



Marine Environment Pollution Challenges and Response in line with SDG-14 in South Asian Seas Region

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South Asia Co-operative Environment Programme (SACEP)

Marine Environment Pollution Challenges and Response in line with SDG-14 in South Asian Seas Region



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For copies of the report, write to:

South Asia Co-operative Environment Programme (SACEP)

69/4, Maya Avenue

Colombo 06

Sri Lanka.

Telephone: +94 11 2596443

Fax: +94 11 2589369

Email: secretariat@sacep.org

Web: www.sacep.org

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Thanks in particular, go to the organizer of Ocean conference for providing the opportunity to SACEP for organizing the side event. Special thanks also go to UN Environment to provide encourage and guidelines for organizing the side event. SACEP is grateful to Mr. Jamil Ahmed, Deputy Director, UN Environment, New York, USA for moderating the side event in highly professional manner.

Finally SACEP would like to extend its gratitude to all the participants from South Asian Seas member countries for attending the consultation meeting and providing their valuable inputs, suggestions and insights, future initiatives on marine environment pollution challenges and response in line with SDG-14 in South Asian Seas Region. This report is mostly based on their active participation and consultation.

SACEP is confident that, this report will help member countries in protecting and managing marine resources on sustainable basis. The support provided by the staff of SACEP, SASP and UNEP is greatly appreciated.



Dr. Muhammad Khurshid
Director General, SACEP

FOREWORD

The South Asia sub-region includes the countries of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. Among them Bangladesh, India, Pakistan, Maldives and Sri Lanka share the Indian Ocean, constituting the South Asian Seas (SAS) region and are highly vulnerable to the impact of marine pollution. Oil and chemical pollution, marine litters, ballast water, nutrient pollution from industries and agricultural waste are the main sources of marine pollution in South Asian Seas Region.

The seas around South Asia play an important role in the economy of the SAS member countries. The region's constantly expanding coastal population and development has made great demands on marine resources, with growing evidence seen in the further degradation of the marine environment and continued exploitation of living as well as non-living resources. South Asian Seas Programme is the appropriate regional platform working on need based actions for protection and sustainable management of marine environment including preparation of regional action plans, regional policy, coral reef taskforce, capacity development, awareness raising and experience sharing among the member countries.

This report aims at highlighting the marine environment challenges and opportunities and the way forward taken by the SACEP. This report is primarily based on the information shared by the participants from the SASP member countries and other relevant stake holders during the side event of the Ocean conference which was held on 6th June, 2017 at New York, USA.

I am confident that this report has reflected the key marine environment challenges, opportunities and figure out appropriate need based actions adopted by the SACEP and SASP member states for sustainable management of marine environment in the South Asian Seas region. Therefore, this report will prove as reference tools for future policy, planning, research and development in areas related to marine environment as well as pollution for the land and ship based sources.



Dr. Muhammad Khurshid
Director General, SACEP

ACRONYMS

BWM	Ballast Water Management
CCAC	Climate Clean Air Coalition
COBSEA	Coordinating Body on the Seas of East Asia
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ETP	Effluent Treatment Plant
GPA	Global Programme of Action
GPNM	Global Programme on Nutrient Management
ICT	Information and Communication Technology
ICZM	Integrated Coastal Zone Management
MFD	Marine Fisheries Department
MPA	Marine Protected Areas
NARA	National Aquatic Resources Research and Development Agency
NIO	National Institute of Oceanography
PA	Protected Area
SAS	South Asian Seas
SACEP	South Asia Co-operative Environment Programme
SASP	South Asian Seas Programme
STP	Sewage Treatment Plant
SDG	Sustainable Development Goal
UN	United Nations
UNEP	United Nations Environment Programme

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Introduction:

South Asia Co-operative Environment Programme (SACEP) organized a side event at the Ocean Conference on 6th June, 2017 in the UN conference Building, UN head quarter, New York, USA. This report is based largely on the presentations by the delegates from the member countries of South Asian Seas (SAS) region of SACEP and analysis of discussions in the side event of the world Ocean Conference entitled “Marine Environment Pollution Challenges and Response in line with SDG-14 in South Asian Seas Region”. Participants included high level officials from the five South Asian Seas region states as panelist, permanent representatives of the SAS member states to the UN, UNEP and other global and regional stakeholders. They included policy and planning professionals, practitioners and Representatives of Public sector, private sector and research & Academia and other global stakeholders. The objectives of the side event was sharing of information, experiences and analysis of the information through interactive dialogues for the achievement of goal and targets of SDG-14 related to marine environment pollution challenges and response in South Asian Seas Region. Representative of the UN Environment also expressed his views on the topic during the side event. The event was moderated by Mr. Jamil Ahmed, Deputy Director, UN Environment, New York, USA and the panelist included:

01. Dr. Mohamed Shinee, Minister for Fisheries and Agriculture, Maldives.
02. Dr. Sultan Ahmed, Director, Natural Resources Management, Department of Environment Government of Bangladesh.
03. Dr. K. Somasundar, Adviser/ Scientist “G”, Ministry of Earth Science, Government of India.
04. Mr. Asif Inam, Director General, National Institute of Oceanography, Pakistan.
05. Dr. Anil Premaratne Chairman NARA, Democratic Republic of Sri Lanka, Colombo, Sri Lanka.
06. Habib N. El-Habr PhD, Coordinator, GPA, UN Environment.
07. Dr. Muhammad Khurshid, Director General, SACEP

List of Participants is given at Annex-I. SACEP also launched a report on “Marine Environment Pollution-Challenges and Opportunities in South Asian Seas Region” during the side event.



SACEP Side Event-Delegates

Background:

Marine and coastal resources are of immense importance to humanity as it supports enormous socio-economic activities amounting to trillions of dollars annually through seafood, navigation, tourism, trade, sports and livelihoods. It is argued that due to the enormity of the marine resources, the future breadbasket lies in the blue economy of seas and oceans. The South Asian Seas region is situated in the middle of the super-busy east-west shipping route in the Indian Ocean, through which an estimated 60,000 ships pass every year, carrying two-third of the world's oil and almost half of all global container shipments. A total of some 525 million tons (2/3rd of the total global crude oil transportation) a year of crude oil pass into or through the region which is 25 per cent of total world movement of crude oil by sea. South Asia not only imports much of its own consumption of oil, but India, Maldives, Pakistan and Sri Lanka lie close to the main shipping route from the Middle East to the Far East. Additional maritime oil spill risks arise from non-tanker shipping, carriage of refined products, offshore exploration and production operations, and the transfer of oil cargoes at sea. Incidences of oil spill occurred in the past and such disasters may occur any time in the future. The oil spill disaster completely change the ocean ecology, destroy marine ecosystem, biodiversity, mangrove vegetation and the coastal community has to migrate to avoid inhaling polluted air. The economic consequences of oil spill disasters are far greater as the response and rehabilitation required large period of time and the ports and shipping, fisheries activities, tourism etc. is completely closed for months during the rehabilitation period.

With a view to provide institutional support for the protection and coordination of the environment issues among the South Asian states, SACEP was established in 1982 as an inter-governmental Organization by the Government of eight South Asian countries namely; Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka and they have ratified the articles of Association of SACEP. It is also registered with the Secretariat of the United Nations as Multilateral Organization in accordance with Article the 102 of the Charter of the United Nations. SACEP has its headquarters at Colombo, Sri Lanka and enjoy the status of a Specialized Agency under the Diplomatic Missions of the Ministry of External Affairs of Sri Lanka. SACEP is also the Secretariat for the South Asian Seas Programme (SASP) which is one of the eight Regional Seas Programmes of the United Nations Environment Programme.

South Asian Seas Programme is an agreement among the five countries of south Asia sharing the Indian Ocean. SASP is one of the regional seas programme registered with UNEP and it was agreed and signed formally by Bangladesh, India, Maldives, Pakistan and Sri Lanka in 1995. The objective of SASP is to protect and manage the marine environment and related coastal ecosystems of the region in a manner that it is socially acceptable, economically viable and environmentally sound. It aims at promoting and enhancing consultations and technical co-operation among states within the region; Highlight the economic and social importance of the resources of the marine and coastal environment and establish a regional co-operative network of activities of mutual interest for the whole region in line with the specific objectives of SASP.

The operational side of SASP includes the establishment of the SASP in consultation with the SASP member countries to identify the needs under the main components of Environmental Assessment, Environmental Management, Environmental Legislation & Institutional, Financial Arrangements and to identify the areas where priority activities need to be developed for implementation. The priority areas identified under SASP are Integrated Coastal Zone Management (ICZM); Protection of Marine Environment from Land based activities; Human Resources Development through Regional Centers of Excellences; and Development of national and regional oil and chemical spill contingency plans.

Objectives of the side event:

The side event brought together the SASP member countries and other international stakeholders to share their experiences about the Marine Environment Challenges and response in line with SDG-14 in the Indian Ocean region in South Asia. The specific objectives were:

- Analyze the marine environment challenges in South Asian Seas region;
- Response measures to address the challenges;
- Allow interactive dialogue and encourage participation of the audience in the debate for developing suitable recommendations;
- Encourage debate on linking the challenges and response with the SDG-14 and devise way forward;
- Propose measures to address the issue in an inclusive and sustainable manner; and
- Share success stories and experience about sustainable management practices of marine resources in South Asia.

Session Overview:

- Analysis of the marine environment pollution challenges in the South Asian Seas Region;
- Presenting and showcasing marine environment related case studies and Success stories by the SASP member states.
- Sharing concrete recommendations aiming at linking the marine environment issues with SDG-14 and implementation of the 2030 Agenda for Sustainable Development in the South

Mr. Jamil Ahmed highlighted the importance of the side event along with the objectives and importance of the ocean conference. He further informed about the UNEP role in assisting and formulating policy and plans for controlling marine environment pollution. After his brief introduction, he introduced the chair of the session and the panelists and their planned interventions. He invited the chair to formally open the side event. The chair appreciated the efforts of SACEP and UN to organize the event and welcomed the participants and panelists to the side event. He invited Bangladesh to present their case.

Actions taken by the government of Bangladesh:

Dr. Sultan Ahmed, Director, Natural Resources Management, Department of Environment, Bangladesh presented the initiatives taken by the government of Bangladesh related to marine environment pollution. He informed that, Bangladesh is a country of rivers comprising of a drainage outlet of three mighty rivers systems of the Ganges, the Bramaputra, and the Meghna which drains out to the Bay of Bengal. Therefore, the rivers, the coastal zone, and marine and sea waters are interconnected and work as a single unit. So pollution on land, river, waters, coastal areas also pollutes marine and sea waters. The Bangladesh Environment Conservation Act, 1995 provided strong legal mandates to conserve the environment by combating any marine environment pollution. No industries are permitted without



Dr. Sultan Ahmed, Director, DoE, Bangladesh

effluent treatment plant (ETP), sewerage treatment plant (STP) and solid waste management. Government has been establishing about a hundred economic zones all over the country, which will house different kinds of industries within the zones which will greatly help provision and maintenance of better pollution management. Special legislation has been in place to control and prevent pollution from ship breaking. Therefore, ship breaking is allowed without Environment Impact Assessment (EIA) and mitigation plan. Government has declared many areas as protected areas (PAs), ecologically protected areas (EPAs)

marine protected areas (MPAs), and special areas of seasonal protection in the Bay of Bengal to protect mother and juvenile hilsa. These areas have been managed under relevant rules and regulations. Besides natural mangroves of the Sundarbans and the Chakaria Sundarbans, Bangladesh have created 2,00,000 hectares of man-made mangrove ecosystems in the coastal zones of the country. These mangrove based green belts protect the country from natural disasters like cyclone, storm surges on the one hand and on the other hand they work as a bio-filter against land and sea-based pollutions. It is expected that by 2012, Bangladesh will increase by 30,000 hectares of mangrove in the coastal zones of the country.

These mangrove based green belts protect the country from natural disasters like cyclone, storm surges on the one hand and on the other hand they work as a bio-filter against land and sea-based pollutions. It is expected that by 2012, Bangladesh will increase by 30,000 hectares of mangrove in the coastal zones of the country. This as a whole has been working as a huge habitat for coastal and marine biological communities. Bangladesh has also banned polythene shopping bags. Plastic bottles are collected and recycled; so there are no plastic bags visible in the open environment. After any disaster, the communities clean the debris, twigs, leaves, etc. as regular beach cleaning and special cleaning drive after any disaster as a programmatic approach adopted in the country. Blue economy action plan have been prepared, and awaiting government endorsement. Ecosystem approach of exploration and exploitation of marine biological and physical resources has been the strategy adopted in the blue economy actions plan. The largest port of the country, Chittagong Port, has been taken under Green Freight Initiatives of the Climate and Clean Air Coalition (CCAC). A National Oil and Chemical Spills Contingency Plan (NOS COP) has also been prepared, and awaiting government approval. The Seventh Five Year Plan, and the Bangladesh Delta Plan 2100 have also included programmes for protection of marine ecosystems and combating marine pollutions.

Actions taken by the government of India:

Dr. K. Somasundar from the Ministry of Earth Science, Government of India expressed gratitude to SACEP for organizing the side event particularly on coastal and marine pollution of all kinds from the land-based activities including marine debris and nutrient pollution. India has a coast line of over 7500 km long covering 10 coastal states and 3 island territories of India.

Over a thousand islands are situated in the exclusive economic zone which are spread over an area of 2.21 million square kilometers. There are multiple agencies (Over 6 dozens) involved with activities of SDG-14, which may be the case with many countries of the region. India has taken various steps towards monitoring the coastal and marine pollution, challenges being faced in reducing or minimizing the marine pollution and how these are being addressed.



Dr. K. Somasundar, Scientist, MoES, India.

As we all know that the northern Indian Ocean is unique in many ways, and sensitive area of marine pollution. These include high biological productivity and over 400 million people live in the coastal waters whose livelihood demands on marine resources. There is no direct connectivity with polar region in the northern Indian Ocean for exchange of water towards dilution of pollution effect as over 70% of global oil is transported through the Indian Ocean. There is a need to address issues of marine pollution at various levels viz., national, regional and global, depending on the nature of pollutants.

India is following a systematic coastal monitoring program being implemented over a decade for assessment of health of the coastal seas of India. As a part of this program, about 25 important pollutant parameters are being monitored periodically at 20 locations in the coastal waters of India. This information is made available to the concerned agencies and coastal states for making contingency plan towards minimizing the coastal pollution. Besides, India is also planning to deploy coastal buoys for acquisition of real-time data and developing high resolution ocean models for generation of real-time information about coastal pollution. Recently, Government of India has launched a major campaign for solid waste management including plastics under the Clean India Program.

In order to address the marine pollution at regional level a UN workshop entitled “Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects the "Regular Process" was hosted by India in January 2014. India has committed to participate in the 2nd cycle of UN meeting and continue to work to deal with the coastal pollution. India emphasized the importance to have a selective regional, and bilateral cooperation to deal with the coastal pollution and strongly supported the efforts of SACEP towards sustainable management of the coastal and marine environment in the SAS region of the Indian Ocean.

Initiatives by the Republic of Maldives:

The Honorable Minister of Fisheries and Agriculture of the Maldives, H.E. Dr. Mohamed Shainee not only chaired the side event but also presented the marine environment challenges and opportunities in Maldives at the SACEP side event. During his inaugural speech H.E. Dr. Mohamed Shainee highlighted the global and interconnected nature of marine pollution, and emphasized how it directly impacts the economy, food security and quality of life of the Maldivian people having close ties with the marine environment. Minister Shainee also announced the launch of a national campaign to reduce plastics in the Maldives and the voluntary commitment of the Government of Maldives' fishery industry to address marine pollution, by reducing and phasing out use of plastics and intercepting ocean plastics for re-use. The national campaign to reduce plastic will be complimented by existing waste management policies incorporating both extended producer responsibility as well as the 3R (Reduce, Re-use and Recycle) principles.

Minister Shainee emphasized the abandoned or lost fishing gear known as ‘ghost fishing gear’ is a form of marine litter that is now becoming an increasingly bigger threat to coastal com the amount of fish-gear that are washed into the coral reefs of Maldives have increased exponentially and even more so in the recent years, mostly constituting of drifting gill nets and drifting Fish Aggregating Devices (FADs).



H.E. Dr. Mohamed Shainee, Minister, Republic of Maldives

The majority of the drifting FADs released to the ocean are tracked via satellite and so it is alarming to note that the perpetrating fishing companies that own these devices are fully aware of the impact these devices have on our fragile coastal ecosystems, but no actions are taken. In fact, more drifting FADs are being deployed than ever before. The negative environmental impacts due to such irresponsible fishing practices are immense. For a country like Maldives, with very few economic opportunities other than tourism and fishing, the impacts that such gear have on the marine environment is distressing and worrying. The health of our marine ecosystem is crucial for Maldives to sustain the livelihoods of our people.

Minister Shainee also requested the wider international community, to address the proliferation of drifting FADs and other ghost fishing gear in our oceans. There is little that coastal countries alone can do to address these issues. This is now becoming a global challenge that requires attention at a global and regional scale, and without such attention small coastal countries such as Maldives, would face dire consequences in the long term. Maldives believe that, it is high time we start to address this issue – for our ocean, for coastal communities, and for our future generation.

Initiatives by the government of Pakistan:

Dr. Asif Inam, Director General, National Institute of Oceanography (NIO), Pakistan informed that Pakistan, with 1000km long shoreline with the Arabian Sea has Exclusive Economic Zone (EEZ) of approximately 240,000 sq. km coastal area. With the recent extension in the Continental Shelf, Pakistan's total maritime area is now increased to 290,000 sq. km. The SDG 14 targets are being considered important to fulfill our nations' responsibility in the protection of our oceans and coasts.

All the relevant ministries are working closely in order to address environmental/resource management policies and conservation strategy.

The prevailing oceanic currents created by the winds of the Southwest Monsoon bring cold, nutrient-rich water to the ocean surface, fostering intense phytoplankton activity that is the base of high biological productivity in the Arabian Sea. It is a well-known fact that fisheries stocks are susceptible to fishing pressure and environmental degradation. There are indications that some important resources including shrimp, lobsters, sharks and crabs, etc., which have already crossed their maximum sustainable limits and their fisheries are believed to be severely overfished.



Dr. Asif, Inam, DG, NIO, Pakistan

The Marine Fisheries Department (MFD), Government of Pakistan has conducted a major project with technical assistance from the Food and Agriculture Organization (FAO) of the United Nations. A programme of demersal, pelagic and deep-sea fisheries resource surveys was conducted. The results of stock assessment surveys indicate depleted and declining fisheries resources with many of the most valuable groups declining significantly since the 2010 survey. An increasing fraction of the biomass collected during the survey was made up of small-bodied, fast-growing and mostly low-valued species. Much of this biomass was suitable solely for meal reduction however fisheries directed on it are likely to be inflicting important juveniles fishing mortality on of higher-valued species.

Pakistan is going through a process of growth and industrialization. The lack of efficient production and post-production technologies in the industrial sector, and the increasing quantity of untreated industrial effluent has degraded the marine environment. As a result of this, there is a constant threat to both human health and biodiversity. The plastic pollution has become very prominent on the beaches because of the indiscriminate use and uncontrolled disposal of polyethylene shopping bags, which litter the common beaches of Karachi. The other important form of plastic pollution is the presence of plastic pellets (polyethylene and polystyrene balls) of plastic products. These balls are common in beach sands along the high water mark. However, no study has yet been undertaken on the plastic pollution in the marine environment of Pakistan.

The health of ocean is vital to our nation and the economy. Ocean acidification will impact our food web and National Institute of Oceanography is seriously taking interest in ocean acidification research and its impact on fauna and flora. By the year 2025 NIO shall complete its surveys for the acidification level and would suggest the mitigation measures for controlling the CO2 emission and its absorption in the sea. He appreciated the role of SACEP in South Asia for protecting marine environment through coordination and capacity building.

Marine Pollution commitment by Sri Lanka:

Dr. Anil Premaratna, Chairman, National Aquatic Resources Research & Development Agency (NARA), Sri Lanka informed that Sri Lanka being an Island state in the Indian Ocean has got a land area of 65,610 sq. km. and an Exclusive Economic Zone of 517,000 sq. km. which is about 8 times of the total land area of Sri Lanka. He said that this is an opportunity to be part of the UN Ocean Conference, 2017. Sri Lanka is privileged, honoured and would like to thank the UN family for the initiative to protect the “Oceans or the life below water.” Sri Lanka is a party to the United Nations Convention on the Law of the Sea (UNCLOS) of 10 December 1982 and has ratified UNCLOS on 19 July 1994. As an island nation that is impacted by the health of the oceans, the Government of Sri Lanka expressed their unwavering constructive support to the protection of the health of the oceans especially as they came together in this “Ocean Conference” with a common and steadfast purpose, to identify ways and means to support the implementation of Sustainable Development Goal 14.

Sri Lanka organized a consultative workshop which was participated by representatives from over 20 Government and Non-Government entities and they deliberated on the future they want under SDG 14. The consultation focused on the targets and came with many approaches to work on “life below water” for developing short, medium and long-term interventions. The process also helped to “connect” the sector approaches to a multi-stakeholder and multi-sectoral thrust for improved synergy and minimum duplication. Sri Lankan commitment to the Ocean Conference under SDG-14 to prevent and significantly reduce marine pollution from all kinds of pollution on the “life under water”.

Sri Lanka recognize the value of adopting a ridge to reef approach to manage coastal pollution. In Sri Lanka coastal area receives 31% of the rainfall as runoff through 103 rivers equivalent to 40,000 million cubic meters.



Dr. Anil Premaratna, Chairman, NARA, Sri Lanka.

Therefore, the life below water is very much connected to “life on land.” To facilitate the development and SDG-14 agenda, Sri Lanka will develop a special marine pollution prevention strategy and an action plan for coastal and marine area conservation based on spatial variability of resources and increase the coverage of marine protected areas, also considering that the coastal area is home for 60% of the industries and 70% of the tourism infrastructure.

Technical capacity and knowledge is of a paramount importance for Sri Lanka to succeed in managing coastal and marine pollution. However, international partnerships, collaborations and exchange of experts and knowledge is also very important. Sri Lanka is also working towards adopting international conventions and standards on marine pollution including ballast water, oil spill, marine debris, invasive species and marine chemical pollution.

Presentation by the representative of UNEP-GPA:

Dr. Habib N. El-Habr, Coordinator, Global Programme of Action (GPA), UN Environment express his gratitude to SACEP for organizing the side event on marine pollution issues. He highlighted three important programme of UNEP aiming at reducing the marine environment pollution globally. He mentioned that, marine litter is one the most urgent environmental issues and has become one of the most important topics on the environmental policy agenda these days. In addition, UN Environment is launching a new massive open online course on marine litter. The course aims to inspire students to take action and become leaders in tackling the problem of marine litter.

Dr. Habib also emphasize importance on water that has been adversely been affected in quality by the dumping of untreated waste water. Poorly managed wastewater can lead to loss of both biodiversity and ecosystem services, contribute to climate change and threaten the livelihood of coastal communities. However, when managed properly, wastewater can alleviate pressure on water resources, improve food security and provide opportunities for green jobs. Wastewater, the theme of this year's "World Water Day" and waste water is providing a potentially dangerous source of pollution. However, viewing wastewater as a resource instead, can help us both protect our oceans and address water scarcity.

He further emphasized that, accelerated use of nitrogen and phosphorus is at the center of a complex web of development benefits and environmental problems. Excess nutrients from fertilizers, fossil fuel burning, and wastewater from humans, livestock, aquaculture and industry lead to air, water, soil and marine pollution, with loss of biodiversity and fish, depletion of ozone and additional global warming potential. He also highlighted the Global Partnership on Nutrient Management (GPNM) as a response to the 'nutrient challenge' as how to reduce the amount of excess nutrients in the global environment consistent with global development.



Dr. Habib N. El-Habr, UNEP-GPA

The GPNM reflects a need for strategic, global advocacy to trigger governments and stakeholders in moving towards lower nitrogen and phosphorous inputs to human activities. It provides a platform for governments, UN agencies, scientists and the private sector to forge a common agenda, mainstreaming best practices and integrated assessments, so that policy making and investments are effectively 'nutrient proofed'.

Vote of Thanks:

Dr. Muhammad Khurshid, Director General, SACEP thanked all the invited delegates and participants for their participation and interventions in the SACEP side event. At the outset, he extended his special thanks to the Honorable Minister of Fisheries and Agriculture of the Republic of Maldives, H.E. Dr. Mohamed Shainee for chairing the side event. He informed that, marine and coastal water pollution is getting increased importance at the national, regional and international level. In South Asian Seas region, millions of people depend on their livelihood on marine and coastal resource, but marine and coastal environment as polluted in multiple ways.

Marine litters, land and sea-based pollution, oil and chemical pollution, industrial effluent and sewage discharging in the marine and coastal waters lead to serious aquatic environment pollution. He expressed his gratitude to all the delegates from the SAS member countries for sharing their experiences and initiatives for protection of marine environment from pollution.

Dr. Khurshid mentioned that, marine pollution problems are being addressed under SAS programme which provide an interface between the international requirements and specific circumstances in this region. SAS is helping in building confidence, awareness, influencing national legislation and integrating environmental policies with development policies. He also expressed strong commitments of SACEP for the protection and conservation of marine and coastal environment through series of national and regional interventions. He also shared some of the initiatives and achievement of SACEP for the protection and conservation of marine and coastal environment such as Regional Oil and Chemical spill contingency plan; Constitution of Coral Reef Task force; Ballast Water Management (BWM) action plan; Marine and Coastal Biodiversity Strategy; Nutrient Pollution strategy etc. Dr. Khurshid also thanked the UNEP-GPA, Coral Reef unit and other relevant programmes of the UN Environment for their presence and valuable support for the protection of marine pollution in SAS region. He emphasized the need for increased use of social media and other ICT tools for information and awareness about marine environment challenges. He said, youth could play a major role in marine environment protection through awareness. Finally he extended greatest appreciation to Mr. Jamil Ahmed, Deputy Director, UN Environment, New York, USA for moderating the event.

Discussion and Analysis:

The panel and country presentation was followed by open question, comments and discussion by the participants. Dr. N. El-Habr, Coordinator, GPA, UN Environment, Nairobi, Kenya and Mr. Jerker Tamelander, COBSEA Coordinator, Coral Reef Unit, UN Environment, Thailand expressed their views on marine environment pollution from different sources and its consequences. Mr. Rogelio E. Villanueva, JR, Acting Director, Maritime and Ocean Affairs Office, Philippines opined that, coastal dwellers are the main actors and beneficiaries from the marine environment. On the other hand they are also directly responsible for marine pollution. If the marine environment get polluted they will suffer more compared to others. He wanted to know that, at up to what extent governments of the SAS member countries are involving local people in this process to make the marine environment pollution free. In response, Dr. Somasudar, Scientist, Ministry of Earth Science, Government of India mentioned that, this issue have already been incorporated in their policy documents. Accordingly, government is implementing these activities. Mass awareness programme, capacity building among the coastal inhabitants is a continuous process as part of the total activities. Dr. Sultan Ahmed, Director, Natural Resources Management, Department of Environment, Government of Bangladesh in reply to the query also shared his experiences on this particular issue.

Outcome and Recommendations:

The panel discussion, question and discussion by the audience led to the outcome and recommendations. To develop sub-regional country specific strategy to support the countries in the South Asian Seas Region in addressing and responding to the Marine Environment Pollution Challenges in the context of SDG-14 of the 2030 Agenda for Sustainable Development. Based on the panel discussions, questions and comments by the participants, the following recommendations were proposed as a way forward for devising future actions:

- There is a need of country specific marine pollution strategy/policy in South Asian Seas region to protect the marine environment from land based pollution sources;
- As a regional platform, SACEP may take necessary steps to prepare a regional action plan to protect the marine environment from land based pollution sources;
- Mass participation of coastal inhabitants in the national and regional plan to make the marine environment free from pollution;
- Awareness and capacity development of the relevant stakeholders connected with marine and coastal pollution from different sources;
- SACEP may arrange experience sharing for the government officials through conference/workshop/training/visit among the member countries for the protection of marine and coastal environment from pollution;
- Use of Information and Communication Technology (ICT) and social media for increased information sharing and awareness to protect marine environment from pollution;
- UN Environment and other global and regional development partner to assisting the SAS member countries and SACEP for the protection of marine and coastal environment from different sources of pollution.

List of participants

Sl. No	Name and Address	Contacts
1.	Dr. Mohamed Shinee Honorable Minister Ministry of Fisheries and Agriculture Republic of Maldives	Email: info@fishagri.gov.mv Tel: +(960)3322625, Fax: +(960)3326558
2.	Mr. Ahmed Sareer Permanent Representatives of Maldives to the United Nations Ambassador of Maldives to the United States	E-Mail: PR@MaldivesMission.com Tel: +1-212-5996194/5 Mobile: +1-917-434-3362 Fax: +1-212-661-6405
3.	Dr. Jamil Ahmad Deputy Director, UN Environment, NY, USA	Email: ahmad24@un.org Tel: +1 212-963-8210 Fax: +1 212-963-7341
4.	Dr. Anil Premaratna Chairman National Aquatic Resources Research & Development Agency (NARA), Government of Sri Lanka.	Email: premaratnaanil@yahoo.com ; chairman@nara.ac.lk Phone: +94332267360 Mobile: +94718407395
5.	Jerker Tamelander COBSEA Coordinator, Head, Coral Reef Unit UN Environment, Thailand	Email: tamelander@un.org Phone: 66 2 280 3829
6.	Dr. Sultan Ahmed Director, Natural Resources Management Department of Environment Government of Bangladesh	Email: sulbul2002@yahoo.com Phone: +8801552328617
7.	Dr. Muhammad Khurshid Director General SACEP	Email: khurshid@sacep.org Phone: +94112589376
8.	Pulakesh Mondal Senior Programme Officer (Regional) SACEP-SASP	Email: pulakesh.mondal@sacep.org Phone: +94115621320
9.	Mr. Midhath Rasheed Assistant Director Ministry of Environment and Energy Republic of Maldives	Email: midhath.rasheed@environment.gov.mv Phone: +9607943822
10.	Shafula Naeem Republic of Maldives	smaem@mrc.gov.mv

List of participants

Sl. No	Name and Address	Contacts
11.	Hussain Sihan Ministry of Fisheries and Agriculture Republic of Maldives	Husain.sinan@fishagri.gov.mv
12.	Mr. Wang Hong Administrator State Oceanic Administration People's Republic of Chania	1 Fu Xing Men Wai Ave. Beijing 100860 Tel: +86-10-68048201 Fax: +86-10-68030799
13.	Dr. Asif Inam, Director General National Institute of Oceanography Pakistan	Ministry of Science and Technology Karachi, Sindhu Province, Pakistan
14.	Habib N. El-Habr PhD Coordinator, GPA UN Environment	Email: habib.elhabr@unep.org Tel: +254207624591 Mob: +254701636915
15.	Dr. K. Somasundar Adviser/ Scientist "G" Ministry of Earth Science, Government of India	Email: soma-dod@nic.in Phone: +91-11-24669513 (O) +91-11-23073005 (R)
16.	Ahmed Murthaza Director General, Waste Management Department Ministry of Environment and Energy Republic of Maldives	Email: ahmed.murthaza@environment.gov.mv Phone: +9603018430 Mobile: +9607677404 Fax: +9603018300
17.	Mareer Mohamed Husny Assistant Director, Climate Change Ministry of Energy and Environment Republic of Maldives.	Email: mareer.husny@environment.gov.mv Tel: +9603018300 Mob: +9607924244
18.	B.K. Prabath Chandrakeerhi Director General Coastal Conservation and Coastal Resource Management Department Government of Sri Lanka	Email: dg.ccd.lk@gmail.com prabath22003@yahoo.com Tel: +94112449197 Mobile: +9401717788569 Fax: +94112438005
19.	Mr. Mangula, Director, Wildlife Department Government of Sri Lanka	Email: manulawildlif@gmail.com Cell: +94714428858
20.	Muhammad Hulquamin Third secretary, Pakistan Mission to the UN	emzedcee@yahoo.com
21.	Leslie Tammminin Seventh General Advisors Santa Monica, California, USA	Email: leslie.tamminen@gmail.com Tel: 3106640300 Mob: 3107803344
22.	Jafe de Politica	Email: ovelez@cobi.org.max

List of participants

Sl. No	Name and Address	Contacts
	Public Policy Manager Distrito Federal, Mexico	Tel: +525555747909
23.	Rogelio E. Villanueva, JR Acting Director Maritime and Ocean Affairs Office, Philippines.	Email: rogelio.villanueva@dfa.gov.ph Tel: +6328344859
24.	Vincent V. Hilomen Project Director, Biodiversity Management Bureau, Quezon City, Philippines.	Email: vvhilomen@up.edu.ph Tel: +6329611559 Mob: +639088114304
25.	Ran Amir Director Ministry of Environmental Protection State of Israel	Email: rani@sviva.gov.il raniamir@013.net Tel: +97248633500 Mob: +972506233050
26.	Loreley Picourt Intergovernmental Policy Coordinator UNEP	Email: L.picourt@gmail.com Tel: +13477591054
27.	Rashid Sumaila, PhD Professor, University of British Columbia Canada	Email: r.sumaila@oceans.ubc.ca Tel: +16048220224
28.	Stewart Harris Director Marine and Environmental Stewardship Washington DC	Email: stewart_harris@americanchemistry.com Phone: 2022496626 Mob: 4105625976
29.	Sam Barratt Chief, Public Advocacy and Communication UN Environment	Email: sam.barratt@unep.org Phone: +254207622544
30.	Dr. Wilfried Winiwarter Senior Research Scholar Air Quality and green House Gases, Austria.	Email: winiwart@iiasa.ac.at Tel: +432236/807479
31.	Athraja de Silva Government of Sri Lanka	doc_officer@slmission.com
32.	Lia Tawcey Government of Philippines	Lia.tuivuya@govt.gov.ph
33.	Dr. B. Meenakumari Chairman, NBA.	meenakumarib@gmail.com
34.	Alf ke-Yin Chen International Development Organization	alfchen664@hotmail.com
35.	Oscar Velez	ovelez@cobi.org
36.	Mr. Nabeel Munir Deputy Permanent Representative of Pakistan Mission to the UN, New York, USA	munir.nabeel@gmail.com

List of participants

Sl. No	Name and Address	Contacts
37.	Steve S.J. Lee Climate Change Activist and Policy Advocate to the UN.	steve@fesplanet.org

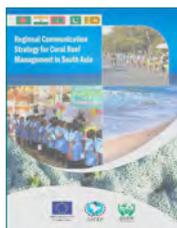
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South Asia Co-operative Environment Programme (SACEP)
69/4, Maya Avenue, Colombo 06, Sri Lanka.
Tel : +94 11 2596443 / Fax: +94 11 2589369
E-mail: info@sacep.org / secretariat@sacep.org
Web : www.sacep.org