



First Sub-Regional Workshop for Implementing the Global Waste Management Goals Towards Addressing SDGs in South Asia

Report of the Proceedings

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I Introduction

Background

Solid Waste Management (SWM) is a universal issue affecting every single person in the world, most notably in the sub-region of South Asia, which covers about 12% of the Asian continent or 3.5% of the world's land surface area. Home to roughly 1.8 billion people, South Asia generates approximately 334 million tonnes of waste per year of which 174 million tonnes (57%) is organic in content. In addition to the increase in municipal solid waste, managing complex and emerging waste streams, including e-waste, food waste, construction and demolition waste, disaster waste, plastic and marine litter, is also a growing issue in need of attention. Across many countries in South Asia, about 80%-90% of plastic waste is inadequately disposed of, and therefore poses the risk of polluting land, rivers and oceans. Due to a lack of effective policy and regulations, and insufficient technical, financial and human resources, many countries in the sub-region are facing tremendous challenges to provide adequate waste management services. Waste collection rates are low (44%) causing uncontrolled dumping into rivers, and open spaces, resulting in severe public and environmental health problems. The most prevalent treatment methodology is landfilling, as it is the cheapest and easiest way to dispose of waste. However, many landfills are operated as unsanitary dumpsites (75%), also generating public health and environmental risks.

In this regard, sustainable waste management based on the waste hierarchy and 3R principles (reduce, reuse and recycle) is increasingly gaining local, national and international attention as one of the key drivers for achieving both the Sustainable Development Goals (SDGs) and commitments under the Paris Agreement, with its co-benefit approach addressing multiple development challenges whilst pushing climate actions forward through mitigating greenhouse gases (GHGs) and Short-lived Climate Pollutants (SLCPs) – associated with global warming and ambient air pollution. On the waste-climate nexus, recent analyses have identified that more than 60% of initially proposed Nationally Determined Contributions (NDCs) on climate include references to waste actions.

Accordingly, the South Asia Co-operative Environment Programme (SACEP) together with the IGES Centre Collaborating with UNEP on Environmental Technologies (CCET) has interacted with governments in South Asian countries (**Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka**) towards the development of a Report on the current state of waste management in the Sub-region, as well as a Sub-Regional Roadmap which would communicate regional voices, enhance regional cooperation and guide implementation towards the above goals, building on the preceding discussions and priority action areas identified by UNEP's Global Waste Management Outlook (GWMO) and Hanoi 3R Declaration.

Guided by this ambition, SACEP and CCET will work with sub-regional governments towards more effectively addressing waste issues, delivering on the promise of the 2030 Development Agenda by accelerating the transition towards more resource-efficient, climate-friendly and pollution-free societies.

Objectives

As a part of this sub-regional co-operation activities, SACEP and CCET in collaboration with the International Centre for Integrated Mountain Development (ICIMOD), the United Nations Environmental Programme (UN Environment) – International Environmental Technology Centre (IETC) and the Ministry of the Environment, Japan (MOEJ) organised a policy dialogue on implementing the Global Waste Management Goals towards Addressing SDGs and Paris Agreement in South Asia, on **25 – 26 March 2019, in Kathmandu, Nepal.**

The specific objectives of this workshop were to:

- Share proposed plans and build consensus among member countries towards development of the Status Report on waste management in South Asia and a Sub-Regional Roadmap as an implementing and monitoring mechanism for delivering on global waste management goals and related SDGs as well as NDCs in the sub-region.
- Review the current status of SWM in the member countries and build consensus on baseline data as the basis for the Status Report. Secure support for acquiring additional data if necessary for baseline analysis.
- Discuss the global waste management goals and 3R targets, identify priority areas, set measurable targets, and develop appropriate actions and interventions for the sub-regional roadmap.
- Input into the follow-up dialogues in future to elaborate potential financing options, technical innovations, partnership modalities and requisite monitoring and reporting mechanisms for its continued work in South Asia.

Programme Date:

25- 26 March 2019

Programme Venue:

Kanchanjangha hall, ICIMOD ,Dhapakhel, Lalitpur

Co-organizers

South Asia Co-operative Environment Programme (SACEP)

IGES Centre Collaborating with UNEP on Environmental Technologies (CCET)

United Nations Environment Programme – International Environmental Technology Centre (IETC)

Collaborating Organizations

Ministry of Forests and Environment, Government of Nepal (MOFE)

Ministry of the Environment, Japan (MOEJ)

International Centre for Integrated Mountain Development (ICIMOD)

Participants:

34. A detailed list of participants including their designation, organization and country can be found in Annex 2.

Day 1

II Inauguration Session

Ms. Priyankari Alexander, Programme Officer of SACEP served as master of ceremonies. She welcomed all the distinguished guests and participants from South Asia and called upon the Chief Guests and Special Guests to come up to the dais.



Chief Guests were the Honourable **Mr. Shakti Bahadur Basnet**, Minister, Ministry of Forests and Environment, Nepal, **Dr. Abas Basir**, Director General, South Asia Co-operative Environment Programme (SACEP), and **Mr. Kazunobu Onogawa**, Director, IGES Centre Collaborating with UNEP on Environmental Technologies (CCET), and Special Guests were **Mr. Sangye Chewang**, Director, Environment Natural Disasters and Bio Technology, SAARC Secretariat, and **Dr. David Molden**, Director General, International Centre for Integrated Mountain Development (ICIMOD).

Welcome Address by SACEP

Dr. Abas Basir, Director General, South Asia Co-operative Environment Programme (SACEP) delivered his welcome address. The details of the welcome speech can be found below:



Honorable Minister Mr. Shakti Bahadur Basnet, Mr. Kazunobu Onogawa, Dr. David Molden Distinguished Delegates, Excellencies, Representatives from international organizations and research institutions, ladies and gentlemen
Good morning and welcome!

As the Director General of the South Asia Co-operative Environment Programme, I am particularly pleased to welcome you all to the First Sub-Regional workshop on Preparation of the Status Report and Sub-Regional Roadmap for Implementing the Global Waste Management Goals toward Addressing SDGs in South Asia.

First of all, I would like to thank the IGES Centre Collaborating with UNEP on Environmental Technologies (CCET), the United Nations Environmental Programme (UN Environment)-International Environmental Technology Centre (IETC), and the Ministry of the Environment, Japan for their interest and support in the development of a Status Report and sub-regional Roadmap for South Asia and for the Ministry of Forests and Environment, Government of Nepal, and the International Centre for Integrated Mountain Development (ICIMOD) for hosting and facilitating this event and making this workshop a reality.

The primary objective of this workshop is to validate the data on solid waste management which we have already received from our member countries and identify gaps/priority areas to consider prior to developing the 'Status Report on waste management in South Asia' and the 'Sub-Regional Roadmap' as an implementing and monitoring mechanism for delivering on global waste management goals and related SDGs as well as NDCs in the sub-region.

As we all know, rapid population growth and uncontrolled industrial development are seriously degrading the urban environment in many countries in South Asia. One of the most serious environmental consequences of the process of urbanization is the ever-growing amount of solid and liquid waste generated by cities in the countries of South Asia.

According to reports in South Asia, approximately 334 million tonnes of waste is generated per year. However, region-wide studies indicate that an effective, efficient and sustainable waste management system is lacking in the region's urban areas. This has resulted in pollution and a growing volume of solid and hazardous waste, which are major threats to both the environment and to sustainable development in countries in the region.

As an Inter-governmental Organization established in 1982 by the governments of South Asia to promote and support protection, management and enhancement of the environment in the region, the South Asia Co-operative Environment Programme (SACEP) has identified "Waste Management" as one of its priority thematic areas approved by its Governing Council. SACEP is very pleased to facilitate this kind of a valuable event in order to address this major environmental challenge.

The event aims to provide the rationale for taking a holistic approach towards waste management and for recognizing waste and resource management as a significant contributor to the region's sustainable development and for achieving the SDGs. It provides a critical overview of policy instruments that have been deployed, what has worked and what has not and under what circumstances. It also identifies policies and governance strategies for sustainable waste management, while considering the varying levels of economic and human development across the countries of the region, their priorities, needs and capacities.

It is worth noting that an effective approach towards waste management requires us to establish our waste management system on the basis of resource conservation and recovery, the practice of 3Rs and circular economy, and the introduction of life-cycle thinking to prevent and minimize waste. I am confident that the outcome of our deliberations over the next two days will provide significant inputs in implementing the Global Waste Management Goals toward addressing SDGs in South Asia. We could use our data specific to each country in the South Asian Region to get an understanding of what has happened and why it has happened with respect to waste management.

In conclusion, I would like to extend a special welcome to our Chief Guest today, His Excellency Shakti Bahadur Basnet, Minister of Forests and Environment, Nepal for being with us this morning and to the fellow enforcers representing various international agencies and also recognize our distinguished representatives from Country Governments of South Asia who are with us today. We are grateful for your participation in our workshop in seeking workable solutions, and we look forward to hearing more from you once you return home on what is happening across South Asia in this important area.
Thank you all for coming.

Inauguration Address by IGES:

Mr. Kazunobu Onogawa, Director, IGES Centre Collaborating with UNEP on Environmental Technologies (CCET) delivered his opening remarks at the Sub-regional Workshop. Details of speech in his own words are as follows:



Dear Honorable Minister Mr. Shakti Bahadur Basnet, Dr. Abas Basir, DG of SACEP, Dr. David Molden, DG of ICIMOD, Distinguished guests, colleagues, ladies and gentlemen. Good morning.

On behalf of the IGES Center Collaborating with UNEP on Environmental Technologies, “CCET” I would like to welcome all of you to this meeting.

First of all, I would like to thank SACEP for its collaboration to organize this meeting, and also I highly appreciate the kind hospitality of ICIMOD by providing us with the venue and logistic support for today’s meeting.

Ladies and gentlemen,

Waste management is an issue of high interest in the world, and all countries are paying great attention to this problem.

This January, there was a high level forum of Ministers & Environment Authorities in Asia and the Pacific, organized in Singapore under the leadership of UNEP. At this forum, all the ministers and high level government representatives touched upon the issue of waste management as the most urgent and important subject.

For the international community, some current and most common agendas are SDGs and Paris Agreement for climate change. For the SDGs, it is said that waste management is related to 12 out of the 17 goals, including resource management, people's health, basic sanitation, diligent work, etc.

For the climate change subject, landfill sites or treatment processes for waste generate GHGs. Proper management of waste is required from all the perspectives of our current concerns.

On top of these, waste management is being highlighted due to the newly emerging subject of marine plastic litter. Unfortunately, Asia is considered to be the major source of this pollution. While sea-based plastic waste such as fishing gear is one source of this marine plastic litter, it is said that land-based plastic waste makes up 80% of marine plastic litter. Improper management of used plastics, in other words, due to improper waste management, is causing this marine plastic litter issue. The issue of microplastics is also a huge problem which may require a different approach from those for ordinary plastic waste. Waste management costs a lot for municipalities. More than 60%, sometimes 80% of the whole budget of municipalities is taken up by waste management in many Asian cities.

We know well that waste management in this sub-region is not going well. Waste management is not a simple technology issue, but an issue which requires the participation of all stakeholders. From upper stream to downstream, that is from production to consumption, and further to waste management - many stakeholders are involved. Without the active participation and cooperation of the general public, proper waste management cannot start.

We know the concept of the 3Rs - Reduce, Reuse and Recycle. Waste management needs to be discussed combined with this concept of the 3Rs. Waste management starts with segregation of waste at home, at the office, and in industries. Segregation of waste leads us to wise utilization of our limited resources and further, to a reduction of waste generated.

If we are successful in achieving waste reduction, it will lead us to less need for waste management, including collection, transportation, treatment and disposal. It will further lead to less cost, less need for landfill sites, and less capacity of treatment facilities including WtE technologies. Segregated organic waste can be turned into compost. Segregated metals, plastics, glass and others would become new resources.

Ladies and gentlemen, concept-wise, the importance of waste management is well shared in our world, already. Hence, the question we have now is "How can we materialize such concepts on the ground", in other words, the method of enforcement. Modern and advanced technologies are not the only solution. Asia is diverse. Socially, economically and environmentally, different conditions exist in Asia. If conditions are different, there should be different approaches available. Large scale, civil engineering-based waste management may take time and budget. But there are other types of actions we can start from today, such as community-based

Contributions from the academic sector are expected. That is why I have invited Prof. Ghosh and Prof. Anurudda to this meeting. For large scale implementation, we need technical and financial cooperation. That is why I have invited WB, JICA and others to this meeting. We can further expand such invitations to other international and regional organizations including those from outside of Asia.

Observing Asia, we understand that South East Asia is taking off already in their development, and we need to admit South Asia is being left behind somewhat. For the international community, it is time to focus more on South Asia. Donors are also looking for good projects to support. What is required for us is our strong commitment to work on enforcement of the developed policies and action plans.

I hope, through discussion at this meeting, we can find an approach for materialization of our goals for waste management.

Thank you.

Address by ICIMOD

Dr. David Molden, Director General, the International Centre for Integrated Mountain Development (ICIMOD) delivered his remarks as follows:



Honorable Minister Shakti bahadur Basnet, Mr. Onagawa, Director, IGES, Dr. Abas Basir, Director General, SACEP, Mr. Chewang, SAARC Secretariat, distinguished participants and ICIMOD colleagues. Welcome to ICIMOD. We are very thankful and honored that you have chosen ICIMOD as venue.

We feel this is a great opportunity to expand our collaboration with an addition to focus a little bit on mountain issues as all of these issues are very clear to us. Honorable minister, we were again happy to work with you under your leadership. We are building a relationship and are so happy to have you here and it is good for ICIMOD to have this close relationship. This is special thanks to you as well.

As a short briefing about ICIMOD, it is the center for integrated mountain development. Basically, our motto is mountains and people, especially serving the Hindu-Kush Himalaya region, Afghanistan, Nepal, Bhutan, China, Bangladesh, Pakistan, Myanmar and India. It is also known as SAARC+2 or -2. and we are very much connected to Sri Lanka and the Maldives, connected to these island countries by water and climate change. Our focus is mainly on the hills and mountains in this fantastic mountain range. Here, we have high biodiversity as well as diversity of people living in the area. I feel this area is very important for resources in Asia like water, energy, and food production that come from the mountains. But it is also an area under threat from climate change and rapid socio-economic development.

Solid waste management is one of main issues in mountain regions. Lots of people in this region migrated to cities, and cities are growing so fast that is very difficult to keep up with waste management. This is a growing challenge. This region is also an important place for tourism. Facilities for solid waste management are not present in these tourist areas. So it is sad to see a high accumulation of plastic in mountain areas. This is an urgent issue to be addressed in mountain regions. That's why we are so happy that all of you have come here today. I think the key is not to see these issues at just problems but look at the other side and see them as opportunities as well. Nepal has recently changed its federal structure and could possibly address these issues and bring opportunities to mountain regions. Rather than jump over traditional technology, I feel that the best way for waste management is reuse, reduce and recycling through a circular economy as Mr. Onogawa said. Why not go immediately into it as the best of way to deal with solid waste management in the growing city? Why not be an example to the world working in this area? That's why there is an opportunity for doing that with new technology coming in with new government structure. Also there are organizations like SACEP, SAARC, and ICIMOD, and we have a chance for countries in this region to work together, to share experience and to share knowledge to figure out how to deal with awareness. These are real opportunities.

Finally, I really do feel that together we can do good things. Having you here is good inspiration for us also working on mountain conditions. We would like to collaborate much more with all of you in addressing this issue. Thank you very very much and welcome once again to ICIMOD.

Remarks by SAARC Secretariat

Mr. Sangye Chewang, Director, Environment Natural Disasters and Bio Technology, the SAARC Secretariat office delivered his remarks as follows:



His Excellency Shakti Bahadur Basnet, Honorable Minister of Environment and Forestry, Government of Nepal

Mr. David Molden, Director General (International Centre for Integrated Mountain Development (ICIMOD)

Mr. Abbas Basir, DG, South Asia Cooperative Environment Program

Mr. Kazunobu Onogawa, Director, IGES Centre for Collaborating with UNEP and Environment Technologies

Distinguished delegates, Ladies and gentlemen, good morning to you all

First of all, I wish to convey the warm greetings of H.E. Mr. Amjad Hussain B. Sial, Secretary General of SAARC, to all the distinguished participants assembled here today. He has expressed his good wishes for successful deliberations in the workshop. May I also thank the **co-organizers** and the collaborating organizations for the invitation extended to the SAARC Secretariat.

It is truly an honour and a privilege to be here today.

Distinguished Participants

One of the ever growing challenges facing the SAARC member countries is the environmental challenges associated with waste generation (especially Solid Waste) and waste management. With the ever increasing population in South Asia which is already home to 1.8 billion people and with increasing urban migration, the problems in addressing the waste management issue is a growing concern --- mainly due to varying types of waste generated requiring different solutions. Such a coordinated approach needs to be undertaken at all levels with clear responsibility and legislations. The absence of a good regulatory framework and sound waste management system could have serious environmental impacts in terms of land and air pollution, water pollution etc. affecting lives and livelihood of the people in the region.

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Distinguished Participants

The preservation and protection of the environment remains a high priority on the agenda of cooperation being pursued by the member states of SAARC. The Heads of the States/Governments have in all the successive SAARC summits reiterated the need to strengthen and intensify regional cooperation to preserve, protect and manage the diverse and fragile ecosystem of the region. The meetings of SAARC Environment Ministers and the Technical Committee on Environment and Forestry also provide key mechanisms to guide and facilitate the agenda of cooperation.

Some of the most significant initiatives taken to strengthen Regional Cooperation in areas of Environment, Climate Change and Natural Disasters are the SAARC Environmental Action Plan (1997), Dhaka Declaration and SAARC Action Plan on Climate Change 2008, the comprehensive Framework on Disaster Management (2006-2015), Thimphu Statement on Climate Change 2010, SAARC Convention on Environment, and SAARC Agreement on Rapid Response to Natural Disasters 2011.

These instruments provide the necessary basis for cooperation on waste management among the SAARC member countries. The SAARC Convention on Cooperation on Environment signed during the Sixteenth SAARC Summit was ratified by all member states and entered into force with effect from 23 October 2013. It identifies 19 areas for cooperation (waste management is one of them) in the field of environment and sustainable development through exchange of best practices and knowledge, capacity building and transfer of eco-friendly technology. The implementation of the Convention has been entrusted to a Governing Council, comprising of the Environment Ministers of Member States.

The SAARC Action Plan on Climate Change also provides for sharing best practices on nationally appropriate mitigation actions like waste management.

SAARC has also established collaborative arrangements with regional and international institutions like the United Nations Environment Programme where one of the overarching themes is solid waste management; capacity building on integrated solid waste management with particular focus on hazardous waste and e-waste.

SAARC has an MoU signed with SACEP also.

Distinguished Participants

In 2010, as directed by the SAARC Environment Ministers, the third Expert Group Meeting was held in New Delhi among the SAARC member states to discuss the concept paper on the Solid Waste Management proposal prepared by India which was approved by the 37th Session of Standing Committee held in Bhutan in 2011. The fourth meeting of the Technical Committee on Environment and Forestry also considered the report with directives to prepare a compendium on best practices including advocacy and public-private partnership and regulatory framework of member states on waste management. The compendium also includes the list of technologies available in the member states.

Workshops on waste management were also conducted for sharing experiences, expertise and best practices among member states.

I would like to inform the gathering here that SAARC Secretariat is proposing to host an Inter-Governmental Expert Group on Climate Change in May 2019 during which implementation of the various summit declarations and agreements by the member states will be reviewed. This will be followed by the SAARC Environment Ministers Meeting.

Also I would like to take this opportunity to inform you that, as the Current Chair of the Committee on Environment and Forestry, Nepal has expressed its willingness to host the Tenth Ministerial Meeting on Environment and its preceding meetings.

Distinguished Participants

In conclusion I would like to state that workshops such as today's can truly complement the process of sharing each other's experiences, ideas and best practices in a regional context. The SAARC Secretariat hopes that the recommendations emanating from this workshop would lead to timely policy initiatives and implementation mechanisms.

I wish the workshop on solid waste management all the success and wish the distinguished delegates a wonderful and pleasant stay here.

Thank you.

Address by the Guest of Honor

Honourable Mr. Shakti Bahadur Basnet, Minister of Forests and Environment, delivered his valuable remarks as the guest of honor at the workshop. Details of his speech in his own words are as follows:



Dr. Abas Basir, Director General, SACEP, Dr. David Molden, Director General, ICIMOD, Mr. Kazunobu Onogawa, Director, CCET, Mr. Sangye Chewang, Director, Environment Natural Disasters and Bio Technology

Distinguished Participants,
Friends from the media, ladies and gentlemen!

It is a matter of great pleasure for me to be with you at this august gathering. Allow me, on behalf of the Ministry of Forests and Environment, to extend my warm welcome to you all in Kathmandu and express my sincere gratitude to SACEP and IGES for bringing together experts and professionals at this workshop. I am confident that this workshop will help to share the knowledge among member countries and identify possible areas of collaboration and cooperation under the theme of the workshop.

Globally, solid waste management is one of the emerging environmental issues these days. Urban population growth and economic development has led to increasing generation of municipal solid waste. Besides municipal waste, industrial waste, healthcare waste, electronic waste and other hazardous wastes are also increasing day by day. Environmentally-friendly waste management, at the moment, has been a great challenge for us which, I believe, might be common in this region. Despite the challenges, I am sure that waste may become a resource if we manage it properly. For that purpose, we need to strengthen technical capacity, generate financial resources and generate public awareness. Moreover, the 3R principle - Reduce, Reuse and Recycle - is an important key to protecting the environment and sustainable use of natural resources.

The Government of Nepal is committed to protect the environment and achieve the sustainable development goals. The Government of Nepal enacted the Solid Waste Management Act in 2011. The Act clearly highlights maintaining a clean and healthy environment by minimizing the adverse effects of solid waste on public health and the environment. Local governments have been made responsible for the construction, operation, and management of infrastructure for collection, treatment, and final disposal of municipal solid waste.

As the country has entered into a federal structure, we are realigning our policy and institutional arrangements as per our constitutional provision. We are formulating an Environment Protection Act that has a vision of having a clean and healthy environment. Similarly, all three tiers of government have placed the environment agenda as a priority. Specifically, local governments are responsible in managing solid waste in an environmentally-friendly manner.

I believe, during this two-day meeting, you will learn from each other, discuss the relevant challenges and explore opportunities for stronger partnerships in the future. Environmental protection and management is not only a national issue, but also a regional and global issue, so we need to work collectively in maintaining a clean, healthy and safer planet. On this front, I assure our firm commitment in working together both at regional and global level. Finally, I wish this workshop a grand success and wish all the foreign participants a pleasant stay in beautiful city of Kathmandu.

Thank you!

III Photo Session



Group Photo

Respected Participants from South Asia, Afghanistan, Bangladesh, Bhutan, Maldives, Nepal , Sri Lanka, Pakistan and Delegates from organizations, SACEP, IGES, ICIMOD, and SAARC with Honourable Mr. Shakti Bahadur Basnet, Minister, Ministry of Forests and Environment , Nepal

IV Technical Session

Introduction to the CCET and proposed South Asia programme activities

Dr. Jagath Premakumara, CCET

Dr. Premakumara introduced how CCET was established as a collaboration center between IGES and UNEP in 2014. He presented one of the main activities of CCET as development of waste management strategies and action plans in countries including Myanmar, Cambodia, and India. Next, he further explained CCET's contribution in developing knowledge products, conducting capacity development, and cultivating partnerships, networking and peer learning etc. Then he presented on CCET has selected South Asia as a major region in the solid waste management sector and explained briefly about South Asia collaboration activities. Finally, he gave an outline of the sub-regional roadmap development process of South Asia through Sustainable SWM in addressing SDGs and NDCs. Details of his presentation can be found in Annex 3.



Introduction of Participants

All participants introduced themselves to the floor. The complete list of participants is attached as Annex 2.



Key Note Presentation –SWM situation in South Asia

Prof. Sadham Kumar Ghosh, Jadavpur University, Kolkata, India

After the introductory session, Dr. Ghosh delivered a keynote presentation illustrating the state of SWM in South Asia. A summary of his key points is as follows:



- The state of generation for MSW, E-waste and Bio-Medical Waste in the respective countries was reported, and strengthening the data management system is critical for waste management planning.
- Despite high resource saving and relevant mitigation potential, the recycling rate generally is low in the sub-region, due to (1) weak social awareness and political will, (2) unorganized collection & segregation mechanisms, (3) outdated and inadequate infrastructure, (4) absence of appropriate technologies, (5) dependence on imported materials for quality waste, and (6) absence of specific rules and enforcement.
- The current total waste generation of 334 million tons in the sub-region is projected to increase to 466 million tons by 2030, with the per capita waste generation rate (regional average) increasing from 0.52 to 0.62 kg/capita/day during the same period.
- Management of plastic waste is posing another challenge. In addition to the strategy for plastic waste management, development of alternatives to plastic products should also be considered.
- The number of emerging waste types is increasing, with e-waste being a major challenge in the region, posing environmental and health risks.
- Formalization of the informal sector is a crucial strategy for securing social protection of the population as well as addressing environmental challenges in the region through inventorizing, providing social security, and incorporating in institutions.
- Transition from a linear economy based on “make-take-waste” model to a Circular Economy where raw materials can be recovered and recycled again from waste. To this end, integrating recyclability considerations into product design stage (re-designing and re-engineering) is indispensable, going beyond mere focus on material reuse and recycling technologies.
- Transboundary movement of waste is another area of government intervention, exemplified by the introduction of China’s waste import ban and subsequent oversupply of recyclable waste in the Asia-Pacific region.
- Preparing specific legislations for specific waste with objectives and targets will make the implementation easier, as exemplified by EU as well as in South Asia, for example India, which has passed six target-specific waste management rules including C&D waste.

- The SWM situation in South Asian countries touches upon the challenges and on-going activities related to SWM in eight countries in the sub-region. Marine pollution induced by littering and its effect on marine ecosystem and human health were also highlighted. In conclusion, he underlined the relevance of SWM to SDGs particularly to Goals 14 and 17, and provided key approaches/principle for sustainable solid waste management. Details of his presentation is attached in Annex 3.

Presentation of Country Reports 1

The session was chaired by Mr. Kazunobu Onogawa, Director, CCET

Status of SWM in Afghanistan

Mr. Hamidullah Nikzad, Environmental Planning Expert & Malang Hemat, Environmental Expert from National Environmental Protection Agency, Afghanistan

Mr. Hamidullah Nikzad gave a presentation on the status of SWM in Afghanistan. He gave a definition of waste and waste classification based on the National Waste Management Policy developed by Afghanistan in 2010, and the country's legislative framework on SWM. He explained the status of waste management in Kabul City, explaining the total waste generation is 3,000 tons/day with per capita waste generation of 0.4kg/day. He also described the waste collection, treatment and disposal system in Kabul City. He mentioned that improper sanitary landfill sites and lack of adoption of modern technologies are major challenges while also highlighting opportunities in waste management through residue derived fuel and recycling production. He also emphasized waste segregation and highlighted recycling activities in Afghanistan. Details of his presentation is attached in Annex 3.



Status of SWM in Bangladesh

Mr. Mohammad Aatur Rahman, Senior Chemist, Department of Environment, Rajshahi Divisional Office, Bogura, Bangladesh

Mr. Mohammad A. Rahman began his presentation highlighting demographic and geographical figures about Bangladesh. He highlighted major environment problems such as deforestation, loss of biodiversity, water and air pollution etc. in Bangladesh. He further elaborated on developments by the Department of Environment (DoE)



including the Environmental Policy 1992, Environment Conservation Act 1995, and Environment Conservation Rule 1997, Environment Court Act 2000. He explained that urban management policy and medical waste management guidelines are some of policies relevant to SWM. He mentioned that the total waste generation in Bangladesh (2014) is about 23,688 tons/day out of which Dhaka alone generates about 6000 ton per day. Out of the total waste generated, 70% is biodegradable amounting to 16,582 tons/day. He elaborated on the conventional system of SWM in Bangladesh that causes air, water and soil pollution. He then listed some environmentally-friendly programmes such as a CDM project converting organic waste into compost and co-composting, and implementation of 3R etc. He presented the conceptual design of the proposed Integrated Landfill & Resource Recovery Facility in Jessore Municipality. He further highlighted some future plans on improving solid waste management. He introduced various plastic recycling activities in Bangladesh. After that, he explained about the initiation of an e-waste and medical waste management system in the country. Finally, he listed issues and problems related to SWM. Details of his presentation are attached in Annex 3.

Status of SWM in Bhutan

Ms. Ugyen Tshomo, Waste Management Division, National Environment Commission Secretariat

Ms. Ugyen Tshomo started by explaining waste management policy in Bhutan. She stated that the Waste Prevention and Management Act 2009 and its Regulation 2012 and Amendment 2016 were prepared in Bhutan as milestones to initiate proper solid waste management activities in Bhutan. She highlighted the responsibility of various organizations in Bhutan to deal with the various types of waste generated. She added that Bhutan has developed a national integrated solid waste management strategy 2014 towards zero waste, by enhancing waste minimization to the fullest extent. She reported that total municipal waste generation in Bhutan is 30 tons per day, and that there is no landfill site system nor any recycling plants in Bhutan. However, the country has initiated household composting practices and a community composting system. She highlighted the institutional, financial, technical and information barriers facing Bhutan, adding that efforts are being exerted toward sustainable SWM. Details of the presentation are attached in Annex 3.

There was no representation from the Government of India to present the status of SWM in India.

Presentation of Country Reports 2

The session was chaired by Prof. Sadham Kumar Ghosh.

Status of SWM in Maldives

Mr. Amur Adam, Assistant Director, WMADO

Mr. Amur Adam started with a brief explanation on the demographic and geographic status of Maldives, followed by the institutional framework on and history of SWM in Maldives, including national waste management policy and plan, as well as the Waste Management Act. Some examples of implementation were introduced including regional SWM facilities, incineration facilities and sorting facilities as future programmes and projects, as well as an awareness raising/cleaning campaign initiated by WAMCO, a waste management company. He concluded his presentation with some challenges and issues on SWM faced by Maldives and efforts to overcome these challenges. Details of his presentation is attached in Annex 3.

Status of SWM in Nepal

Mr. Tulshi Narayan Maharjan, Mechanical Engineer and Ms. Anarudha Gywali, Chemist, MoFE

Mr. Tulshi Narayan Maharjan began his presentation with demographic and geographical highlights of Nepal and defined the nation's constitution as the fundamental right to live in a safe and healthy environment for every citizen. He briefly described the state of municipal SWM with total waste generation of 5650 tons per day. He then explained about waste trends and the composition of MSW in Nepal. He elaborated on various municipal waste treatment practices in Nepal such as composting, biogas plant, bio-briquette, recycling process, school environment programs, resource recovery activities etc. He also gave examples of several municipalities like Walling, Dhankuta and Shankrapur which recovered 80-90% of waste at source before final disposal. He highlighted the situation of landfill sites and dumping sites in Nepal. He also highlighted some recycling industries such as for lead acid batteries, as well as rubber factories, paper mills, steel industry and textile recycling. He explained that e-waste amounts to about 18000 tons / year in Kathmandu Valley alone, and stated that this is an alarming challenge for the country. He also presented a figure of disaster waste generated in Kathmandu Valley due to the massive earthquake in 2015. He presented a list of SWM related policies and regulations. In conclusion, he highlighted issues and challenges on SWM in Nepal. Details of his presentation are attached in Annex 3.



Status of SWM in Pakistan

Mr. Saqib Sultan Khawar, Statistical Officer, Ministry of Statistics, Islamabad, Pakistan

Mr. Saqib Sultan Khawar began with an overview of MSW in Pakistan. He showed that there was between 0.283 and 0.613 per capita of waste generated in urban areas in Pakistan, while waste collection efficiency is between 51% and 69%. He added that there was no proper treatment facilities but treatment practices were in progress. Recycling plants were improving. He indicated that Karachi generated the most waste in comparison to other cities. He described the garbage collection system and waste composition. Then he highlighted various environmental Acts related to SWM. He elaborated on the Prime Minister's Clean Green Pakistan Campaign and mentioned five pillars, one of which was SWM. He outlined various guidelines and rules related to SWM. Finally, he mentioned about the initiation of an anti-plastic campaign in Pakistan to reduce plastic waste. Details of his presentation are attached in Annex 3.

Status of SWM in Sri Lanka

Ms. Sarojinie Jayasekara, Director, Central Environmental Authority and Ms. Saranga Jayasundara, Programme Assitant, Ministry of Mahaweli Development & Environment, Sri Lanka.

Ms. Sarojinie Jayasekara started her presentation with a general scenario of SWM in Sri Lanka. She presented per capita waste generation in Sri Lanka as being 0.51kg/day with 40-50% waste collection efficiency, amounting to approximately 7500-8000 tons /day. She stated that open burning of plastic was very common in Sri Lanka, at about 232 tons /day. She then gave the waste composition and explained briefly on SWM being a priority in national policy. She elaborated on polythene regulation and 3R practices in Sri Lanka. She mentioned Dompe sanitary landfill site supported by KOICA. She highlighted the amounts of medical waste, e-waste and hazardous waste generation in the country. Finally, she gave a list of challenges on tackling SWM in Sri Lanka and highlighted the importance of developing a Master Plan on SWM. Details of her presentation are attached in Annex 3.



Group Work 1

Dr. Jagath Premakumara, CCET

Dr. Premakumara facilitated the first session of group work. He distributed three sheets of paper to all participants and asked them to note down and identify the priority goals for South Asian countries by 2030. There was vigorous discussion on this topic by all participants and a list of the important priority goals were put up on the board.



Important topics for priority goals were mentioned as follows:

- Complete and uniform baseline data on SWM in South Asian countries
- Norms of source segregation at source
- 60% resource recovery by 2030
- Promoting recycling industries
- Environmentally-sound management of hazardous waste
- 100% waste collection coverage
- Prohibition of open burning
- Regional model of landfill site
- End to open dumping
- Prohibition of marine littering
- Phasing out of plastic and research & development of alternatives
- National strategy for integrated solid waste management (Master Plan)
- Waste-specific regulations
- 3R concept in policy regulations
- Environmental Education (formal and informal)
- PPP principle
- Creation of sub-regional cooperation on SWM issues
- Incentive-driven waste management (minimum subsidy)
- Privatization of waste management activities
- Development of international cooperation on SWM

Day 2

Comparative Analysis of baseline data on waste management status in South Asia

Mr. Ran Yagasa, Policy Researcher, CCET

Mr. Yagasa presented comparative analysis on baseline data on waste management status in South Asia based on survey data provided by member countries. He explained that data generation is very important for overall waste management process that includes planning, implementing, evaluation and decision-making. He presented the waste generation status of 2016 based on a World Bank report and highlighted that per capita waste generation in



most countries is more than 0.5 kg/day which constitutes more than 50% of total waste as biodegradable waste. He explained the comparative analysis on legislative frameworks including national policies and regulations related to SWM, and gave a description of the state of waste management practices – waste segregation, collection, processing and disposal – in South Asian countries. He further analyzed the management of specific types of waste. He explained that most countries do not have hazardous waste management facilities. He stated that incineration of medical waste is the common treatment process in SA countries. He then outlined an e-waste management scenario and regulations in SA countries. He highlighted marine littering issues and management aspects but stated that most countries lack data and necessary regulations in this regard. Finally, he highlighted some priority issues on SWM of all member countries.

Group Work 2

Facilitator / Moderator: Dr. Jagath Premakumara , CCET

Dr. Premakumara, with the objective of consensus building and setting priority goals on SWM for SA countries based on the discussion in Group Work 1 the previous day, presented a paper on the group work session. He first highlighted how 17 goals making up the SDGs related to SWM programmes and activities. He emphasized that SWM is one of the major issues to meet all the SDGs. Then he illustrated how SWM activities contribute greenhouse gas emissions and have an impact on climate change. He further explained that sustainable waste management would contribute to reducing GHGs and SLCPs, and also contribute to parts of NDCs. He highlighted the Hanoi 3R Declaration and the global waste management goals. Following that, he asked all participants about

setting priority goals for South Asia and kept open the discussion based on discussion in the previous day's session. The following conclusions were made following vigorous discussion among all participants from South Asia :

Sustainable Waste Management in South Asia by 2030

	Indicators	Targets
Policy Directions		
(1) Transition from waste management to resource management (Circular–Economy/ Sound Material–Cycle Society)		
(2) Integrate 3R (4R or 5R) concept in waste management policies and regulations		
(3) Implementation of Polluters–Pay Principle		
(4) Economically viable waste management (incentives for minimum subsidy and maximum business or self–managed)		
Advancing privatization of waste management (Public/Private/Community partnership)		
3R related measures		
(1) Reduced waste generation		10%
(2) Increased resource recovery target		60% – 90%
(3) Promote recycling industry (?)		
(4) Source segregation at source		100%
Collection		
(1) Waste collection coverage (including the urban poor) or Having adequate, safe and affordable waste collection service for all		100%
Final Disposal		
(1) Environmentally–friendly waste disposal		100%
(2) Regional (cluster) model for landfill management		
(3) Elimination of open burning		
(4) Closure of open dumpsites		
(5) Disposal to landfill site should gradually reach less than 5% of waste collected.,		
(6) Associated with landfill charges to waste generator/disposer.(No free landfill. Introduce price for landfill)		

Group Work 3

Facilitator / Moderator: Mr. Kazunobu Onogawa, CCET

Based on Day 1 meeting and country presentations from South Asian Countries, Mr. Onogawa stated that the mayors of each municipality are key persons for SWM and their leadership plays an important role in SWM for each city. He emphasized that leadership and commitment are the most important things for materialization of proper solid waste management.

He added that the meeting should not just be within the eight member nations of South Asia but also information needed to be shared with the rest of the world. He stated that this workshop had invited various development partners such as JICA, USAID, ADB, EU, GIZ etc. and these organizations were also looking for good opportunities and were willing to extend their support to SA countries. Next he mentioned that there are many projects and programs in South East Asia from different development partners and he urged development partners to focus more on South Asia in relation to common issues and challenges on SWM.

He informed that he initiated the Asia Pacific 3R Regional Forum in 2009 which has been very successful. At first, participants included director general level representatives but now many Ministers are also participating in that forum which has given more encouragement and priority to the issues. He emphasized that the same, high level of commitment is essential in this workshop as well.

He then stated that it is very important to continue the efforts made by all members on SWM. The next meeting will probably be held soon by June or July. He was very interested to know about not only what efforts are being made by the eight member nations but also what is being carried out by the international community. He emphasized that all participant representatives from SA countries should focus particularly in their own SWM issues, and share information and outputs among all stakeholders to prioritize solving them together. He then opened the floor for discussion by participants asking them how they can promote the implementation or efforts for sustainable SWM in their country.

The perceptions of country representatives at the workshop were as follows:

Pakistan view

Mr. Saqib Sultan Khawar shared his view that every country has different geographical variation and different population dynamics. He said that Pakistan does not have regulatory mechanisms or data mechanisms at the moment. So every country has a different scenario. Every country should have a different sort of roadmap to be developed. A more meaningful consultative process would be needed and he wondered whether it is legislatively possible for CCET expert team to visit Pakistan

and other member countries. It is very difficult to provide the data required by SACEP because a system is not in place. He said his country could come up with rough figures but they would not be realistic.

Mr. Waleed Khattak further added that in 2005 Pakistan had prepared an environment policy and environment act. However, the country does not have a proper regulatory framework. That would be a major issue for federal government. For rural area, there should be localized waste management in comparison to urban areas. But one major issue is data management. In order to reduce data gaps, UNICEF, Climate Change Ministry and Central Bureau of Statistics are working together. Questionnaires were already on board. Data were already there but not in a meaningful way. He stated that in the next one or two months, things would be better and this would help the country to move in the right direction.

Sri Lanka view

Regarding the leadership and commitment suggestion from Mr. Onogowa, Sri Lankan representatives had a different opinion. **Dr. Premakumara** added that in Japan, mayors are in office for a longer duration but in other countries, mayors are changed frequently. When there was a good mayor, everything went well but once he/she changed, everything changed. He stated that if they depended upon political leadership, this system could not work in South Asia. He added that they needed more institutional and proper SWM systems in the country so that even if the mayor changes, the system would be improved gradually.

Dr. Anuruddha informed the workshop that JICA had supported Sri Lanka from 2003 and 2011 in SWM studies and established a National solid waste management technical support centre. Then after the establishment of the centre, they felt it was important to develop a basic infrastructure for SWM but local authorities could not manage to make the effort. However, under the Ministry of Environment, a project was launched in providing technical support and infrastructure development. He further added that it was more technical rather than political but it was one key success in Sri Lanka. He also shared the same information as Dr. Premakumara regarding municipalities and the whole system that would fall into failure or chaos after the mayor changed. He highlighted that it was a very important lesson to learn whether they accepted it or not. They are ready to share their knowledge and experience they have in gain in SWM wherever necessary.

Ms. Sarojinie Jayasekara, supporting Dr. Anuruddha and Dr. Premakumara, shared how their SWM system failed after a change in mayor. So, with this lesson learned, to overcome those issues, they prepared a plan in which the local authority would provide waste collection services and other services such as processing, sorting and final disposal, and they would prioritize the participation and investment of community-based organisations or private partners. They would better plan for

regional or collective landfill sites for more than one municipality where they could charge to overcome those issues.

Nepal View

Mr. Santosh Shrestha on behalf of the Ministry of Forests and Environment shared his view that there was geographical and social diversity in Nepal thus waste management system is very challenging in Nepal. One system which is applicable in Terai region would not be applicable in other regions. They have difficulties to construct landfill site in Terai due to floods while there were difficulties in constructing landfill site in high mountain regions. However, he added that at the local level, SWM system has been improving. Following changes to the federal system, many new municipalities began to merge many villages. If the government do not provide them with technical and financial support for formulation of action plans and establishment of infrastructure development, there would be many more challenges faced by these municipalities in the future.

The government should develop proper institutional mechanisms to deal with proper types of SWM such as MSW, health care waste and industrial hazardous waste. There should be proper institutional and financial mechanisms at central, provincial and local level. That was one gap on SWM in Nepal. He further added that a national strategy action plan should be prepared and activities should be started from the ground or local level. The data shows there was improvement on SWM on a community level but there would be limitations. They could not manage all types of waste themselves. Hazardous waste management is a serious issue in Nepal. If the government of Nepal would like to improve SWM system, 80 – 90% of solid waste has to be managed at source. The country should give high priority in focusing on source segregation rather than finding space for landfill sites. For example, based on waste composition, more than 50% of waste was still biodegradable. He explained further that if the country would focus on managing just this waste with simple techniques, they could solve 50% of waste management issues. So, he emphasized that the government of Nepal needs to prioritize resource recovery.

Ms. Reenu Thapaliya added further information to her colleagues that after the introduction of a federal structure in Nepal, the central government provide budgets to local governments. The local governments would be free to allocate the necessary budget to address SWM issues and it would generate a lot of opportunities and different new innovative ideas in regards to SWM.

Maldives view

Mr. Amur Adam has a different opinion in comparison to Sri Lanka. He said some case studies in Maldives in regards to lesson learned and experience on SWM might definitely end in frustration due to political decisions. But with different opinion, he said that it was not necessary to get frustrated with it and instead if they work on what they believe, then they would achieve their goal.

He further suggested lobbying these issues in a smart way and using new technology to tackle these issues. Why not express in a different way through internet or through community? Who would not like to live in healthy clean and beautiful city? Politicians were appointed to fulfil the needs of citizens. Why not encourage these citizens to address these issues? Politicians would not go against citizens' demands. He emphasized the use of available technology to deal with SWM issues in a smart way and as long as they fulfil people's needs, there would not be any hurdles, rather they would receive support from more people.

Bhutan view

Ms. Ugyen Tshomo shared her view saying that in Bhutan, Acts and Policies came first, and institutions dedicated to SWM at the national level came later. She shared further that they have identified 25 implementing agencies to deal with all types of waste but they had difficulty in implementation. There was an issue of budget constraint as well. However, Central government requested local government to prepare proper plans and budget allocation to implement those activities in addition to which some central level funds would be distributed.

She added that there was a lack of technical expertise in dealing with hazardous waste. They would need capacity building of technical experts to have proper databases and management of such waste. The new government was very supportive in term of dealing with SWM. The SWM issue was top priority in their 5-year plan. Their secretariat was working hard to take the necessary lead role.

Next, she mentioned that public awareness is very poor in Bhutan. They were trying to gain the participation of universities, communities and schools for awareness raising and education. University students were coming forward with proposals on SWM. Bhutan is also enhancing private sector participation as well. There are good numbers of private sector businesses in Bhutan. Green roads use plastic waste for road construction. However, the private sector is facing financial problems — technology is very expensive and their investment expectation is beyond the scope of the government budget.

Bangladesh view

Mr. Mohammad A Rahman shared his view that in Bangladesh, there were different rules regarding different types of waste management. He explained that the main problem in Bangladesh was lack of inter-sectorial organization coordination. They were working to overcome that problem. Their Prime Minister emphasized and suggested them to take more smart tools for waste management. Next problem, there is a lack of resources for SWM. Studies have been conducted by universities but these were not enough. Waste segregation would be most important in the country. He further expressed that there should be proper training and awareness raising on SWM at the community level for effective SWM.

Afghanistan view

Mr. Hamidullah Nikzad expressed the importance of SDG goals in relation to SWM. He elaborated further saying that there were strategic frameworks, policies and standards, laws and strategic plans for plastic management; however, there was not enough budget to implement any actions. Central government was trying to allocate enough budget for local governments to implement them successfully. Another problem in Afghanistan is lack of public awareness. Awareness level on SWM is very low. There should be integration of SWM in the education curriculum. The government supported implementing various SWM activities which are very important activities for them.

Closing Session

Dr. Abas Basir, Director General, South Asia Co-operative Environment Programme (SACEP) gave closing remarks to all participants.

He said that the main task of this workshop was to prepare a roadmap for proper SWM at the South Asian level. This workshop would support in setting common goals in the sub-region. He added that first, a common action plan for the region will be developed which will then followed by developing national action plans on SWM. There would be series of meetings in future such as the Governing Council meeting and Senior political level meeting to set a common agenda and common goals, and adopt suitable strategies and action plans to meet common targets at SA level.

He thanked all the participants for their engagement in the workshop and for their inputs in the two-day workshop held for preparation of Sub-regional roadmap for implementing global waste management goals. He hoped that all participants would have positive reaction from this workshop when they go back home. He added that the meeting was very fruitful and would be valuable input for the next meeting as well. He thanked the organizers and the host country Nepal as well as ICIMOD for their excellent hospitality and also thanked SACEP staff members for their wonderful preparation and management of the workshop.

Technical Field Visit

After the two day meeting was concluded, all participants visited Teku Transfer Station of Kathmandu Metropolitan City and also called in on the residence of Ms. Sanu Maya Maharjan to observe household waste management practice.



Photo : Teku Transfer Station



Photo : Ms. Nesha Adhikary, Environment Engineer explaining SWM process of Kathmandu Metropolitan city



Photo : Waste to Energy Plant of KMC which generated 14 KW of electricity every day from 3 tons of waste. According to KMC, It is currently under repair.



Photo : Participants at Ms. Sanu Maya Maharjan resident watching household SWM activities.

Annex 1: Programme Overview

Day 1: 25 March 2019

TIME	PROGRAMME
08.30 - 09:00	Registration of the participants
09.00 – 09:45	Inaugural Session
	<ul style="list-style-type: none"> • Welcome address – Dr. Abas Basir, Director General, South Asia Co-operative Environment Programme (SACEP) • Inaugural address – Mr. Kazunobu Onogawa, Director, IGES Centre Collaborating with UNEP on Environmental Technologies (CCET) • Remarks by Dr. David Molden, Director General, International Centre for Integrated Mountain Development (ICIMOD) • Address by the SAARC Secretariat – Mr. Sangye Chewang , Director, Environment Natural Disasters and Bio Technology • Address by the Guest of Honour – Honourable Shakti Bahadur Basnet, Minister, Ministry of Forests and Environment, Nepal
09:45 – 10:00	Orientation
	Introduction to the CCET and proposed South Asia programme activities – Dr. Jagath Premakumara, CCET
10:00 – 10:30	Photo Session and Coffee/Tea Break
10.30 -10.35	Self-introduction by the Participants
10:35– 11:00	Keynote Speech
	Waste management in South Asia: current situation and the way forward – Prof. Sadhan Kumar Ghosh, Professor & Former Head, Mechanical Engineering Department, Jadavpur University, Kolkata, India
11:00 – 12:30	Presentation of Country Reports 1
	Session Chair: Mr. Kazunobu Onogawa, Director, CCET

	<ul style="list-style-type: none"> • Afghanistan • Bangladesh • Bhutan • India <p>Discussions/ summary</p>
12:30 – 13:30	Lunch
13:30 – 15:00	Presentation of Country Reports 2
	<p>Session Chair: A representative from ICIMOD</p> <ul style="list-style-type: none"> • Maldives • Nepal • Pakistan • Sri Lanka <p>Discussions/ summary</p>
15:00 – 15:15	Coffee/Tea Break
15:15 – 17:00	Working Group 1
	<p>Facilitator/Moderator: (Dr. Jagath Premkumara, CCET)</p> <ul style="list-style-type: none"> • Discussions and identification of key challenges and priority action areas • Orientation – introduction to the global waste management goals and Hanoi 3R targets • Discussions and consensus building to achieve global targets in South Asia
18.00 – 21.00	Welcome Dinner (Dhokaima Café)

DAY 2: 26 March 2019

TIME	PROGRAMME
09:00 – 09:15	Orientation
	Presentation of comparative analysis of baseline data on waste management status in South Asia – Mr. Ran Yagasa, CCET
09:15 – 10:00	Working group 2
	Facilitator/Moderator: Dr. Anurudda Karunaratna, Senior lecturer, Department of Agricultural Engineering, University of Peradeniya, Sri Lanka <ul style="list-style-type: none">• Discussions and set baselines for priority areas/actions• Identify data gaps and collection opportunity
10:00 – 10:15	Coffee /Tea Break
10:15 – 12:00	Working group 3
	Facilitator/Moderator: (Mr. Kazunobu Onogawa, Director, CCET) <ul style="list-style-type: none">• Discussions and identification of actions and measures for priority areas and future vision for South Asia
12:00 – 12:30	Closing Session
	<ul style="list-style-type: none">• Summary of the meeting• Plan of future activities• Vote of Thanks – SACEP
12:30 – 14:00	Lunch Break
14:00 – 17:00	Technical Field Visit

Annex 2 : List of Participants

S.No.	Name	Designation	Organization
1	Hon. Mr. Shakti Bahadur Basnet	Minister	Ministry of Forests and Environment, Nepal
2.	Mr. Kazunobu Onogawa	Director	IGES Center Collaborating with UNEP on Environmental Technologies (CCET),Japan
3	Dr. Abas Basir	Director General	South Asia Cooperation Environment Programme (SACEP),Sri Lanka
4	Mr. Sangye Chewang	Director	Environment Natural Disasters and Bio Technology, SAARC,Nepal
5	Dr. David Molden	Director General	International Centre for Integrated Mountain Development (ICIMOD), Nepal
6	Mr. Hamidullah Nikzad	Environmental Planning Expert	National Environmental Protection Agency, Afghanistan
7	Mr. Malang Hemat	Monitoring and Inspection Industrial Waste Management Expert	National Environmental Protection Agency, Afghanistan
8	Mr. Mohammad Nasim Mia	Ward Councillor	Dhaka South City Corporation, Bangladesh
9	Mr. Mohammad Ataur Rahman	Senior Chemist	Department of Environment, Rajshahi Divisional Office, Bangladesh
10	Mr. Amru Adam Moosa	Assistant Director	Ministry of Environment and Energy, Republic of Maldives.
12	Ms. Aminath Mohamed	Assistant Project Officer	Environmental Protection Agency, Republic of Maldives
13	Mr. Shankar Prasad Poudel	Senior Divisional Chemist	Department of Environment, Nepal
14	Ms. Anuradha Gyanwali	Chemist	Ministry of Forests and Environment,Nepal
15	Mr. Buddhi Raj Ghimire	Senior Agriculture Economist	Department of Environment, Nepal

16	Mr. Tulsi Narayan Maharjan	Mechanical Engineer	Ministry of Forests and Environment Nepal
17	Mr. Santosh Shrestha	Waste Management Expert	MIA Project, Ministry of Forests and Environment, Nepal
18	Mr. Mukti Nath Khanal	Under Secretary	Ministry of Health and Population, Nepal
19	Ms. Reenu Thapaliya	Section Officer	Ministry of Federal Affairs and General Administration, Nepal
20	Dr. Suman Man Shrestha	Assistant Professor	Central Department of Environment, Tribhuvan University, Nepal
21	Ms. Sanu Maiya Maharjan	Officer	Kathmandu Metropolitan City, Nepal
22	Mr. Saqib Sultan Khawar	Statistical Officer	Ministry of Statistics, Islamabad, Pakistan
23	Mr. Waleed Khattak	Assistant Director	Ministry of Climate Change, Pakistan
24	Ms. H. P. Sarojinie Jayasekara	Director	Central Environmental Authority Sri Lanka
25	Ms. Saranga Jayasundara	Programme Assistant	Ministry of Mahaweli Development & Environment, Sri Lanka.
26	Prof. S. K. Ghosh	Professor	CQMS, Blue Earth W/S Mechanical Engineering Department, Jadavpur University, Kolkata, India
27	Dr. Anurudda K. Karunarathna	Senior Lecturer in Environmental Engineering	Department of Agricultural Engineering University of Peradeniya, Sri Lanka
28	Dr. D. G. Jagath Premakumara	Senior Researcher/ Programme Manager, Sustainable Consumption and Production	IGES Centre Collaborating with UNEP on Environmental Technologies (CCET) Institute for Global Environmental Strategies (IGES), Japan
29	Dr. Ran Yagasa	Policy Researcher/ Sustainable Consumption and Production	IGES Centre Collaborating with UNEP on Environmental Technologies (CCET) Institute for Global Environmental Strategies (IGES), Japan
30	Ms. Jacintha S. Tissera	Head of Chancery / Administrative Officer	South Asia Co-operative Environment Programme, Sri Lanka

31	Ms. Chamina Priyankari Alexander	Programme Officer	South Asia Co-operative Environment Programme, Sri Lanka
32	Ms. Bidhya Pokhrel	Senior Programme Officer	JICA, Nepal
33	Mr. Jay Pal Shrestha	Regional Environment Science Technology & Health Specialist	U S Embassy, Kathmandu, Nepal
34	Mr. Bhupesh Adhikary		ICIMOD, Nepal