisman Saber), and planning the Pacific Environmental Security Conferences and international environmental workshops. He also monitors environmental impact assessments developed by the service components and coordinates projects with State of Hawaii offices and others on environmental matters. His previous experience includes project management of various environmental remediation projects throughout Hawaii and the Pacific including soil and water remediation and UXO clearance in Saipan, Guam, Japan and Korea, Palmyra and other remote islands. He has five degrees including two from the London School of Economics in International Relations and Economics and an MS in Systems Engineering from the Naval Postgraduate School. He is a certified contracts manager (CPCM) and certified project manager (PMP) from the respective US national certifying organizations.

Since its inception in 2010 he has developed the Environmental Security Program as a means for the U.S. Army Corps of Engineers, IWR, 130th Prime Power and other DoD components to engage internationally and innovatively, furthering the USPACOM engagement strategy to enhance partner nation resilience, capacity building, facilitate interoperability, and build trust and access for occasions of mutual benefit.

Introduction to the Session

Dr. Ananda Mallawatantri, Technical Advisor, Office of the President, Sri Lanka



BIOGRAPHY

Dr Ananda Mallawatantri is currently the Advisor to the President of Sri Lanka on Environment, Climate Change and Green Finance, Dr Mallawatantri has more than 20 years of international development experience in USAID, UNDP, and IUCN. Within his professional career of over 40 years, Dr Ananda worked with the Governments of Sri Lanka and United States, UN and International Agencies, Chambers of Commerce, and Industry, while contributing to Research and University Teaching. Dr Mallawatantri, holds a BS degree in Chemistry and Diploma in Business Administration from University of Colombo, Masters in Environment Science and PhD in Soil Physics from Washington State University, USA.



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Military Logistics and Supply Chain Resilience in the Face of Climate Insecurity

Brigadier Carla Watts, Supply Chain Officer, Joint Logistics Command, Department of Defence, Australia



BIOGRAPHY

Brigadier Watts is both a generalist officer and a strategic logistics specialist with extensive experience operating in the joint and Army environment. She has studied, deployed and served in a variety of command, representative, generalist and logistics appointments. Brigadier Watts' career highlights include leading integrated, joint and multi-national work forces both in Australia and on operations including appointment as a Commanding Officer of a Joint Logistics Unit and time with coalition forces in both Afghanistan the Middle East.

More recently, as Director Strategic and Sensitive Issues Management – Army, Brigadier Watts assisted the Chief of Army in managing Army's most strategic and complex personnel matters and as Director Logistics – Army, she led efforts to enable and sustain the land component of the Joint

Force. She is proud to have served as Chief of Staff to the Chief of Defence Force enabling her an insight into the mechanics of the strategic centre. Brigadier Watts has commanded a Joint Logistics Unit, developed key joint future logistics concepts and strategies, managed large support contracts and resources and led diverse teams in support of a Joint dependency. Brigadier Watts has recently assumed her appointment as Director General Support, where she is responsible for the delivery of operational health, personnel and logistics support effects to the Australian Defence Force.

Abstract

Climate risks affect critical supply chain issues of cost, speed and responsiveness, quality, and the uncertainty of disruption. Defence Forces logistics must deliver persistent support and sustainment for operations. The COVID Pandemic has tested the system and 'supply chain issues' are accepted reasons as why late, or inferior products delivered. An optimal Defence logistics network must be resilient through disaggregated and dispersed mutually supporting nodes that enhance redundancy and survivability. Climate change is a slow-moving crisis that is going to last a very long time, and fundamental change is required to support supply chain resilience.



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Addressing Energy Insecurity & Increasing Climate Resiliency within the Indo-Pacific

James Ellsmoor, CEO, Island Innovation and Mr. Viliame Kasanawaqa, Senior Consultant, Pacific Region Infrastructure Facility, Fiji



BIOGRAPHY

James Ellsmoor is an award-winning serial entrepreneur, writer, and influential advocate for island sustainable development. He is widely recognized for his work in renewable energy and sustainability, having contributed extensively as a columnist for Forbes and regularly interviewed for international publications. With a systems approach encompassing climate, oceans, energy, tourism, and conservation, James focuses particularly on small island developing states (SIDS) and sub-national island jurisdictions (SNIJs). Through initiatives such as the Virtual Island Summit, he brings together representatives from diverse islands

worldwide, showcasing their leadership in global sustainability and addressing pressing issues like climate action. As a sought-after speaker and consultant, James's expertise and ability to communicate complex concepts drive positive change and shape the future of sustainable development on a global scale.



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Viliame Kasanawaqa, Senior Consultant, Pacific Region Infrastructure Facility, Fiji



BIOGRAPHY

Viliame is an experienced Professional with a demonstrated history of working in Pacific Small Islands Developing States. Skilled in Project Management, Business Process, Negotiation, Operations Management, Project Risk, and Lean Management. Strong consulting professional with a Bachelors of Engineering from Deakin University (Aust) Master of Science focused in Project Management- Built Environment from University of Newcastle (Aust) and Master of Arts Research Islands and Small States, Malta.

He is the Executive Director of ShipWrecked Lab, a living demonstrative lab for adaptive solutions to increase resilience in PSIDS. The organization was founded in 2011 to focus on reducing persistent vulnerabilities and strengthen island resilience, through a development path that improves human well-being and social equity while significantly reducing environmental degradation. To accomplish this, the islands must take a whole-of-society approach to forge an economic, resilient, and sustainable path forward.

Working in the Pacific for over two-decade now, it is clear that the most pressing problems the islands encounter are transnational in nature, so meeting these challenges requires multilateral cooperation, particularly to achieve the necessary transformative action at the lowest possible cost.

To build island resilience, the policymakers and practitioners must recognize that in order to reduce persistent vulnerabilities and build resilience in PSIDS, development, and resilience must be addressed holistically, taking into account the Islands' adaptive capacities in delivering transformative change, in the context of intra and inter SIDs experiences offered through the mutual exchange of knowledge/information and understanding about issues of common concern in SIDs is one that will contribute to the capacity to build capacity in the Pacific region.

Abstract

The Indo-Pacific region, which includes many small island nations, is particularly vulnerable to the impacts of climate change and energy insecurity. This presentation will examine the current state of energy security in the region, the role of renewables in providing a secure energy supply, and the potential for further expansion of renewable energy sources in the region. The presentation will first provide an overview of the current energy landscape in the region, with a particular focus on the high reliance on imported fossil fuels and the vulnerability of island nations to energy insecurity. It will then examine the potential for renewables to provide a secure and reliable energy supply, focusing on the need to develop more comprehensive energy strategies, increase energy efficiency, and invest in renewable energy technologies. Finally, the presentation will consider the role of regional and international organizations in promoting the development of renewable energy in the region. This will include an overview of the initiatives and policies being implemented, as well as an analysis of the potential opportunities and challenges associated with renewable energy development in the region. By transitioning to renewable energy, small island states can reduce their dependence on costly and polluting fossil fuels, and also increase their resiliency to climate change.



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Radical Defense Decarbonization – Global Assessment of Strategies and Investments

Shiloh Fetzek, Associate Fellow at the International Institute for Strategic Studies (IISS)



BIOGRAPHY

Shiloh Fetzek is an Associate Fellow at the International Institute for Strategic Studies (IISS) and a Senior Fellow at the Center for Climate and Security in Washington, DC. She was previously a researcher in the Defence and Military Analysis Programme at the IISS, the Head of the Climate Change and Security Programme at the Royal United Services Institute (RUSI), and a Senior Research Associate for Environment, Climate Change and Security at International Alert. She also contributes to the UN Climate Security Mechanism's work on preventing violent extremism, among other programming areas. As

a security analyst, the aim of her work is to advance nuanced understandings of the climate security nexus and catalyze preventative responses, particularly from the security community.

Abstract

This presentation reviews global developments in defense decarbonization, comparing national strategies and approaches for reducing or achieving net zero emissions in the coming decades, and how they are addressing common barriers to achieving emissions reduction targets.

An increasing number of countries, mainly in Europe and North America but a growing number in the Indo-Pacific, are planning how to make the defense energy transition without compromising capabilities. Their approaches have many similarities, such as implementing existing technologies while laying the groundwork to address the more difficult engineering issues – and much more significant sources of emissions – around alternative fuels and propulsion. Yet commitments to defense net zero are being made before the technologies are mature, with inherent uncertainties around the delivery of these significant change programs.

This presentation compares countries' approaches, the contours of their policies, the types of investments they are making, and the institutional infrastructure created for delivering this agenda. It presents findings from an IISS research project executed on behalf of Singapore MINDEF's Strategic Futures Group.



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Building Climate Change Resilience with Allies and Partners – Sri Lanka as a Case Study Panel Session

Moderated by Stephen Frano, Climate Change Impact Program Manager, U.S. Indo-Pacific Command



BIOGRAPHY

Mr. Stephen Frano serves as the Climate Change Impacts (CCI) Program Manager at the Center for Excellence in Disaster Management and Humanitarian assistance. He leads the CCI team responsible for establishing a robust INDOPACOM capability to anticipate and respond to the security impacts of climate change. The CCI program is dedicated to working across the DOD, interagency, and partner nations to increase resilience, reduce fragility, and enhance climate security for the Indo-Pacific region. Stephen originally joined INDOPACOM in April 2013 as the Public Private Partnerships Program Manager with the Strategic Partnerships Office. In this role Stephen supported far-ranging efforts in such areas as environmental security, disaster risk reduction, energy grid resilience, and cyber security. Prior to that Stephen worked for the National Oceanic and Atmospheric Administration Office of Coastal Management focused on ocean resources management and community resilience issues for Hawaii and U.S. Territory Coastal Zone Management Programs. Stephen started his career working for the Territory of American Samoa's Department of Commerce focused on environmental planning and hazard mitigation. Stephen obtained his bachelor's degree in integrated science and technology from James Madison University and his master's degree in environmental management from Duke University



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Panelist 1: Commodore Buddhika Jayaweera, Director of Naval Training, Sri Lanka Navy



BIOGRAPHY

Commodore Buddhika Jayaweera enlisted to the Sri Lanka Navy in October 1995 through General Sir John Kotelawala Defense University. At KDU he was conferred with Bachelor of Science (Defense Studies) degree with honors. He did his initial Naval training at Naval and Maritime Academy, Trincomalee.

He had completed both sub specialization and specialization training in India. He is a qualified Navigator. Further he has successfully completed Junior Naval Staff Course and passed Staff Course becoming First in Order of Merit. Further he was conferred with Masters Degree in Defence Studies from University of

Kelaniya, Sri Lanka and Masters Degree in Maritime Affairs from World Maritime University, Sweden where he gained professionalism in maritime safety/security in international shipping and marine environment administration. He is a Post Graduate Diploma holder in International Relations and obtained Advanced Diploma in Liner Trade from Institute of Chartered Shipbrokers, UK. He is an Associate Member of Nautical Institute (AMNI) and Chartered Institute of Shipbrokers (MICS) UK. Commodore Buddhika Jayaweera has held numerous command, staff and instructor appointments during his Naval career both onboard and ashore. In particular, he has commanded an Offshore Patrol Vessel (OPV) of full load displacement of 1155 MT. Currently he is the Director Naval Training at Sri Lanka Navy Headquarters. As an Instructor he served at the Naval and Maritime Academy as Officer-In-Charge of Navigation School in two occasions and the first ever Navigation Specialization Course was conducted during his tenure. Further he is officiating as the Principal of Merchant Marine Training School of the Sri Lanka Navy. He is a visiting lecturer at the Mahapola Ports & Maritime Academy in the subject area MARPOL, SOLAS and ISPS Code. He also served as the Deputy General Manager at Marine Environment Protection Authority, the apex body to prevent, control, and manages marine pollution in Sri Lanka's Marine Environment. The first ever national level oil spill contingency exercise was conducted during his period at MEPA. Moreover, Commodore Buddhika Jayaweera has more than 22 years' experience in the Sri Lanka Navy and 4 years' experience in the Sri Lanka Coast Guard. He took part in the successful maritime rescue operation of MT New Diamond which paved the way to avert one of the worst marine environment disasters that could have occurred in the IOR. In addition he was involved in the response activities related to maritime casualties of MSC Daniela in 2017, MV Euro Sun and MV X-Press Pearl in 2021. He has delivered number of presentations in the field of maritime safety, security and marine environment protection and published papers as well.



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Panelist 2: Nihani Riza, Project Management Specialist, USAID Colombo



BIOGRAPHY

Nihani is a Project Management Specialist with the Economic Growth Office for the USAID Mission for Sri Lanka and Maldives. Nihani has been with the Mission for ten years and currently oversees the Climate Adaptation Project in Sri Lanka and Maldives and Public Financial Management Project in Maldives. She also supports the Mission's Ocean Plastic Reduction Project and Global Clean Cities Blue Ocean Program, and efforts to integrate and advance USAID's Climate Strategy in the Mission's work. Being a dual citizen of Sri Lanka and Maldives, Nihani loves that her work gives her the opportunity to support the development of both countries she calls home.

Panelist 3: Valerie Hickey, Global Director of Environment, Natural Resources and the Blue Economy (ENB), World Bank



BIOGRAPHY

Valerie Hickey is the Global Director of Environment, Natural Resources and the Blue Economy (ENB) at the World Bank. Valerie takes this role having worked as the manager for Advisory and Operations in the Climate Change Group, where she oversaw the implementation of the World Bank's commitments on climate change, climate mainstreaming and climate finance, and before that the Practice Manager for ENB in Latin America and the Caribbean where she managed a cross-sectoral team that supported countries and communities on issues related to climate change, sustainable forest management, integrated conservation and development, integrated coastal zone management, fisheries, pollution management and

environmental health, environmental economics and environmental risk management.. Valerie holds a Ph.D. in Environmental Science and Policy from Duke University.

Panelist 4: Maryruth Belsey Priebe, Director for Women, Peace, and Security Programs, Pacific Forum



BIOGRAPHY

Maryruth is the Director for Women, Peace & Security (WPS) Programs and a Senior Fellow at Pacific Forum International where she researches at the intersection of gender and climate security. Maryruth holds a Harvard International Relations master's degree where she also received a Climate Leaders Fellowship, and recently completed her thesis, "Gender All the Way Down: Proposing a Feminist Framework for Analyzing Gendered Climate Security Risks" which was nominated for the Dean's Award. Maryruth has written numerous articles on sustainability and climate change, is a member of the Research Network on Women, Peace and Security in Canada, and is a Teaching Fellow at Harvard Extension School.



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Day One Workshops

1A. Employing Data Science in Climate Risk Management

Robert Kalei Miller, Senior Disaster Analyst, Pacific Disaster Center



BIOGRAPHY

Robert Kalei Miller specializes in the application of geospatial information, geography, science, and emerging technologies to disaster risk reduction activities. As a Senior Disaster Services Analyst and Liaison to the United States Indo-Pacific Command (USINDOPACOM), Mr. Miller utilizes the capabilities and technology of the Pacific Disaster Center (PDC) to make advancements and address critical areas including humanitarian assistance and disaster response (HADR), climate change impacts, women, peace, and security (WPS), and fragility. Miller holds an Executive Masters degree in

Emergency and Disaster Management from Georgetown University and a Bachelor of Science in Geography with an emphasis in geographic information systems and geology from Portland State University."

1B. Mobilizing Finance for Climate Action

Valerie Hickey, Global Director for Environment, Natural Resources and Blue Economy, World Bank

Mrs. Valerie Hickey's biography is provided above.



Day Two

Maritime, Ocean, and Water Security



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Agenda – Day 2, 15 August 2023 (Tuesday) *THEME: Maritime, Ocean, and Water Security*

Moderator for the Session: Admiral Piyal De Silva (Retd), Sri Lanka Navy

0830-0835	Administrative Remarks
0835-0845	Introduction to the Session Admiral Piyal De Silva (Retd), Sri Lanka Navy
0845-0905	Regional Cooperation to Combat Illegal, Unreported, Unregulated Fishing Captain Anurag Bisen, Indian Navy
0905-0925	Mangroves, Seagrass Beds, and Blue Carbon: Resilient Coastal Ecosystems for Resilient Coastal Communities Dr. Rupesh Bhomia, Scientist, CIFOR-ICRAF
0925-0945	The Role of Water Storage in Enhancing Water Security Dr. Mohsin Hafeez, International Water Management Institute
0945-1015	BREAK
1015-1035	Policy Framework for Preventing Plastic Pollution in the Indian Ocean Region Commander Prashan Perera, Sri Lanka Coast Guard
1035-1125	Maritime and Water Security Panel Session Moderated by Admiral Piyal DeSilva
1125-1130	<i>Admin Brief – Workshops Overview for Day 2</i> LCDR Stephen Woodham
1130-1230	LUNCH BREAK
1230-1400	Day Two Workshops (Concurrent): 2A. Introduction to Coral Reef Science and Restoration – Admiral Piyal De Silva & Dr. Adam Smith 2B. Mangrove Resilience through Pacific Island Blue Carbon Knowledge Exchange (PI-BLUEX) - Dr. Rich MacKenzie, Dr. Rupesh Bhomia, Dr. Sahadev Sharma, and Mr. Vedagiri
1400-1430	BREAK
1430-1550	Workshops Continued
1550-1555	Participants regroup in Lotus Room
1555-1600	Administrative Notes by MC – End Day 2



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Day 2 – Maritime, Ocean, and Water Security Presentations and Panel Session

Introduction to the Session

Admiral Piyal DeSilva, Sri Lanka Navy (Retd)



BIOGRAPHY

Admiral Piyal De Silva was the 23rd Navy Commander of the Sri Lanka Navy and the former ambassador of Sri Lanka to Afghanistan. He has held many key appointments in the navy during his 37 years of Naval career. He is an experienced counter terrorism, counter narcotic, counter smuggling and disaster management practitioner. Admiral De Silva graduated with a Master of Business Administration in Human Resource Management and Master of Science in Military Science and National Security Strategic Study. Further, he has attended the National Defence Course. He has received specialized training on Deep Sea Salvage Diving and Explosive Ordnance Disposal Diving. He is a Chartered Member of the Chartered Institute for Personnel Management, Sri Lanka. Being a strategic leader, he has used his knowledge

and skills in many sectors in the navy and the country producing both tangible and intangible results.

Admiral De Silva is a PADI diving instructor and a specialty Instructor Marine Resource Management. He has introduced a number of successful projects for marine eco system conservation and protection in many parts of Sri Lanka. Admiral De Silva has taken his own initiatives to improve the Maritime Information Center at the Navy Headquarters, Colombo and Integrated Maritime Border management system in Sri Lanka to reinforce Maritime Domain Awareness. He has been instrumental in developing Vessel Board Search & Seizer training course, Ship in box simulator training and disaster response simulator in the Sri Lanka Navy. He is a marine environment conservationist as well. Currently he is serving as the consultant on marine & energy cluster for Hayleys Advantis Company and Special Advisor to Sri Lanka & IORA countries for EU- CRIMARIO II project.



Regional Cooperation to Combat Illegal, Unreported, Unregulated Fishing



Captain Anurag Bisen, Indian NavyBIOGRAPHY

Capt Anurag Bisen is a serving officer of the Indian Navy with almost 34 years of service. As a submariner he commanded a Kilo Class missile submarine. Capt Bisen joined the IDSA after a tenure in the National Security Council Secretariat where he worked on maritime issues including maritime boundary and legal issues, Indo-Pacific, Indian Ocean Region, Maritime and Coastal Security and Polar Issues. He was instrumental in drafting and approval of India's Arctic Policy, recently released in March, 2022. Capt Anurag Bisen is a graduate of Defence Services Staff College Wellington, holds a Master's degree in Telecom and a diploma in Russian Language from Arkhangelsk State University Russia.

He has also qualified for UGC-NET.

Abstract

The fisheries sector, having a decisive role in food security and the living standards of the coastal populations, is crucial for the Indian Ocean littoral countries, including the small and developing island nations.

IUU fishing affects the sustainability of fish stocks and it is an important issue of concern under the ten targets contained in SDG 14. IUU fishing and unsustainable fishing practices, including those by foreign vessels, contribute to the depletion of marine resources in the Indian Ocean, consequently raising challenges for the littoral States, especially the loss of economic opportunities and access to nutrition, further exacerbating maritime security threats; the degradation of ecosystems and the environment; and the erosion of States' jurisdiction.

India attaches great importance to a maritime order based on the rule of law and freedom of navigation. These would include the United Nations Convention on the Law of the Sea (UNCLOS) and on fisheries sector the role of the UN fish stocks agreement. There is also a significant contribution of organisations, such as the Indian Ocean Rim Association (IORA), the Indian Ocean Commission (COI), the Indian Ocean Naval Symposium, as well as regional fisheries organisations, in the maintenance of this maritime order.

India realises that IUU fishing is a real and concerning challenge in the Indian Oceans and there is a need to augment capability and capacity of littoral states towards better monitoring and prevention of IUU fishing and overfishing in areas beyond national jurisdiction of the littorals and island states. A cooperative mechanism, capacity building and strengthening coordinated legal responses to the scourge of IUU fishing, to begin with, in the IOR, and further expanding into the Indo-Pacific, to address the challenges of IUU.



Mangroves, Seagrass Beds, and Blue Carbon: Resilient Coastal Ecosystems for Resilient Coastal Communities

Dr. Rupesh Bhomia, Scientist, CIFOR-ICRAF Sri Lanka



BIOGRAPHY

Dr. Rupesh Bhomia is a wetland biogeochemist specializing in tropical freshwater swamps and coastal systems. His research focuses on carbon sequestration and climate change solutions, with emphasis on freshwater peatlands and coastal mangroves. Rupesh has been educated at University of Oxford in the UK and University of Florida in the USA. Currently, Dr. Rupesh is a scientist at CIFOR-ICRAF, Sri Lanka, and he has studied mangrove ecosystems in various countries, including India, Honduras, Liberia, Gabon, Ghana, Madagascar, Senegal, and Indonesia.

Abstract

Coastal Communities within the Indo-Pacific are ground zero for global climate change. Sea level rise (SLR) is already forcing abandonment of low-lying atolls and will continue to have disproportionately large impacts on traditional cultures reliant on oceanic and coastal resources for their health, well-being and continued existence. Mangrove forests are sensitive to impacts from even slowly rising sea level, therefore, there is a pressing need to enhance long-term resilience and adaptive capacity of mangrove resources. Healthy and intact mangroves provide important goods and services vital for human existence within the Indo-Pacific region. These include the provision of timber, nursery for fisheries and habitat for marine fauna, as well as physical protection from rising seas and intensifying storms.



The Role of Water Storage in Enhancing Water Security

Dr. Mohsin Hafeez, International Water Management Institute (IWMI)



BIOGRAPHY

Dr Mohsin is currently working as a Country Representative (Pakistan), Regional Representative (Central Asia) and Principal Researcher (Water Resources Management) at the International Water Management Institute (IWMI), based in Sri Lanka. In this capacity he is responsible for developing scientific solutions for sustainable and climate resilient water management. He is also responsible for office management, donor coordination and project management activities for IWMI in Pakistan and Central Asia. Mohsin has worked as an integrated water resources

management and modelling expert with world-class water research and academic institutes, donors, water utilities, governments, and international consulting companies. He has authored or co-authored nearly 200 scientific publications and has supervised two MSc and 13 PhD students in the field of water resources management, agricultural water management, food security, and rural development. He has worked extensively in 14 countries (Australia, Burkina Faso, Germany, Ghana, China, Netherlands, Pakistan, Philippines, Sri Lanka, Lao PDR, Uganda, UK, USA and Uzbekistan). He is an Adjunct Professor (Water Resources) with two Chinese universities.

Abstract

Water storage across the Asia Pacific region is insufficient to meet current, let alone future, demand for water, given the variability in rainfall and impacts of climate change. Further, the benefits and risks derived from its distribution and availability are deeply unequal within and between countries: large segments of both urban and rural populations, especially women, the poor, and people from disadvantaged communities, suffer from serious water deprivation. The capacity to store water is also decreasing throughout the Asia Pacific region, even as the demand for water is rapidly increasing. In addition to natural processes such as siltation, decades of degradation and over-exploitation has reduced storage volumes, though the precise volumes remain unknown. The scientific, engineering, and policymaking communities have, for the most part, neither effectively recognized nor understood the implications of this slow onset crisis. However, improved water storage also provides a mechanism for dealing with climate shocks (floods and droughts), thereby enhancing opportunities for improved water security. This presentation will explore the role of improved water storage options (built and natural storage) in reducing flooding events which in turn provides an entry point for strengthening cooperation. The presentation will also explore the role of inter-governmental coordination and early Warning Systems to reduce the impact of flood events (and drivers for conflict) based on the unprecedented Sept 2022 floods in Pakistan.



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Policy Framework for Preventing Plastic Pollution in the Indian Ocean Region

Commander Prashan Perera, Sri Lanka Coast Guard



BIOGRAPHY

Commander Prashan Perera currently holds the esteemed position of Officer in Command at the Advance Training Centre, Kirinda. His journey in the Sri Lanka Navy began as an officer cadet for the 21st intake on 5 October 2003. He distinguished himself by graduating from Sir John Kotelawala Defence University in 2006, earning a Bachelor of Science degree in Management and Technical Sciences with a second-class upper division. After completion of his basic naval training at the Naval & Maritime Academy, Trincomalee, Cdr. Perera was conferred his commission, accompanied by three notable accolades for academic excellence, including the coveted sword of honors for being the top midshipman of his intake.

Further strengthening his linguistic abilities, he secured a diploma in English for Professionals with Merit from the National Institute of Business Management in April 2011. Commander Perera has successfully pursued several naval courses both locally and internationally, exemplifying his dedication and commitment. These include the sublieutenant technical course in India in 2007 (ranking first in order of merit), the junior staff course in Bangladesh in 2011, the long navigation course in India in 2015 (once again, first in order of merit amongst 15 countries), and the Defence Service Command and Staff Course in Sri Lanka, where he was bestowed Commandant Honors for his academic brilliance in 2020.

Adding to his academic laurels, Prashan Perera holds four master's degrees across various disciplines. These include a Master's in Business Management with a merit pass from the University of Colombo (2015), a Master's in Conflicts and Peace Studies from the same institution (2020), a Master's in Defence and Strategic Studies from Kotelawala Defence University (2021), and a Master's in Maritime Safety and Security Policy from the National Graduate Institute for Policy Studies in Tokyo, Japan (2022). His professional prowess earned him membership in the esteemed Institute of Management in Sri Lanka.

Over the past decade, Commander Perera has remained deeply engaged in research, presenting numerous papers at local and international forums. His scholarly contributions include two journal articles published in the SLN annual research Journal. Furthermore, he has demonstrated thought leadership in the field of maritime law, presenting a paper on the Legal Framework Pertinent to Maritime Drug Trafficking and Smuggling of Goods at the Indian Ocean Rim Forum. His latest research submissions, awaiting selection, focus on Global Maritime Disaster Risk Governance Systems, Air Cooperation to Secure and Serene Indian Ocean and Way Forward and Indo - Pacific Strategy, how it will be Benefitted to South Asian Countries.

Abstract

Plastic waste piles up in the Indian Ocean at alarming rates, and most plastics do not disintegrate. Instead, they progressively break into smaller particles, known as microplastics. These plastic particles, whether bigger or smaller, are creating severe problems such as the risk to marine life, navigational obstruction, a negative impact on the tourism and fishing industries, and a polluted residential environment; therefore, effective, sustainable remediation solutions are urgently required. Even though



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countries in the Indian Ocean Region have not given their full attention to plastic pollution prevention at present; however, some states have initiated limited actions such as:

- Initiatives to reduce plastic pollution and improve waste management.
- Banning the production of Styrofoam and polythene goods .
- Establishing the principle of reducing waste, reusing, and recycling Program.

Stand-alone efforts for plastic waste cleanup and awareness programs by some organizations. This research discusses the gaps in above stated limited actions. Furthermore, the paper suggests success criteria for preventing plastic waste through appropriate policy framework under the following headings.

- Legal policy framework for dump plastic waste.
- Reduction of Single-use plastics and environment-friendly alternative designs.
- Plastic waste prevention by multi-model approach (Coordination and guiding different voluntary organizations, including NGOs and cooperate bodies, for a collaborative mitigatory framework.)
- Surveys, monitoring, and cleanup guidelines to avoid plastic accumulation in the marine environment.

Day Two Workshops

2A. Introduction to Coral Reef Science and Restoration

Dr. Adam Smith, Founder and CEO, Reef Ecologic



BIOGRAPHY

Dr. Adam Smith is the founder and chief executive officer of Reef Ecologic, an Australian based company and social enterprise that provides research and monitoring, strategic advice, and capacity building to facilitate sustainable outcomes. He has led the organization to become a 3-star ecoBiz company, an Ecotourism Australia climate action business and a BCorp Best for the World Environment. Reef Ecologic's tagline is "For a better planet" as everything they do is centered around making a positive environmental impact and empowering people. The organization is

involved in the science of coral reef restoration throughout multiple locations to support ecological and socio-ecological values of reefs and associated communities. Team members work with local communities to collect coral, grow it in nurseries before returning it to degraded sites to help restore the areas. Adam also initiated the "International Coral Reef Leadership and Management Course" developed the "Museum of Underwater Art" with to share knowledge about ocean conservation. Adam holds a BSc (Hons), PhD, and MBA, and has authored over 100 scientific papers, books, and reports. Between 1999 and 2014, Adam worked as director of the Great Barrier Reef Marine Park Authority, and he has held several voluntary board positions with the Australian Underwater Federation, Recfish Australia, Environment Institute of Australia and New Zealand (EIANZ), Reef Restoration Foundation, and Museum of Underwater Art. In his leisure time, Adam is a keen ocean sportsman, naturalist, freediver and kayaker.

Admiral Piyal De Silva, Sri Lanka Navy (Retd)

Admiral Piyal De Silva's biography is provided in the Moderator Section for Day 2.



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2B. Mangrove Resilience through Pacific Island Blue Carbon Knowledge Exchange (PI- BLUEX)

Dr. Rich Mackenzie, Blue Carbon Climate Change Fellow, U.S. Forest Service



BIOGRAPHY

Dr. Rich MacKenzie is a mangrove ecologist working as the State Department's Blue Carbon Climate Change Fellow in the Republic of Palau. He is responsible for providing technical assistance to Pacific Island countries on issues related to climate change and blue carbon, specifically, helping countries assess blue carbon stocks and quantify their areal extent, developing emission factors, and incorporating that data into national communications or to use in voluntary carbon markets.

Prior to moving to Palau, Dr. MacKenzie conducted research in Micronesian mangrove ecosystems for the last 20 years with the US Forest Service Pacific Southwest Research Station's Institute of Pacific Islands Forestry in Hilo, Hawaii. His research focuses on assessing mangrove vulnerability to sea level rise, identifying important drivers of carbon burial in mangroves as well as mangrove response to sea level rise, and assessing fish, plant, and carbon dynamics. He has also been the Asia Pacific lead scientist on USAID's Sustainable Wetland Adaptation and Mitigation Program (SWAMP) since 2012, a global research program that helps countries collect data to inform management strategies and for national communications.

Dr. Rich Mackenzie is supported by Dr. Rupesh Bhomia of CIFOR-ICRAF, Sri Lanka, Dr. Sahadev Sharma of USFS, and Thirumurugan Vedagiri, PhD Scholar at Madras Christian College, Chennai.



Day Three

Impacts of Urbanization and Land Security



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Agenda – Day 3, 16 August 2023 (Wednesday) *THEME: Impacts of Urbanization and Land Security*

Moderator for the Session: Professor Sevvandi Jayakody, Wayamba University of Sri Lanka

0830-0835	Administrative Remarks
0835-0845	Introduction to the Session Professor Sevvandi Jayakody, Chair Professor, Wayamba University of Sri Lanka
0845-0910	Restoration of the Land Ms. Ann Singeo, Executive Director of Ebiil Society
0910-0930	Intense Urbanization in the Maldives & the Strategic, Operational, and Tactical Threats and Risks Impacting Defence Forces Colonel Hassan Amir, Defence Advisor High Commission of Maldives in Sri Lanka
0930-0950	Food Security & Disaster Risk Reduction through Community-based Mangrove Restoration in the Central Coast of Vietnam Dr. Ho Dac Thai Hoang, Chairman, Thua Thien Hue Union of Science and Technology Associations
0950-1010	Addressing Impacts of Urbanization, Japan International Cooperation Agency's (JICA) Activities in Cities and Surrounding Environment Dr. Megumi Muto, VP of Development Finance, Partnership, and Mobilization, JICA
1010-1030	BREAK (20 mins)
1030-1115	Impacts of Urbanization and Land Security Panel Session Moderated by Professor Sevvandi Jayakody
1115-1120	<i>Admin Brief – Site Visits Overview for Day 3</i> Professor Sevvandi Jayakody
1120-1230	Mangrove Site Visit – Collect Packed Lunches + Clothes Change & Depart at 12:00 Coral Reef Restoration Site Visit – Eat Lunch + Clothes Change & Depart at 12:30
1230 -1800	Site Visit to Negombo Mangroves (Field Application of PI-BLUEX Field Methodology) + Site Visit to Port City Coral Reef



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Day 3 – Impacts of Urbanization and Land Security Presentations and Panel Session

Introduction to the Session

Professor Sevvandi Jayakody, Senior Lecturer, Wayamba University



BIOGRAPHY

Professor Sevvandi Jayakody, completed BSc (Hons.) in Zoology from University of Kelaniya, Post Graduate Diploma in Wildlife Management and Conservation from Wildlife Institute of India and a PhD in Zoology from University of Aberdeen, UK. She conducted post-doctoral research at SCIRO, Australia, James Hutton Institute, Scotland and IDRC, Canada.

Professor Jayakody joined the Department of Wildlife Conservation as an Assistant Director in 1997 and currently serves as a Senior Lecturer at the Wayamba University of Sri Lanka. She also served as the Coordinator for CITES CoP18 and currently serves as chairperson of National Mangrove Expert Committee, a member of Commonwealth Blue Carbon Initiative, a member of

National Environmental Council and a Director of Environmental Foundation Limited. Her research interests include coastal ecosystem management and policy and impacts of human disturbance on ecosystem processes and functions.



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Restoration of the Land

Ann Singeo, Executive Director of Ebiil Society



BIOGRAPHY

Ann Kloulechad-Singeo became the Executive Director of Ebiil Society Inc., in January 2011. She is a co-founder of Ebiil Society and served on the Board of Directors from 2007-2010. A graduate of University of Texas at El Paso with a master's in communications for Social Change, she works with communities to initiate innovative solutions that promote sustainable resources for livelihood support. She has acquired

diverse work experience from various management positions, such as an Executive Director for Palau Primary Health Care, Chief for Palau's Gender Division, and as a private consultant in the local and regional area of the Pacific. Her publication includes UNESCO-EIU award winning monograph for Camp Ebiil-Cultivating Indigenous Knowledge towards Environmental Conservation, Palau Cultural Mapping with the Secretariat of the Pacific Community, and with UNESCO Palau Knowledge of the Sea, Palau Mesei Epistemology, Palau Intangible Cultural Heritage, Palau Gender and Natural Resource 2020, and various environmental papers, including women fisheries.

Abstract

National resilience relies on natural resources in sustainable conditions and important food systems intact ensuring food sovereignty and security. Pacific Islanders have maintained a reciprocal relationship with nature for millennia and relied on traditional knowledge systems to utilize and safeguard their resources. More support is needed to study traditional agroecology and replicate efforts taken by local communities to restore natural ecosystems utilizing western science and traditional knowledge. Ebiil Society, a local NGO in Palau has for the last 10 years worked with traditional knowledge and science to develop a forest restoration methodology that can be sustained by small communities and adapted regionally.

Ebiil's ability to work with science and local knowledge systems, created a forest restoration methodology that's both efficient and resilient. The methodology incorporates specific tree species with properties for nitrogen fixers to improve soil conditions, resilience, bird propagation, social, and economic values. Included are traditional soil amendments of mulching and sheet covering for temperature control, soil improvement, moisture, and weed control. In the last two years Ebiil has planted over 18,000 trees to recover Ngardmau bauxite mining fields. For almost a century these areas continuously offloaded sediment into important watershed systems and reefs, compromising local community way of lives and cultures and their ability to restore such monumental land degradation.

Integration of traditional knowledge systems is a critical component to environmental restoration. It additionally empowers local community to address their own environmental issues with relatable and sustainable solutions.



Intense Urbanization in the Maldives & the Strategic, Operational, and Tactical Threats and Risks Impacting Defence Forces

Colonel Hassan Amir, Defence Advisor, High Commission of Maldives, Sri Lanka



BIOGRAPHY

Colonel Hassan Amir is the Defence Advisor of Maldives in Sri Lanka. Prior to the present appointment, Colonel Amir worked as the Principal Director for Plans, Policy and Resource Management at the Integrated Headquarters, Maldives National Defence Force. During his 23-years career at MNDF, he has been extensively involved in formulating national strategies and policies on security, defence, counter terrorism and violent extremism. Colonel Amir holds a Bachelor of Arts (Political Science - 2003), Master of Strategic & Defence Management (2008) Master of Arts in Security Studies (Counter Terrorism Strategy and Policy – 2011), and

Master of Science Defence and Strategic Studies (2018).

Abstract

Though Maldives is renowned for its unique and fragile natural environment, intense urbanization is happening across the country at a rapid pace. Male', the capital island, is arguably one of the most urbanized and densely populated islands in the world, and there are many other islands on the same trajectory of urbanization and population congestion. In a region where development is often equated with massive infrastructure projects, the demands of geography, societal expectations and political expediency have all resulted in an unprecedented proliferation of ports, airports, mixed-use residential spaces, and other associated projects.

For small developing states, urbanization is both an economic necessity and a natural evolution in their developmental trajectory. Balancing this against the plethora of military and non-military threats is a difficult endeavor. The risks associated with intense urbanization span across the military operational continuum. They also pose significant environmental, ecological, economic, and societal implications. At the strategic level, massive infrastructure development, which require foreign government investment or assistance, compel small states like Maldives to become embroiled in the dynamics of major power competition. Operationally and tactically, intense urbanization disrupts the natural environment, thereby exacerbating the impacts of climate change and other environmental risks. Urbanization and the resultant population congestion often leads to weakening of the social fabric, resulting in adverse outcomes like increasing criminality.



Food Security & Disaster Risk Reduction through Community-based Mangrove Restoration in the Central Coast of Vietnam

Dr. Ho Dac Thai Hoang, Chairman, Thua Thien Hue Union of Science and Technology Associations



BIOGRAPHY

Dr. Ho Dac Thai Hoang is a Vietnamese forest ecological scientist and environmental engineer with over 25 years of experience in community-based and natural-based forests, mangroves, and ecological restoration. He is currently the Chairman of the Thua Thien Hue Union of Science and Technology Associations, Thua Thien Hue province, Vietnam. Dr. Hoang received his Bachelor of Forestry degree from Hue University of

Agriculture and Forestry in 1993, his Master of Agriculture degree from Chiang Mai University in Thailand in 1999, and his Doctor of Forest and Environmental Science degree from Freiburg University in Germany in 2004. After completing his doctoral studies, Dr. Hoang returned to Vietnam and began working as a lecturer at the Faculty of Forestry at Hue University of Agriculture and Forestry. He also taught courses on sustainable forest resources management at the Faculty of Geoscience at the Hue University of Science. In 2015, Dr. Hoang was appointed Director of the Institute of Resources and Environment at Hue University. In this role, he led a team of scientists and researchers in conducting research on a variety of environmental issues, including climate change, deforestation, ecological restoration, and water pollution. In recent years, Dr. Hoang has applied his community-based skills and knowledge to encourage local communities along the coastal areas of Vietnam to restore the environmental condition of two lagoons, Oloan Lagoon and Tam Giang Lagoon of the Central Coast of Vietnam. He has done this by restoring the mangrove along the banks of the lagoons with mangrove tree species.

Abstract

Vietnam's coastline spans approximately 3,260 kilometers and is home to over 45% of the country's population. This extensive coastal stretch exposes Vietnam to significant vulnerability from the adverse effects of climate change, such as tropical storms, seasonal floods, extreme heat waves, and prolonged droughts. The natural mangrove ecosystems along the river banks, estuaries, and lagoons that were identified as the solution to the climate crisis have suffered from long-standing interference by local communities due to various reasons. This interference has resulted in a significant loss of biodiversity, daily food sources, and economic stability, thereby directly impacting climate security and coastal resilience. To address these challenges, an approach centered on natural and ecosystem-based adaptation, involving local communities and indigenous knowledge, has been implemented to restore the mangroves and enhance biodiversity conservation, as well as disaster risk reduction in coastal areas. The restoration of mangroves in the North Central Coast of Vietnam carries substantial potential benefits, including biodiversity conservation, carbon sequestration, and strengthening the capacity and well-being of local coastal communities. The success of the mangrove restoration activities hinges upon several factors, such as knowledge sharing, stakeholder engagement, and institutional support. Furthermore, the long-term effects of the restoration efforts will be determined by the ability to monitor, measure, and evaluate the ecological and socio-economic outcomes over the course of several decades, as it takes time for the trees to reach maturity and restore the micro-ecologies.



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Addressing Impacts of Urbanization, JICA's Activities in Cities and Surrounding Environment

Dr. Megumi Muto, VP of Development Finance, Partnership, and Mobilization, Japan International Cooperation Agency



BIOGRAPHY

Prior to her appointment as Vice President (development finance, mobilization, partnership) in February 2021, Dr. Muto has held leadership roles at Ogata Sadako Research Institute for Peace and Development, Global Environment Department, and France office. During 2010-2015, she was responsible for the Philippines and the Pacific. Dr. Muto has written extensively in the area of impact evaluation. She has also co-led a WB-ADB-JICA book on the impact of climate change on Asian coastal mega cities. She holds PhD in development economics, MPA and EMBA.

Abstract

JICA's activities in environment cover biodiversity, water and sanitation, environmental management (such as waste and circular economy) and disaster risk reduction. The main modalities are technical assistance, grant projects, as well as finance to both sovereign and private sector. Efforts are made to mainstream climate mitigation and adaptation in all activities to align with the Paris Agreement. As further value added JICA embraces the principles of Sendai Framework for Disaster Risk Reduction aiming at resilient and inclusive growth. Cases from major cities in Asia will be discussed



Day Four

Building National and Regional Resilience



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Agenda – Day 4, 17 August 2023 (Thursday)

THEME: Building National and Regional Resilience

Moderator for the Session: Dr. Steve Dornbos, Acting Director, Global Resilience Policy,
Office of the Secretary of Defense

0800-0805	Administrative Remarks
0805-0815	Introduction to the Day 4 Session Mr. Steven Dornbos, Director, Global Resilience Policy, Office of the Secretary of Defense
0815-0855	Partnership Working Group (WG) Three-Year Plan Updates 1. Networking WG, LTC Travis Collins, Australian Defence Force 2. Policy WG, Tahlia Vogel, New Zealand Ministry of Defence 3. Mitigation WG, Mr. Chris Sholes, USINDOPACOM 4. Education WG, Amanda Ellis, Arizona State University (video)
0855-0940	Addressing Material Risks & Opportunities through Organizational Sustainability & Implementing National Plans Presentations 1. New Zealand Defence Force, WGCdr Trev Hammond – Sustainability and Resilience in the New Zealand Defence Force 2. Singapore Armed Forces Sustainability Office, LTC Timothy Koh – The Singapore Armed Forces Contributions to the National Sustainability Efforts and Climate Adaptation
0940-1010	BREAK
1010 -1030	3. Fiji Climate Change and Disaster Management Office, Alipate Nauvilou – Youth Voices and Military-Civilian Dependencies in the Context of Climate Security
1030 - 1130	Addressing Material Risks & Opportunities through Organizational Sustainability & Implementing National Plans Panel Session Moderated by Dr. Steve Dornbos
1130-1230	LUNCH BREAK
1230-1235	Admin Brief – Workshops Overview for Day 4 LCDR Stephen Woodham
1235-1440	Day 4 Workshops 4A. Organizational Sustainability – Lead Facilitator, Flight Sergeant Donna Walker, NZDF 4B. Implementing National Plans – Lead Facilitator WGCdr Trevor Hammond, NZDF Both sessions are 60 minutes, with 5 minutes to move in between workshops
1440-1510	BREAK
1510 – 1525	Participant Survey and 2023 IPESF Summary (Photos and Videos) LCDR Stephen Woodham
1525-1535	Closing Remarks by Brigadier General Gavin Gardner, J4, USINDOPACOM
1535-1545	Closing Remarks by Dr. Sunimal Jayathunga, Additional Secretary, Ministry of Environment Sri Lanka



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Day 4 – Building National and Regional Resilience Presentations and Panel Session

Introduction to Session

Mr. Steven Dornbos, Director of Global Resilience Policy, Office of the Secretary of Defense



BIOGRAPHY

Dr. Steve Dornbos is a climate scientist currently serving as Acting Director of Global Resilience Policy in the Office of the Secretary of Defense (OSD). At OSD, he works on climate security in the Office of Under Secretary of Defense for Policy, focusing on integrating climate considerations into high-level DoD strategies and policy guidance. He is also the INDOPACOM lead in his office, working closely with the Combatant Command and allies and partners on enhancing regional climate resilience. Steve earned his Ph.D. in Geological Sciences from the University of Southern California and was a tenure-track/tenured Professor of Geosciences at the University of Wisconsin-Milwaukee for 16 years. He was elected a Fellow of the Geological Society of America for his sustained distinguished career contributions to the geosciences. Steve started working at DoD in 2019 as a AAAS Science & Technology Policy Fellow in the Office of the Assistant Secretary of the Army for Installations, Energy and Environment, where he was lead for U.S. Army installation climate and water resilience policies. Steve's previous position was as Chief of Climate and Hydrology Plans at Headquarters U.S. Air Force, Directorate of Weather. In this role, he was part of the teams that drafted the DoD Climate Risk Analysis and the Department of the Air Force Climate Action Plan.

Partnership Working Group Three-Year Plan Updates

LTC Travis Collins, Networking Working Group, Australian Defence Force



BIOGRAPHY

Lieutenant Colonel Travis Collins is the Headquarters Joint Operations Command Senior Environmental Advisor and the Army Headquarters Environmental Security Advisor. He is responsible for developing policy and as well as coordination and management of environment and climate change issues for both Joint Operations Command and Army. As an Environmental Scientist with the Australian Defence Force, he leverages his military and civilian experience to balance the dual obligations of capability development and environmental sustainability. He has led environmental management for a number of combined exercises and deployed to Afghanistan as an environmental officer in 2013. Travis was awarded an Australia Day Medallion for his leadership to transition Defence Airfield Rescue and Fire Fighting vehicles to a fluorine-free foam.



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Tahlia Vogel, Policy Working Group, New Zealand Ministry of Defence



BIOGRAPHY

Tahlia Vogel is a Policy Analyst in the International Branch of the New Zealand Ministry of Defence. The International Branch leads policy advice and analysis on New Zealand's deployments, Defence relations, and offshore security issues to Ministers, Defence principals and partner agencies. Her areas of responsibility include defence engagement within the Pacific region, and climate change. Tahlia joined the Ministry of Defence in 2020. She has previously worked in the Capability Development branch, working on large scale Army and Navy capability projects, and in Policy branch covering maritime security, cyber, Antarctica, and gender and security as portfolios. Tahlia holds a Master of International Relations and Diplomacy, and a Bachelor of Arts (Media and Communication, and English) from the University of Canterbury.

Chris Sholes, Mitigation Working Group, U.S. Indo-Pacific Command

Please find Chris Sholes' Biography in the Day 1 Session.



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Amanda Ellis, Education Working Group, University of Arizona (video presentation)



BIOGRAPHY

Former UN Ambassador Amanda Ellis currently serves as Executive Director, Asia-Pacific for the Global Institute of Sustainability and Innovation and Senior Director, Global Partnerships and Networks for the Julie Ann Wrigley Global Futures Laboratory at Arizona State University. She is co-chair of the WE Empower UN SDG Challenge, launched by the UN Secretary General, the President of the World Bank and the Council of Women World Leaders in 2018 to promote inclusive entrepreneurship.

Previous roles include New Zealand's Head of Mission and Ambassador to the United Nations in Geneva, inaugural Ambassador for Women and Girls and Prime Minister's Special Envoy to Francophone Africa. Ms. Ellis played a key role in New Zealand's successful UN Security Council bid, subsequently serving as co-chair of the UNSC High Level Working Group on Humanitarian Access into Syria. From 2010-13 as Deputy Secretary International Development and the first woman to head the New Zealand Aid Programme, Ms. Ellis was responsible for an annual budget of over \$0.6 billion. Prior to this, Ms. Ellis was Lead Specialist in the Poverty Reduction and Economic Management Group at the World Bank Group in Washington D.C., where she managed the World Bank President's Global Private Sector CEO Leaders Forum and led the Doing Business gender research project which created "Women, Business and the Law." While at the World Bank, she worked with the Economist Intelligence Unit to create the Women's Economic Opportunity Index. Ms. Ellis also founded the International Finance Corporation's gender program, where she developed the first lines of credit for women entrepreneurs in Africa delivered through local banks. In the late 1990s she served in senior executive roles at Westpac Banking Corporation in Australia, including as Head of Women's Markets and National Manager Women in Business, growing a new business rapidly to over half a billion dollars in annual revenues within just three years.

Ms. Ellis is the author of two best-selling Random House books, *Women's Business*, *Women's Wealth* and *Woman 2 Woman*, lead author of five research titles in the World Bank *Directions in Development* series on gender and growth in Africa, the Middle East, East Asia and the Pacific and co-author of the 2020 Gender Equality and Governance Index. A founding member of the Global Banking Alliance for Women, Ms. Ellis is the recipient of the TIAW Lifetime Achievement Award for services to women's economic empowerment, the East-West Center Distinguished Alumni Award, the Columba College Distinguished Alumna Award and NZ Business Hall of Fame.

Ms. Ellis serves on the advisory boards of the Global Governance Forum, UN Target Gender Equality, Blue Planet Alliance, Hawaii Green Growth, Bishop Museum, Institute for Climate and Peace, the East-West Center Board Of Governors and the Council on Foreign Relations Advisory Committee on economic inclusion. She is an adjunct Senior Fellow at the East-West Center in Hawaii and a Fellow of the World Academy of Art and Science, a member of NZ Global Women and an honorary member of BPW International and Rotary International.

Ms. Ellis holds a BA First Class Honors degree in French and Economics from the University of Otago, New Zealand, an MA degree from the University of Hawaii at Manoa which she earned on an East-West Center scholarship, an LTCL from Trinity College of London. She has completed executive education programs at Harvard Business School and the Kennedy School of Government, the Stanford Graduate School of Business and INSEAD, and the Asia Pacific Center for Security Studies Transnational Security Course for two-star generals and civilian equivalent.



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Addressing Material Risks & Opportunities through Organizational Sustainability and Implementing National Plans Presentations and Panel Session

Sustainability and Resilience in the New Zealand Defence Force

Wing Commander (WGCR) Trevor Hammond, New Zealand Defence Force (NZDF)



BIOGRAPHY

Trev joined the United Kingdom's Royal Air Force (RAF) in 1983 as an aircraft technician. He served with the RAF for 14 years and in that time worked on large aircraft and fighters in both the UK and Germany. He toured many parts of the world over that time, including a visit to Sri Lanka in 1997. In 1997 Trev was offered employment in the Royal New Zealand Airforce (RNZAF) and in 1998 Trev and his wife emigrated to New Zealand. He was again initially employed as an aircraft technician, but made it clear he wanted to pursue a career as an Engineering Officer. In December 2000 he graduated from Officer training as an Engineer. Since that

time he has performed varying roles across disciplines of, engineering, training, capability replacement, he has been an instructor, project manager, programme manager and is currently the Director of NZDF Future Force Development. It is his current role in which he is most passionate, and as such has aspires to maintain this focus over the coming years. Trev has also been fortunate to undertake a year-long course of academic study in Brunei in 2017.

Trev and his wife Jo have two adult children, Matthew and Charlotte. Matthew now lives in the UK and is looking forward to joining the RAF. Charlotte lives at home in NZ and works in a bookshop.

Abstract

The New Zealand Defence Force's sustainability journey began in 2018, and by 2019 its Sustainability Framework was in play with the vision of 'Tuku Iho' (our living legacy). This reflects an ambition to leave the estate and the wider Defence environment in a better condition for future generations.

The concept of sustainability brings together complex challenges and opportunities with interrelationships identified at almost every turn, including human, social, intellectual, natural, financial and manufactured capitals – for the NZDF, its partners and its supply chains.

Resilience focuses on the ability to absorb, adapt and/or transform after a shock and is often considered in siloes. Sustainable resilience requires the application of systems thinking which supports a comprehensive approach to stress testing in an integrated manner. Outcomes from this approach must take into account changing environments and requires continuous review and reassessment.



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The Singapore Armed Forces Contributions to National Sustainability Efforts and Climate Adaptation

LTC Koh Tong Choon Timothy, Deputy Director, Singapore Armed Forces Sustainability Office



BIOGRAPHY

LTC Timothy Koh is currently the Deputy Director for Plans and Strategy in the Singapore Armed Forces Sustainability Office (SAFSO) and played a key role in the initial setting up of the SAFSO in early 2022. He leads a team which works closely with the respective Services (Army, Air Force, Navy and Digital and Intelligence Service) in the development of MINDEF/SAF sustainability strategy and plans. His team also interface closely with other national agencies to ensure alignment to the Whole of Government efforts under the Singapore Green Plan 2030. LTC Timothy and his team develop plans and manage projects in various sustainability domains such as renewable energy, water and waste management, flood risks management and heat resilience. LTC Timothy graduated with an Honors Degree in Computer Science from the National University of Singapore and a Master Degree of Science in Management (Manpower Systems Analysis) from the Naval Postgraduate School. He also attended the Australia Command and Staff College where he graduated with a Master Degree of Defence and Military Studies from the Australia National University. Prior to his current role, LTC Timothy held various Command and Staff Appointments in the Republic of Singapore Air Force (RSAF) including Commanding Officer of a Ground Based Air Defence Squadron (165 SQN), Deputy Director (Budget and Resource Accounting) and Deputy Head (Infrastructure Development Plans) in the Air Plans Department.

Abstract

Sustainability efforts span across various domains and involve multiple stakeholders from both the private and public sectors. The Singapore Green Plan 2030 is a whole-of-nation movement to advance Singapore's national agenda on sustainable development. It charts concrete targets over the next 10 years, strengthening Singapore's commitments under the UN's 2030 Sustainable Development Agenda and Paris Agreement. In alignment to the Singapore Green Plan 2030, the Singapore's Ministry of Defence has set corresponding targets to drive her sustainability efforts. This presentation aims to share some of the Singapore Armed Forces initiatives towards reduction in carbon emission, water conservation and waste management. It will also cover some preliminary climate adaptation considerations in view of some of the risks associated with climate change.



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Youth Voices and Civil Military Dependencies in the Context of Climate Security

Alipate Nauvilou, Fiji Climate Change and Disaster Management Office Public Servant



BIOGRAPHY

Mr. Alipate-Naulivou works with Fiji's Ministry of Home Affairs and Immigration (MoHA&I). He has worked with the Fiji Public Service since 1992 and joined the Ministry of Home Affairs and Immigration in 2018 as part of the project team that assisted with the review of Fiji's National Security and Defence Sector. He is currently the Climate Change and Disaster Management Office focal point at the Ministry of Home Affairs and Immigration and also the focal point for a pilot

project that the Govt of Fiji is working on with the Australia Pacific Security College on Health and Security.

Abstract

Pacific Island leaders recognise climate change as the single greatest threat to Pacific people's livelihoods, security, and wellbeing. Fiji is aware that climate change is a national security issue as well as an environmental issue. The Republic of Fiji Military Forces (RFMF) has a constitutional mandate to 'ensure at all times the security, defence and well-being of Fiji and all Fijians.' Yet recognising climate change as a security threat doesn't mean that Fiji's traditional security architecture, including the military, should lead on or solve the climate crisis alone.

This presentation will attempt to share some of Fiji's work, in the area of climate change, in alignment with Sustainable Development Goal 13.b. It will place a particular focus on the role played by young people, with roughly half of Fiji's population being comprised of people under 30, and the RFMF, which brings people power, assets, and specialist expertise to climate change preparedness and response efforts but ultimately acts in support of humanitarian and other civilian actors.



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Day 4 Workshops

4A. Organizational Sustainability

Flight Sergeant Donna Walker, Staff Officer Climate Change Response Programme, NZDF



BIOGRAPHY

Donna enlisted in the Royal New Zealand Air Force (RNZAF) in 2001 as an Administrative Clerk, remustering to Boeing 757 Flight Steward soon after. Throughout her time at No. 40 Squadron Donna travelled around the world on the B757 and C-130 and took part in Air Force exchange programmes to Australia and the United Kingdom.

During her time in the RNZAF Donna has worked in a range of roles and units: training and development, aircraft facilitation and loading, instructing, and NZDF Space Programme. Donna's current role is a member of the NZDF Climate Change Response Programme, developing the NZDF Emission Reduction Plan. Donna has a Bachelor of Business Studies with a major in Human Resource Management and is currently completing a

Master in Sustainable Development Goals. Donna lives in Auckland, NZ with her partner, Kane, and their three young children.

4B. Implementing National Plans

WGCDR Trevor Hammond, New Zealand Defence Force

WGCDR Trevor's biography is on page 36.



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Closing Remarks

Brigadier General Gavin Gardner, J4, U.S. Indo-Pacific Command



BIOGRAPHY

Brig. Gen. Gavin J. Gardner assumed the duties of Director for Logistics & Engineering (J4), U.S. Indo-Pacific Command in June 14, 2022. The J4 is responsible for the planning, coordination, and integration of strategic Logistics and Engineering in support of operations across the Indo-Pacific region.

Brig. Gen. Gardner is a third generation Army brat and an Army Logistician. He was commissioned as a Second Lieutenant in the Ordnance Corps branch, detailed to the Armor Corps in 1992.

He earned a three-year Army ROTC Scholarship and is a Distinguished Military Graduate from the University of Georgia with a Bachelor's of Business Administration Degree in Production and Operations

Management in 1992. He earned a Master's of Science in Logistics Management from the Florida Institute of Technology in 2002, and a Master's of Arts in National Security and Strategic Studies from the U.S. Naval War College in 2014.

Brig. Gen. Gardner's assignments include: Tank Platoon Leader, D Company, 2d Battalion, 37th Armor Regiment, 3d Brigade, 3ID, Vilseck, Germany, 1993-1994, deploying for Operation Intrinsic Action, 1993. Executive Officer and Tech Supply Officer, B Company, 26th Forward Support Battalion, 3d Brigade 3ID, Vilseck, Germany, 1994-1995. Logistics Planner, 13th Corps Support Command, Fort Hood, 1996-1997. Commander, B Company, 215th Forward Support Battalion, 1CD, Fort Hood, 1997-1998. Observer Controller, "Timberwolves" Maneuver Task Force Training Team & "Adlers" Logistics Training Team, Combat Maneuver Training Center (CMTTC), Germany, 1998-2001. Training Developer and Writer, Ordnance Center and School, Fort Lee, 2003. BDE S4, 3d Heavy Brigade Combat Team, 4ID, Fort Carson, 2004-2005, deploying for OIF, 2005-2007. Support Operations Officer and Executive Officer, 64th Brigade Support Battalion, 3d Heavy Brigade Combat Team, 4ID, Fort Carson, 2005-2008, deploying for OIF 2007 and OIF 2009. G5 Logistics Planner, Deputy G4, Deputy Chief of Staff, 4ID, Fort Carson, 2008- 2010, deploying for OIF 2009. Commander, 100th Brigade Support Battalion, 75th Fires Brigade, 1ID, Fort Sill, 2010-2012. Chief of Sustainment/G4, 4ID, Fort Carson, 2012-2013. Support Operations Officer, 1st Sustainment Command (Theater), Fort Bragg, 2014-2015, deploying to OEF/OIR. Commander, 82d Airborne Division Sustainment Brigade, 82d ABN, Fort Bragg, 2015- 2017. J4 - Director of Logistics for U.S. Forces-Afghanistan (USFOR-A), Bagram Airfield, Afghanistan, 2017-2018 for OFS. Director, Commanding General's Initiatives Group and Commanding General's Executive Officer, Army Materiel Command, Redstone Arsenal, 2018- 2020. Commanding General of the Joint Munitions Command, Rock Island Arsenal, 2020-2022.

Brig. Gen. Gardner's awards and achievements include: one Joint Meritorious Unit Award, one Valorous Unit Award, and two Meritorious Unit Commendations, the Legion of Merit (2 Oak Leaf Cluster), the Bronze Star Medal (1 Oak Leaf Cluster), the Meritorious Service Medal (6 Oak Leaf Clusters), the Combat Action Badge, and Parachutist Wings.



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Dr. Sunimal Jayathunga, Additional Secretary, Ministry of Environment Sri Lanka



BIOGRAPHY

Dr. Sunimal Jayathunga has joined the government in 1995 as an Assistant Director and has outstanding working experience in fields of Environment for 28 years. He has worked in multi-disciplinaries in the Ministry of Environment such as forestry development, natural resources management, sustainable development and climate change. He is the former Director of Climate Change for a period of 10 years. At present, he is the Additional Secretary for environment development in the Ministry of Environment. Dr. Sunimal Jayathunga has graduated from the University of Peradeniya in Economics with second class upper division. He has obtained his Master of Science degree on Tropical Forestry and Management from the Technical University of Dresden in Germany and a post graduate

Diploma on Environment Management from the Maastricht School of Management, Netherlands. Further, he continued his education in University of Salzburg in Austria graduating a Doctorate (PhD) on Ecotourism and Nature Conservation. Over the last 28 years, he has engaged in formulating several environment related policies, strategies, programmes, projects and plans while participating in many national and international conferences, workshops, seminars and forums in different environment related disciplines. He has several research publications and conference materials produced.