



PACIFIC
ENVIRONMENTAL
SECURITY FORUM

PRESENTATION SUMMARY

Co-Sponsored by: | Australian Department of Defence and
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TABLE OF CONTENTS

DAY 1 – ENVIRONMENTAL SUSTAINABILITY

COL Ibnu Fatah (Indonesia)	3
MG (ret) Muniruzzaman (Bangladesh)	3
LTC (ret) Daniel Brewer (USA)	4
Dr. James Zeidler (USA)	4

DAY 2 – BIOSECURITY

Dr. Adam Sparks (IRRI)	5
Ms. Joanne Wienert (Australia)	5
Mr. Nguyen Van Duyen (MRC)	6

DAY 3 – DISASTER MANAGEMENT

Mr. Tetsuya Ito (Japan)	7
MAJ Mark Walters (New Zealand)	7
COL Jonas Suizo (Philippines)	8

DAY 4 – CLIMATE CHANGE ADAPTATION

Ms. Jane Holloway and Ms. Cheryl Durrant (Australia)	9
Dr. Purevjav Gomboluudev (Mongolia)	9
BG Zakariyya Mansoor (Maldives)	10

Pacific Environmental Security Forum Presentation Summaries



- Day 1 -

0915 - 0945 Environmental Sustainability: Civil-Military Integration

COL Ibnu Fatah, Indonesian Army Topography Directorate

The important connection between national security and environmental issues is critical for sustainable environmental management. As the previous host of such a topic, the Ministry of Environment in Indonesia and TNI (Tentara Nasional Indonesia) has made cooperation on civil-military environmental management. Indonesia has also played an important role in managing local, regional, and global environmental issues. Under leadership of the Indonesian President, Susilo Bambang Yudhoyono, Indonesia has put a voluntary commitment forward to reduce emission of Green House Gases by 26% and 41% with international support by 2020. In order to fulfill this commitment, Indonesia has launched four Development Strategic Directives: Pro Growth, Pro Job, Pro Poor, and Pro Environment. However, those four important pillars of development have not been fully implemented, especially towards environmental management on military procedures. Therefore, the Indonesian government should strengthen the comprehensive partnership with other governments through a multi-stakeholder approach (military and non-military partnerships) towards urgent environmental matters that have to be solved in reality.

0945 - 1015 Climate Change: Security Implications of Climate Change

Major General Muniruzzaman, ndc, psc (Retd), President, Bangladesh Institute of Peace and Security Studies

The security implications of climate change cover a wide spectrum. Nothing can be more severe as a looming threat to humanity than the rapid climate change witnessed by the world today. Putting an end to the debate on climate change, the United Nations' Security Council (UNSC) presidential statement declared at its meeting on climate change in July 2011 that possible adverse effects of climate change may in the long run aggravate certain existing threats to international peace and security. In fact, it will also create new centers of instability and insecurity. Climate change therefore is not only a threat multiplier but will also generate new threats that the world had not seen before.

The major vulnerabilities and threats from climate induced conditions include human displacements and migration, water security, reduced agricultural productivity and food insecurity, loss of livelihood, health hazards, energy crisis and disaster security etc. Specially, the nexus between water, food and energy security will challenge not only the ability of the state on its development path but will threaten the very stability of the state. For example, climate change could potentially trigger large scale human migration on transnational and trans-regional basis. It is estimated by Intergovernmental Panel on Climate Change (IPCC) that by 2050, 150 million people could become climate refugees being displaced by Sea Level Rise (SLR), desertification, increasing water security, flood and storm etc. In an interconnected and interdependent world, climate change impacts on any country will also have regional consequences. Countries in the frontline of climate change threats also could be categorized as fragile countries with limited capacities to cope with the challenges. It, therefore, has potential for putting stress on the states to the point of collapse or state failure. Trans-boundary tensions can rise due to these conditions that may bring the possibility of interstate conflicts. Climate change has an all pervasive impact on national and regional security.

1115 - 1130 Environmental Sustainability: Contingency Operations

LTC Daniel R. Brewer (R), Past Environmental Engineer, US Central Command (2008-2012)

U.S. military presence in contingency operations can have a tremendous impact on a host nation, its resources, and infrastructure. Over the last 11 years, the U.S. has established hundreds of contingency bases in the USCENTCOM area of responsibility (AOR). These bases have ranged in size from small combat outposts of 20-30 soldiers to large bases of 30,000+ soldiers. The manner in which contingency bases are operated can impact the life, health, and safety of U.S. service members, DoD employees and contractors, as well as host nation personnel. The process of building, operating, and closing these bases can affect the environment and the local community. There are several regulations in the United States for the protection of environmental resources, but very few that apply outside the United States. The absence of overarching regulatory guidance for contingency operations prompted USCENTCOM to develop CENTCOM Regulation 200-2, CENTCOM Contingency Environmental Standards, which provides deploying forces minimal standards necessary to protect human health. Experience and post conflict research have revealed that environmental issues can affect military operations on many levels, from tactical considerations to the ability to achieve strategic national objectives. Environmental issues can be particularly important for success during stability operations in developing countries, where the local populace often have critical needs for basic environmental resources such as clean water and sanitation.

1115 - 1130 Environmental Sustainability: Cultural Property Protection, Sustainable Basing, and Mission Success

Dr. James A. Zeidler, Senior Research Scientist, Associate Director for Cultural Resources, Center for Environmental Management of Military Lands, Colorado State University

Experienced military leaders recognize that the ability to identify and respect cultural features in the landscape can be a critical asset for successfully working with members of host nation populations. The greatest success occurs when military personnel have access to cultural resource expertise for imagery analysis; geo-rectified and detailed cultural property maps for operations planning; education and awareness opportunities; and development of behavioral and engineering solutions for effective cultural property protection. These solutions enable military personnel to avoid damage to and perhaps even preserve cultural features placed at risk during the course of complex and prolonged conflicts. Understanding cultural features in the landscape is also a critical intelligence component in ethnic conflict, offering predictive capability for potential flashpoints and terrorist actions. Even in the absence of conflict, coalition exercises can benefit from a more sophisticated appreciation for the host nation landscape on the part of the visiting personnel. For longer term operations, it is important to understand that a forward military installation is less sustainable if it is built upon indigenous infrastructure like an ancient and functioning water system; if it is inadvertently placed in a sacred location; if it is on top of an archaeological site; or if it destroys or limits access to human burials. One component of sustainable basing is careful analysis of a proposed installation location and this analysis optimally will include differential examination for the presence or absence of significant cultural features on or in the immediate vicinity. Current conflicts around the world have strong cultural components, and as multi-national forces become involved, it will be wise to recognize the value of partnering with subject matter experts to deploy with the most informed forces possible. The Combatant Command Cultural Heritage Action Group (CCHAG) was created to assist the DoD with these issues.

Pacific Environmental Security Forum

Presentation Summaries



-Day 2-

0900 – 0930 Biosecurity: Human Food Supplies

Dr. Adam Sparks, Scientist, Plant Disease Management Specialist, International Rice Research Institute

Rice is a staple food crop for almost one-half of earth's population and over 90% of all rice is produced and consumed in the Asia-Pacific region. Because of this, biosecurity threats to this important staple food crop are extremely important. There are several considerations related to rice biosecurity. First, price volatility makes small-shareholder farmers and poor consumers more vulnerable to poverty. Recent trends have shown an increase in price volatility and many rice farmers and consumers are likely to be impacted by this. Second, while there are endemic diseases present in many countries, they frequently may not be found in nearby countries. More to an extreme, some countries, (e.g., Australia), enjoy a relatively pest-free environment for rice growing. The movement of plant and soil materials, intentional or unintentional, can have huge impacts. Because fungal plant pathogen reproductive structures, bacteria and viruses are microscopic, and many are capable of surviving under harsh conditions, the spread of such materials is often considered with regular commercial shipments and should be considered when moving military equipment and conducting other military related activities. Third and last, climate change is beginning to affect the way rice is grown in many countries in Asia. Many of these countries are not as equipped to deal with, adapt to, or mitigate the impacts of climate change and its effects on agriculture as developed countries. Some of these impacts that most impact rice production include floods, tropical storms and prolonged periods of drought. However, climate change can also affect insects and diseases leading to increased yield losses. All of these issues combined make rice food staple crop biosecurity a timely topic for discussion.

0930 – 1000 Biosecurity: Australian Lessons Learned & Risk Pathways

Ms. Joanne Weinert, Assistant Director, Machinery and Military, Department of Agriculture, Fisheries and Forestry

Australia is free from many exotic pests and diseases and through effective biosecurity controls, has earned a reputation internationally for being 'clean and green'. It is important to Australia to maintain this status as it supports our ability to access export markets around the world and ensures the sustainability of our agriculture, forestry and fishing industries. DAFF's portfolio industries are worth \$53 billion to the Australian economy; they employ 335,000 people domestically and feed 60 million people worldwide. Australian farmers and foresters manage 63 per cent of the Australian landscape and lead the world in sustainable fisheries management.

Many countries have pests and diseases that could have disastrous effects on Australia's animals, plants and agricultural industries. Australia is a large island continent with a diverse climate and eco system which means that exotic species could rapidly establish if introduced.

Due to the nature and the environment military vehicles and equipment operate in around the world, particularly in vegetated areas, military equipment is classified as a high biosecurity risk.

DAFF has strict import requirements for all military vehicles, equipment and personnel that apply equally to foreign militaries and returning Australian military forces.

All equipment, machinery, cargo and vehicles must be free of biosecurity risk material (BRM). DAFF defines BRM as material that has the potential to introduce into Australia an exotic pest or disease. BRM includes, but is not limited to animal and plant material, soil which is a particularly high weed and pathogen risk and 'hitch-hiker' pests such as insects, birds and snails such as the Giant African Snail that could dramatically damage Australia's agricultural industries.

It is important that all military forces coming into Australia are aware of and comply with Australia's import requirements, which are sometimes quite complex. To assist, DAFF provides import conditions on its website at <http://www.daff.gov.au/aqis/avm/military/visiting-military>. Visiting military forces are encouraged to engage with DAFF early in their planning so DAFF can provide advice and assistance in ensuring that our strict import requirements are met in the most efficient and effective way. DAFF is able to undertake offshore pre-shipment inspections and provide advice prior to military equipment being imported to Australia. This provides the ability to manage any identified biosecurity risks offshore rather than on arrival into Australia and also facilitates a quicker clearance of the equipment once it arrives in Australia.

1000 – 1030 Biosecurity: Assessment of Climate Change Vulnerability of Wetlands in the Mekong Basin

Mr. Nguyen Van Duyen, Environment Programme Coordinator, Mekong River Commission

This presentation focuses on a key natural asset of the Lower Mekong Basin, namely the vast wetlands that constitute approx. 40% of the total area of the basin. It describes the key role wetlands play for peoples' livelihoods, including food security, and how wetlands are under pressure from environmental changes, including climate change. It builds on a major study conducted in 2011-12 on vulnerability and adaptation of wetlands to climate change and presents an assessment of the resilience and vulnerability of important wetlands habitats and species.

Environmentally induced changes in wetlands may threaten food security by changing the extent, type and species composition of wetlands. Based on consideration of a number of factors such as climate change exposure, sensitivity and adaptive capacity of individual wetland species and habitats, the vulnerability of wetlands in the basin was estimated. The wetland types that appear to be the most vulnerable are mangroves, flooded forests, grassland and marshes. Of 97 wetlands characterized as the most important wetlands in the basin, 34 were assessed to be highly vulnerable to climate change.

The study assessed the services provided by wetlands and estimated the relative value of these services. Based on the assessment of the expected climate changes in the case study areas it is concluded that the services most vulnerable to climate change are rice production, other crop production and fisheries whereas water supply for people and livestock and forestry services are less vulnerable.

Pacific Environmental Security Forum Presentation Summaries



-Day 3-

0900 - 0930 Disaster Management: Lessons Learned from the 2011 Japan Tsunami

Mr. Tetsuya ITO, Director, Strategic Planning Office, Defense Policy Division, Defense Policy Bureau, Ministry of Defense Japan

On March 11th 2011, the Great East Japan Earthquake, which measured magnitude 9.0, making it the largest scale observed in Japanese history, inflicted catastrophic damage to the East Japan region such as the nuclear disaster at Fukushima Daiichi Nuclear Power Plant.

The activities of the Self-Defense Forces (SDF) are both large in scale and wide spanning, integrating the operations of Ground, Maritime and Air SDF as well as calling its reserve personnel directly after the Earthquake happened, with the aims of ensuring the safety of disaster victims and stability to their lives. Also the activities were carried out in cooperation with other countries including the United States and Australia. Especially The humanitarian assistance and disaster relief operations named "Operation Tomodachi (Friend)" contributed to the supports for the victims, as well as further improvement of the capabilities Japan-US joint responses.

Through the various activities in response to the Earthquake, the Ministry of Defense (MOD)/ the SDF learned six lessons: 1. Improvement of ways to surge troops and to ensure manpower in affected areas, 2. The necessity to examine roles of SDF during large-scale disaster, when local governments get malfunctioned, 3. Strengthening the capabilities to respond to nuclear disaster, 4. Strengthening the capabilities of maneuver for disaster relief, 5. Improvement of US-Japan coordination, and 6. Improvement of the posture/procedures to better accept and process aid from foreign countries.

Based on these lessons from the Earthquake, MOD/SDF will continue to enhance their capabilities to respond to massive scale earthquake and nuclear disaster, and to meet the expectations of the Japanese people.

0930 - 1000 Disaster Management: Operation Tropic Twilight

Maj Mark Walters, Foundation Warfighting Section, G7 Branch, Headquarters, Forces Command, New Zealand Defence Forces

The international response to the Samoan Tsunami is widely considered to be a success. In assisting the New Zealand All-of-Government response, the New Zealand Defence force (NZDF) quickly deployed aircraft and helicopters to deliver specialists and relief supplies and to evacuate the injured; the Royal New Zealand Navy Ship Canterbury assisted in both Samoa and the northern Tongan island of Niuaotupapu and medical and engineering specialists from all three services made valuable contributions ashore in numerous locations.

Despite the considered success, the post deployment review of the NZDF contribution to the Samoan Tsunami response determined that NZDF would conduct exercises that would better inform contingency plans and prepare our forces to react quickly and meaningfully to natural disasters in

the South West Pacific. Accordingly, it was determined that the Tropic Twilight series of exercises would be re-designated as Mission Rehearsal Exercises.

Previous iterations of Exercise Tropic Twilight had been conducted as largely independent operations to deliver medical assistance and light construction projects. While significant planning and training benefit accrued from these activities they were not scenario based nor were they set in the complex and uncertain context of response to a natural disaster in the South West Pacific.

Tropic Twilight 10 was conducted in Tuvalu in July 2010 within the context of a fictional tropical cyclone. The exercise was used as a vehicle to enhance NZDF HADR specific contingency plans and the deployment was coordinated by HQ Joint Forces New Zealand and planned and conducted to conform to an actual Disaster Response mission. High importance was placed on the inclusion of New Zealand Government Agencies and FRANZ partners. The exercise was also observed by a PACOM plans officer.

This presentation will discuss the planning and execution of Tropic Twilight 10 and the lessons learned from the deployment that has been adopted into NZDF HADR contingency plans.

1000 – 1030 Disaster Management: Philippines Armed Forces: Disaster Response in the Face of Climate Change

Colonel Jonas Tortuga Suizo, Deputy Chief of the Armed Forces of the Philippines Command Center, Philippines Armed Forces

The focus on Col Suizo's presentation will be on the Armed Forces of the Philippines (AFP) role in disaster management under Republic Act 10121, otherwise known as the National Disaster Risk Reduction Management (NDRRM) Act of 2010. Col Suizo will explain the role of AFP under this act, as well as AFP's experience so far in supporting it during emergencies. He will discuss practical applications of the law with respect to Disaster Risk Operations on the ground involving foreign military assets. Col Suizo will also describe defense planning guidance on disasters to show where the AFP is headed to this area of concern or mission. Lastly, Col Suizo will provide updates the recent dynamics between the Climate Change Act of the Philippines versus the NDRRM Act. To finish, he will run slides of various disasters that have impacted the Philippines, and how AFP responded.

Pacific Environmental Security Forum Presentation Summaries



-Day 4-

0900 - 0930 Climate Change: Impacts on Defence Preparedness

Ms. Jane Holloway and Ms. Cheryl Durrant, Australian Department of Defence

The environment which the military operates in is undergoing change which is likely to accelerate over the next three decades. This is most evident in the domains of cyber and physical geography including society, technology, climate and bio-chemical changes. In order for military forces to be prepared for these changes three questions need to be answered:

1. How are the physical and virtual worlds evolving?
2. What do the changes mean for the military preparing itself for 'typical' operations over the next 5-30 years?
3. How can we adapt and build resilience in the military system?

Having described key changes, we discuss what they mean for Defence preparedness, especially changes in potential mission profiles. We also consider how these changes can have second and third order impacts on military forces, including in increased costs, new risks and greater need for multi-party, co-operative responses.

We then present some ideas about what militaries might need to do differently. This includes taking wider perspectives that go beyond national security and focus on regional and global security responses. We argue that the impacts of global change will require militaries to engage more with non-traditional partners including people from industry, science and other institutions. The presentation concludes with some practical suggestions about ways to build resilience and adaptively in the military. These include improved forecasting, more joint, regional and whole-of-government exercises and engagement, and building adaptivity and resilience into platforms, bases and operating procedures.

0930 - 1000 Climate Change: Impacts of Climate Change in Mongolia

Dr. P.Gomboluudev, Scientific Secretary, Institute of Meteorology, Hydrology and Environment, Mongolia

Mongolia is inland country, which is situated in narrow transition zone between Siberian humid and Central Asian dry region. Therefore, there is high contrast of zonal climate and different ecosystems such as forest, steppe, and Gobi-desert.

According to historical observation, annual mean air temperature over Mongolia has increased by 2.10C ($p < 0.05$) and precipitation is decreased nearly 10% from 1940 to 2012. Thus condition is leading dryness due to increasing of evaporation and finally intensifying extreme weather/climate events comparing to recent past climate. For example during last 20 years, frequency of extreme events in last decades has been increased by 2 times compare to first decade, and their intensity and duration is changed as well.

Among these events, flash flood, strong wind, thunderstorm and freeze are most high impacted weather events in particularly livestock, arable farming and infrastructure sectors and their economic loss has reached up to 75% of the total loss of disaster in the country during last 5 years. Another prominent events are drought and zud (harsh winter) in terms of climate event.

In the future, climate of Mongolia will be getting mild and snowy in winter, drier and hotter in summer season in end of this century according to climate change projection of ensemble mean of Global Climate Models (GCMs) outputs. It means that current climate change will be continued as gradually to increase, and frequency, intensity and duration of above mentioned extreme events will be enhanced in the future. Therefore, country will be more vulnerable due to changing climate variability and extreme events.

Impact and risk of those events are needed to be managed and disaster risk management is one good climate change adaptation measure in Mongolia.

1000 - 1030 Climate Change: Climate Change Impacts to the Maldives

BG Zakariyya Mansoor, Commander of MNDR Central Area, Maldives National Defence Force

The Maldives is a small island nation comprised of over 1,190 coral islands. The country is a maritime nation, with dry land area not over 2.3%. Even though this sea area is less than 2% of the Indian Ocean, it is located in one of the most strategic areas of this ocean. The geography is shaped as a natural barrier, spanning 469 nautical miles North to South, accounting its Coast Guard to be responsible for an area of over 800,000 square nautical miles of sea.

The Maldives is a very low lying country, which is very vulnerable to the effects of climate change from global warming. Beach erosions and tidal waves have affected the country from the early eighties. The Maldives is located on the equator making it immune from disastrous storm surges such as hurricanes. It was devastated by the 2004 Boxing Day tsunami, taking down an already frail economy. Compared to other nations, the loss of life was quite less in the Maldives, but the damage to infrastructure was colossal.

Following the disaster, the relief operation identified the need for capable resources to cater for the need. MNDF acquired a 32m and a 35m Fast Attack Craft (FAC) to accommodate for such responses and to increase its reach over the vast water body. It also beefed up joint operations with friendly nations to accommodate the void of inter-operability. The MNDF Coast Guard coordinates closely with the post-tsunami established Disaster Management Center. Tsunami constructed a new era in civil-military relationships, leading to mutually beneficial trainings, exercises and legally binding inter-agency agreements