SOUTH ASIA REGIONAL ENVIRONMENTAL SECURITY FORUM

PRESENTATION SUMMARIES

Sponsors: | Maldives National Defence Force & U.S. Pacific Command

South Asia Regional Environmental Security Forum
Presentation Summaries

TABLE OF CONTENTS

South Asia Regional Environmental Security Forum
Presentation Summaries

-Day 1: Water Security -

0945 - 1015 Water: A Potential Trigger for Conflicts?

Dr. Herath Manthrithilake, Head, Sri Lanka Development Initiative, International Water Management Institute

The South Asian region currently has one of the largest population concentrations and is also one of the fastest growing regions in the world. Increasing population, urbanization, economic growth, and climate change will result in countries exhausting surface water, groundwater, and trans-boundary water resources in the near future. While the water supplies are diminishing, demand and pollution continue to increase leading to social unrest. Economic hubs like Mumbai, Dhaka, and Karachi are creating not only physical but also economic water scarcities. For many years, feeding the population was top priority for governments and this is not becoming easier. Cities are expanding rapidly. Nations, businesses and communities face substantial challenges in delivering services. This, in part due to greater climate variability and the complexities of climate change impacts in different locations. Apart from exhausting internal resources, demand for trans-boundary resources will increase. Countries like Pakistan, India, and Bangladesh will demand more when sharing water from common sources. Receding glaciers in the Himalayas will only exacerbate this crisis. Though Sri Lanka and Maldives are free from trans-boundary quantity issues; there is nothing preventing the rise of trans-boundary quality issues in the future. Therefore, South Asia must engage its citizens, sharing relevant risk information and presenting it in a way that communities can understand while promoting robust methodologies to mitigate risks to suit different needs. Unless appropriate actions are taken now, countries will face both internal civil unrests and external cross- border conflicts in the future.

1045 - 1115 Grounding the Water Security Debate: Balancing 'Eagle-Eye' and 'Toad-Eye' Sciences for Semi-Arid South Asia

Mr. Dipak Gyawali, Minister (Former), Ministry of Water Resources, Nepal

Before one can intelligibly address the question of water security, some deconstruction of the notion would be in order, starting with the questions: "Whose security?"; "At what level?"; "Who decides?"; "Who objects and why?"; and so on. One also needs to distance oneself from orthodox fads and politically correct approaches. For example, climate change (disastrously serious in the long-term though it may be with increased intensities and frequencies of floods and droughts) cannot continue to be used by development agencies as an excuse for not adequately addressing (or budgeting for) current levels of water woes. Also, trans-boundary water conflicts, important though they are, pale into insignificance in many countries when compared with internal water conflicts and management deficiencies. Moreover, the inordinate amount of attention given to 'blue' water has meant a management blind spot regarding 'green' and 'grey' waters, as well as the source of them all, the freshwater that comes down as precipitation. The concept of water security is intrinsically tied with the concept of risk, which in turn is largely socially constructed. Descriptive physical and social sciences may successfully portray the lay of the terrain on this count, but when it comes to policy responses, one has to fall back on the interpretive social sciences. This essay will use the Theory of Plural Rationalities (Cultural Theory) to explore the plural construction of risk by different social solidarities as they make their contending responses to technology and policy choices to enhance their water security as they perceive it.

1115 - 1145 Maldivian Water Security Concerns

Mr. Mohamed Rasheed, Head of Operations, Male Water & Sewerage Company, Republic of Maldives

Life has been going on business as usual in the Maldives for over 2000 years. All along issues related with water was our primary concern. When strategies to attain the objective failed, it simply erased off a chunk of the population and very often entire islands. However, Maldivians have been resilient.

The thin water lens was subjected to pollution through ignorance and poor sanitation systems, as well as through salt water intrusion. Water related disease and epidemics were highest on the Government Agenda in the 1970's through 1990's. Water was then a national concern due to the ill health it caused.

Today, in 2014, concern for water security remains topmost on the Agenda. We also realize that depending on rainfall alone is not sufficient. Everyone today realizes that 'Water is Life', and without good quality water life itself is threatened. New sources and new thinking is required. Maintaining Quality of Life is only possible only when all threats to water security are mitigated.

New strategic alignments and actions are being taken earnestly. We believe that MWSC is leading the way forward in the Maldives.

Concern	Reason
• Lack of Safe Water and Inadequate Sanitation facilities	• Death, Disease and Poor Health
• Rapid Urbanization of Male' since the 1970's	• Continuous struggle to meet the water demand
• Poorly Managed ground water	• Over exploitation
• Rapid increase in production cost and decline in revenues	• Continuous increase in fuel prices
• Global Warming and rapid changes in weather patterns	• Shift in monsoon patterns and drought • More intense and shorter duration rainfall events, causing floods/damage
• Natural Disasters	• Effects on agricultural crops and death of long standing seasonal trees
• 2004 Tsunami and more frequent droughts and flooding incidents	• Shortage of drinking water and need to transfer to affected islands
• Need to act beyond MWSC's capacity	• In supplying safe water to the affected • Own resources required for investing on outer island infrastructure • In providing training
• No Land to develop infrastructure	• Only option is to go offshore; to introduce new technologies even at prohibitive costs
• Cost may become unaffordable to customers	

-Day 2: Waste Management-

0915 – 0945 Post-Disaster Debris Clearance: Rana Plaza Building Collapse

Brig Gen Ibne Fazal Shayekhuzzaman, Director, National Telecommunication Monitoring Centre, Ministry of Home Affairs, Bangladesh

1. On 24th April 2013, Rana Plaza, a nine story building collapsed in Savar, a sub-district located 30 kilometer west of Dhaka, the capital of Bangladesh. The incident left 1132 dead and 2421 injured survivors as the immediate victims of the disaster.

2. It is considered to be the deadliest garment factory accident in history, as well as the deadliest accidental structural failure in modern human history. In the known history of the building collapse, Rana Plaza stands as second after Twin Tower in terms of human casualty.

3. Following the event, the government, military, local leadership and people from all walks of life were instantly involved to fight back the disaster. The need for layered and mutually supporting capabilities to create an effective and unified national response was felt and materialized.

4. The decision of disaster management was instantly taken where an instant agreement with other jurisdictions and agencies was done for the provision of debris management. Rana Plaza satisfied eligible debris removal criteria. The waste was mostly a combination of construction and demolition debris mixed with putrescent debris. Human remains embedded within the debris further complicated the removal. However, FEMA standard was followed for debris clearance process.

5. The government formed a coordinating body encompassing the representatives from concern agencies with the local military commander as the Chief Coordinator. The coordinating body provided the 'Debris Management Planning Concept'. Thereafter the mobilization of engineering assets and conduct of debris removal operations were done by the Engineering Task Force formed with the military engineering units.

6. Ministry of Food and Disaster Management was the core ministry and military worked as the lead agency for the disaster management and debris removal operations. Standing Order for Disaster 2010 (SOD 2010) was the core booklet followed. The operation continued for 21 days leaving behind many lessons to follow in future disasters.

0945 – 1015 Regional Approaches to Solid Waste Management in South Asia

Ms. Chamina Priyankari Alexander, Programme Officer, South Asia Co-operative Environment Programme

In Countries of South Asia, rapid population, industrialization, urbanization and growth of economy contribute to increasing solid waste generation. This has led to significant environmental and health issues such as pollution of soil, surface, groundwater and emission of Green House gasses.

The Municipal Solid Waste in South Asian nations are largely managed by their municipalities. Although considerable efforts have been made by many Governments and other entities in tackling waste-related problems, there are still major gaps to be filled in this area. In developing countries, it is common for municipalities to spend 20-50 percent of their available budget on solid waste management, even

though 30-60 percent of all the urban solid wastes remain uncollected and less than 50 percent of the population is served.

Taking effective measures in solid waste management will eliminate adverse impacts on the environment and human health and will support economic development and improve quality of life. Further it will reduce the burden that waste imposes on national budgets. Therefore understanding the importance of proper Integrated Solid waste Management is something to be considered by all the nations in minimizing further environmental contamination.

Recognizing this fast emerging issue, the Governing Council of SACEP at its 9th session mandated SACEP to focus on Waste Management as one of the priority areas in its work programme. SACEP also acts as the Sub Regional Secretariat for South Asia in the International Partnership for Expanding Waste Management Services of Local Authorities (IPLA) a programme initiated by UNCRD. The presentation will further highlight SACEP's role in Solid Waste Management in South Asia and will provide a comprehensive picture of the Prevailing scenario of waste handling practices and management within each South Asian Nation. It will also provide Valuable case studies as a means of sharing the best experiences on sustainable waste management in the region.

1015 – 1045 Desktop Demonstration of a Waste Management Unit in an Island Environment

Ms. Nicole Griffin, Environmental and Energy Manager, U.S. Marine Corps Forces, Pacific

Waste management in an island environment is difficult due to lack of available land, sensitive water resources and long transportation distances to alternate disposal sites. Developing solutions that reduce waste volume and exposure to contaminants is important. In an effort to provide more effective waste management and possibly provide energy for forces during contingency operations, U.S. Marine Forces Pacific has been evaluating waste to energy systems including portable gasifiers. Although these systems are valuable in improving waste management, care must still be taken to properly site and operate the system as well as dispose of the effluents. The desktop demonstration takes potential users through the siting, operation, waste disposal and close-out of operation of a waste management system in an island environment.

-Day 3: Resource Protection-

0915 - 0945 **Payment for Environmental Service: A Tool to Achieve Poverty Reduction & Environmental Security**

Mr. Keyvan Izadi, PES & REDD+ Advisor, SNV Netherlands Development Organisation – Bhutan

A powerful tool to address poverty reduction and environmental security, Payment for Environmental Services (PES) is a market-based "pay-for-performance" approach to financing conservation and sustainable community development whereby environmental service (ES) providers receive payments from ES users/buyers that are conditional on specific conservation performance. The payments are designed to offset the opportunity cost of conservation for the ES providers. The PES capacity building process and the agreement help develop trust, reliance and an egalitarian relationship between ES providers and buyers as equal partners to shared local/regional solutions. The revenue to the ES providers is typically directed into their representative local institution for the financing and delivery of community benefits. Current PES projects typically focus on water, carbon, biodiversity and landscape beauty.

Additionally, PES helps in generating an understanding of the relationship between ecosystem services and human well-being and engages communities in direct conservation activities that address local needs and global environmental sustainability objectives. It is a particularly effective tool in the developing world where the regulatory and enforcement environment is frequently constrained by weak institutions with poor governance and accountability. PES builds capacity in local institutions, strengthens governance and provides regional and national decision makers with replicable successes to serve as models for broad based application across multiple sectors.

0945 - 1015 **Globalization, Marine Pollution and Regional Environmental Security**

Dr. Nalin Wikramanayake, Senior Lecturer, Open University, Sri Lanka

The presentation begins with an overview of marine pollution and its occurrence at global, regional and country scales. The increase in levels of carbon dioxide and mercury in the atmosphere, pollution due to shipping, oil spills, the ship breaking industry and pollution from land-based sources are considered as examples of regional significance.

These examples are used to highlight the relationship between the increased international integration of economic activities and regional marine pollution. The impact of integration is to concentrate the sources of pollution into particular countries and regions. Understanding this linkage is needed to anticipate trends and control the problem.

Marine pollution is related to regional environmental security through the goods and services provided by the marine environment. The current and future impacts of the examples considered on livelihoods and economic activities in the region are discussed and need for increased monitoring and sharing of knowledge is highlighted.

The international, regional and country measures taken to control, reduce and monitor marine pollution are described, with particular reference to the Marpol convention and the South Asian Seas Program. Greater regional cooperation is needed to strengthen these measures. The use of public awareness to

influence the generators of pollution and improve the implementation of existing controls is proposed as another method to address the problem. These methods include the concepts of ethical consumption and life cycle analysis.

The presentation concludes with a summary and the message that all the audience have the responsibility of reducing marine pollution by reducing the generation of waste, the responsible discharge of waste, helping to monitor the marine environment, increasing regional cooperation and increasing awareness among decision makers and the public.

1015 – 1045 Coastal Zone Issues and Challenges in the Maldives

Mr. Ibrahim Naeem, Director, SAARC Coastal Zone Management Centre

The presentation consists of a short overview of basic information of the Maldives with diagrammatic representations showing the geographical location, arrangement of islands within the Atolls. The vulnerability indicators such as the low level land areas above sea level identified making the islands of Maldives vulnerable to Coastal related issues; erosion and the number of inhabited islands facing perennial beach erosion is about 64 %. Large seasonal adjustments in beach positions and the relation to shape of the islands to these adjustments had been observed by the Research done, in which eight islands were used as models over a period of eight years to study the relationship between the seasonal adjustments of the beach and the monsoons of the Maldives (The UNESCO biosphere reserve). Furthermore, a relationship between the shapes of the islands formed and their locations have been identified.

The major coastal issue of the Maldives is erosion and the causes of it both natural and man-made have been identified such as increasing wave energy at shoreline, reduction of sediment supply generated on reef, interruption or removal of sediment from the littoral transport budget and increase in sediment transport out of island sediment budget. The effects on the beach by Coastal Protection Hard engineering structures such as groin, seawall, harbor walls and breakwaters on the sea currents around the islands have been observed by a research “Coastal Monitoring Reef Island Shoreline Dynamics and Management Implications” (by Paul Kench 2010). Soft engineering such as beach nourishments, zoning and relocation of assets are some temporary measures taken. Insufficient data, resources (survey equipment) and limited technical and financial capacity to conduct regular monitoring and survey have been identified as challenges in the Coastal management Field.

-Day 4: Energy-

0915 - 0940 **Energy Implications for India's Maritime Domain**

Commander (Retired) Neil Gadihoke, Research Fellow, Society for Policy Studies

Owing to rapid economic growth, India has one of the world's fastest growing energy markets and is expected to be the second-largest contributor to the increase in global energy demand by 2035. Presently, most of India's energy requirements are being met through imported fossil fuels and indigenous coal reserves.

Nonetheless, India remains power deficit, especially the southern part of the country, which is peninsular in shape and washed by a coastline of over 7500 kilometres. Given India's limitations of conventional (non renewable) sources of energy, the Government , through the Ministry for New and Renewable energy is focused on development of offshore wind energy, especially in the coastal states of Andhra Pradesh, Gujarat, Maharashtra, Karnataka, and Tamil Nadu. Though the potential is exciting, the progress has been slow.

Further, since India is surrounded by sea on three sides, its potential to harness tidal energy is immense. The most attractive locations are the Gulf of Cambay and the Gulf of Kachchh on the west coast, and the Ganges Delta in West Bengal on the east coast.

These two domains of renewable energy, both of which are maritime based, have the potential to contribute substantially to the energy basket.

On another plane, the carbon emissions from shipping have hitherto figured low on the Environmental Security debate, which may have to do with an imbalance of public perception, which traditionally has tended to focus on land transport and aviation. The same is applicable to the Indian shipping industry as well, including lack of awareness of warship emissions. Given future emission projections, the shipping sector is likely to face increasing demands to address the issue of their green house gas (GHG) emissions.

Since India is at the energy intensive phase of its growth, all issues touched upon above have implications for the regional Environmental Security, since India is by far South Asia's largest consumer of energy, as well as its biggest polluter.

The presentation will explore Energy Implications of India's Maritime Domain, which will encompass issues, some of which have been highlighted above.

0940 - 1000 **Electricity Supply Security through Regional Cooperation in South Asia**

Dr. Sandip Shah, Vice President & Country Director, SN Power Holding Singapore Pte. Ltd.

South Asian countries are rapidly growing economies with large populations and require electricity supply to fuel their growth engines and to improve the living standards of their people. The average per capita consumption of electricity in the region is only about 500 kWh per year. However, demand for electricity is increasing rapidly and has outstripped the supply possibility in the near and far terms.

At present, all countries of the region are facing major deficit in electricity supply. There are seasonal imbalances in supply and demand of electricity. Some countries have had to resort to long hours of rolling blackouts to manage the electricity supply systems. Others have resorted to expensive diesel generation to meet peak-time shortages. Moreover, state electricity utilities are facing major financial difficulties due to which capacity addition, transmission and distribution strengthening and reduction of technical and non-technical losses have been affected. All countries are undergoing power sector reforms in a gradual manner and have achieved various degrees of success. The need for privatization of generation, transmission and distribution with a transparent regulatory regime is changing electricity market dynamics.

Electricity is generated in the countries of the region through different sources – coal, oil, gas, nuclear, hydro, wind, solar, biomass and other renewables. These resources are concentrated in certain areas in different countries. In order to achieve a balanced electricity supply system with affordable cost of electricity, it is essential to have a good generation mix from various electricity supply sources. The cost of unserved energy, climate change, safety in production are some of the challenges which are impacting the way the electricity supply industry will grow.

Due to the inherent nature of the electricity supply resources, it is becoming increasingly apparent that regional cooperation for electricity supply security is a must. The requirements for such a system to evolve are power trade agreements, establishment of regional grids, regional transmission grids, open access on transmission lines, cross-border electricity regulatory framework, deregulated market, and most importantly political will among the countries of the region.

1000 - 1025 Promoting De-Centralised Renewable Energy

Dr. Arunabha Ghosh, Chief Executive Officer, Council on Energy, Environment, and Water

India is the world's fifth largest electricity producer, but 45% of rural households do not have access to electricity. Energy access in rural areas offers opportunities that go beyond minimum requirements for electricity and heat. It creates the foundation for livelihoods, investments in more value added activities, and social benefits in the form of access to education or improved health outcomes. The presentation will draw attention to more than 250 companies, which currently provide decentralised energy solutions ranging from individual products (like lanterns and cookstoves) to home systems (such as two lights, a fan and mobile charging point) to micro-grids that connect several households together. These enterprises also use several technologies, although solar has dominated so far. Solutions are delivered through a variety of business models depending on choices across several parameters, including technology, scale of intervention, investment and revenue models. The presentation will argue that investments in the off-grid energy sector depend on at least one of three necessary conditions, namely, the promise of a long-term revenue stream; reduced risks for investors; and reduced operational costs. The presentation will finally describe how a network of decentralised energy entrepreneurs can deliver common operational services (information services; technology development and testing; and skills, training and capacity building), lower their costs and give opportunities to scale operations. Similar methods can be adopted for more widespread deployment of renewable energy in the armed forces. Decentralised clean energy is increasingly being viewed not only as a developmental imperative but a strategic one as well.

1025 - 1045 The Australian Defence Energy Integration Framework

Ms. Jane Holloway, Senior Systems Scientist, Australian Department of Defence

Military missions today need lots of energy with fuel supply lines that can be costly, vulnerable to disruption and a constraint on operational maneuver. Effective energy management and integration reduces risks to future Defence capability and operations.

Energy sustainment is a major issue for Australian Defence, and a key part of building organizational resilience to changes in military operating environments. Defence is a significant user of liquid fuels and has specific fuel requirements. A doubling of the amount of fuel needed coupled with rising fuel prices and continuing budget constraints will be a significant challenge for Australia.

The Defence Energy Integration Framework (DEIF) sets out an integrated risk management approach to ensure future energy productivity. The challenge is to use energy as a strategic advantage rather than bear it as a burden.

The aim of the DEIF is to ensure sustainable energy security for operations, now and in the future. Defence's ability to measure operational energy requirements will be improved, demand reduced, and the diversity and resilience of our energy supply increased. Key allies, like the US and UK, have diversified their operational energy demand and supply, using innovative energy solutions.

Outcomes of the DEIF process include greater situational awareness of energy risks – inside and outside Defence – and the emergence of a whole-of-Defence view of future energy issues. This led to organization-wide 'ownership' via a community of interest that is now becoming a community of action. This proved crucial in developing improvement options and getting executive endorsement for the DEIF.