1st Saving Lives Sustainably: Asia Forum 2018

Good Practices in Sustainable Production, Procurement and Disposal in the Health Sector
Assistant to the cold chain handler, Kusum keeps track of the vaccine temperatures using the temperature loggers.
India, 2018. Health workers providing Measles-Rubella vaccinations in hard-to-reach and remote areas make their way across a hanging bridge in Arunachal Pradesh State. Around the world, hundreds of millions of children and adults lack access to quality, affordable health services. Access to community-focused primary health care is key to keeping every child alive and thriving, to promoting health and well-being and to achieving universal health coverage.
Asia Forum 2018: Report and Compendium of Good Practices in Sustainable Production, Procurement and Disposal in the Health Sector

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Biologist Pedro Jeovah in the polymerase chain reaction (PCR) preparation room testing for FMD. Pan American Foot-and-Mouth Disease (FMD) Center PANAFTOSA-OPS/OMs. Rio de Janeiro, Brazil.
Executive Summary
Key Results: At A Glance

Global Participation of the Key Stakeholders in the Health Sector

Sustainability at the Event

Asia Forum 2018 was organized as a climate-friendly event: for people and environment. For more information about the sustainability aspects of the event, please see Delegate’s Guide to a Sustainable Forum.

Sustainable Building Management System
Asian Development Bank headquarters is a LEED certified gold building.

Electronic Registration System
Delegates registered electronically to participate in the forum, removing the need for printed material.

Eco-Friendly Stay
67 percent foreign participants stayed in environmentally-friendly hotels.

Green, Healthy Meals
There was no plastic wrapping of any food provided. Produced food and beverages was organic and seasonal, and there was no food waste - surplus edible food was made available to janitors, movers, technicians, etc.

“Zero Plastic” Waste
There was no plastic bottled water provided. Participants had at their disposal large dispensers for safe drinking water.

Renewable Energy
Energy used for the auditoriums’ gallery lights came from ADB’s solar panels.

Ground Floor Event
By choosing a ground floor event space, the need for lifts was removed altogether.

Going Paperless
3,600 pieces of A4 sized bond paper were saved by not printing the agendas, and participants accessed forum material through the event app.

No Printed Signages and Banners
2 pieces of 8x10ft tarp and 4 pieces of 100x195cm standard tarps were saved by not printing the signages and backdrop banners.

Conference Bags from Recycled Materials
Participants’ bags were made with katcha cloth.
Asia Forum 2018: Report and Compendium of Good Practices in Sustainable Production, Procurement and Disposal in the Health Sector

Key Environmental and Social Areas Covered

- Resource Efficiency
- Medical Products
- Procurement
- Waste Management
- Recycling
- Energy
- Gender Equality
- Human & Labour Rights
- Packaging
- Resource Efficiency
- Transportation
- Water
- Good Practices Key Highlights

- Sustainable Development Goals

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Moving Forward

- 95% of the participants said that their expectations were met or exceeded in learning and sharing experiences and good practices.
- 87% of the participants found it extremely useful to have an event app than to rely on printed materials.
- 98% of the participants expressed an interest to attend the future forum and the majority asked to organize it annually.
- Next forum to take place in Tanzania in July 2019.
- 90% of the participants rated each aspect of the forum as good or excellent and stated that it provided space for networking and partnership-building.
- 100% of the participants would recommend others to participate in the next forum and welcomed the diversity of participants in the Asia Forum 2018.
1st Saving Lives Sustainably: Asia Forum 2018

Supported by the Swedish International Development Cooperation Agency (SIDA), the 1st Saving Lives Sustainably: Asia Forum 2018 was organised by UNDP, as the Host Agency of the Informal Inter-agency Task Team on Sustainable Procurement in the Health Sector (SPHS), in collaboration with the Asian Development Bank (ADB), UN Environment, UNFPA, UNICEF, Health Care Without Harm (HCWH) and Business Call to Action (BCtA).

In line with the work of the SPHS, implementation of a four-year Sustainable Health in Procurement Project (SHiPP), developed by UNDP and HCWH, began in January 2018. SHiPP’s overall objective is to strengthen sustainable procurement in the UN system and in strategic countries to leverage purchasing power and drive policy and market demand for sustainable manufacturing and waste management in the health sector. The project aims to build capacity for sustainable production, supply and disposal of health care products; promote sustainable procurement practices in UN Agencies and project countries; and foster multi-stakeholder partnerships for achieving the SDGs.

To this end, the 1st Saving Lives Sustainably –

Asia Forum 2018 provided an invaluable opportunity for building capacity and galvanising action on sustainable production in the health sector, bringing together stakeholders from around the world to exchange knowledge, share experiences, identify good practices, and agree upon the way forward.

The Forum was held at the Asian Development Bank Headquarters in Manila, Philippines, from 13-15 June 2018, and featured various high-level speakers including: Mr. Ola Almgren, Executive Representative of the UN Secretary General, UN Resident Coordinator and Resident Representative of UNDP Philippines; Mr. Titon Mitra, UNDP Philippines Country Director; Mr. Woochong Um, Director General of Sustainable Development and Climate Change Department at the ADB; Dr. Gundo Aurel Weiler, WHO Representative in the Philippines; Mr. Harald Fries, Swedish Ambassador to the Philippines; Dr. Esperanza Cabral, Member of the Board of Directors, Health Care Without Harm Asia; Dr. Nestor F. Santiago, Jr., Assistant Secretary of Health of the Philippines.
The Forum was organised as a climate-smart event. The venue, the ADB Headquarters, is a gold-level LEED certified building, and is 100 percent powered by renewable energy. Participants went paper-free as the Forum agenda and all other relevant event material were made available through the event app. Delegate bags were made of ‘katcha’ cloth, which comes from used rice sacks. No bottled water was used at the event. The vast majority of event participants, organisers, speakers and moderators stayed at environmentally friendly hotels. The Forum successfully achieved zero waste.

The Forum focused on the theme of ‘Sustainable Production in the Health Sector: Fostering social, economic and environmental benefits’, and covered a range of topics on environmental and social sustainability in the production of health commodities and the delivery of health care services. The three-day event brought together over 200 government officials, eminent thinkers, policymakers, top technical experts, suppliers and manufacturers from over 40 countries.

Each day of the Forum focused on a particular sub-theme namely: water and energy, packaging and waste management, and human and labour rights and gender equality. The event featured a combination of interactive sessions including keynote speeches, panels, presentations, workshops and training sessions, and roundtable discussions and campfire sessions.

Suppliers, manufacturers, technical experts, academics and policymakers came together in Manila to learn, share and discuss the latest research and good practice in sustainable production in the health sector, and its links to climate change and the SDGs. The Forum opened the space for participants to share concrete examples of the benefits and savings resulting from sustainable practices, as well as develop a better understanding as to how suppliers and manufacturers can implement changes in production to be more cost effective, while at the same time reducing their environmental and social impacts.

**MAIN MESSAGES TO MOTIVATE ACTION**

**Links between the health sector and climate change.** Participants discussed the multiple links between climate change and the health sector. The detrimental impacts of changing climate patterns on health were highlighted by several speakers. First, changing climatic patterns worsen morbidity and mortality from extreme weather events, as well as from changing concentrations of ground-level ozone, particulate matter and aero-allergens. Second, it creates environmental conditions that result in alterations in the seasonality of climate-sensitive infectious diseases. Third, it impacts upon the burden of undernutrition, due to changes in water supply and agricultural output. And finally, mental health can be impacted by the consequences of climate change.

At the same time, participants recognised that the procurement of health commodities is one of the biggest sources of greenhouse gas emissions. Health care’s carbon footprint is significant, estimated to be around 6 billion metric tonnes, accounting for 5 percent of global greenhouse gas emissions. An estimated half of health care’s carbon footprint comes from its supply chain. Speakers emphasised that hospitals, health systems and health care supply chains are not only impacted by this crisis, but also contribute immensely to it. In light of these undeniable and inseparable links between climate change and health, speakers and participants alike recognised that the default position of health care service providers should always be to procure sustainably.

**The urgent need for innovative solutions.** Participants agreed that the health care sector needs to move quickly in adopting innovative solutions including: shifting to renewable energy in health facilities, reducing waste through fewer single-use products and improving waste management, recycling water, substituting chemicals of high concern, utilizing biodegradable packaging of medicines, and promoting green building design and construction. It was further recognised that there is an urgent need for the entire supply chain for health, clinical practices and facilities management to be re-evaluated to avoid the harmful impacts on the environment and people. Participants emphasised the need to identify and scale up good practices, to expedite the transition to sustainable production and procurement.

It was further emphasised that the health care community and health care facilities do not exist in a vacuum but are instead dependent on other stakeholders and the external environment. To this end, participants overwhelmingly agreed that collaboration across actors and sectors at all governance levels is required as stakeholders seek innovative solutions that contribute meaningfully to both sustainable production processes in the health sector, and the achievement of the SDGs.

**Minimising the carbon footprint of the health sector.** Speakers highlighted the need to decarbonise the health care supply chain by following the sustainable procurement roadmap, to align health care with the Paris Accord’s goal to halt the global average temperature increase. (Dr. Esperanza Cabral, HCWH)

Importantly, participants were reminded that sustainable universal health care is not just about en-
suring access to health care, but also about mini-
mising the carbon footprint of the health sector. (Mr. 
Woochong Um, ADB) Participants recognised the 
need to consider both the supply and demand sides. 
On the supply side, medical products and services 
could be produced with a reduced impact on the en-
vironment; at the same time, increasing demand for 
sustainable products influences supplier produc-
tion practices. (Mr. Titon Mitra, UNDP) Moving for-
ward, participants agreed that relevant partners and 
stakeholders need to leverage their combined pur-
chasing power to drive policy and market demand for 
sustainable manufacturing and waste management. 
Ultimately, the Forum highlighted that health care 
providers must consciously and proactively choose 
to procure and deliver health care sustainably.

Towards universal health coverage. Participants rec-
ognised that universal health coverage comes at a 
price. There is a monetary price to pay for the com-
modities and the services; at the same time, there is 
a price which the planet has to pay for the production 
of the commodities and the delivery of services.

According to WHO estimates, between now and 
2030, the world would need to invest an additional 
$58/person per year to ensure that all health-related 
SDGs are realised.2 This investment would prevent 
an estimated 100 billion premature deaths in this 
period. Speakers highlighted that the environment is 
taken as a secondary consideration, resulting in slow 
change on this front. (Mr. Titon Mitra, UNDP) While 
the monetary price tag of universal health coverage 
has been quantified, the environmental price tag of 
delivering this care is comprehensively un-costed. 
[Dr. Gundo Aurel Weiler, WHO]

Participants overwhelmingly agreed that sustainable 
production is the key to universal health coverage, 
not only to minimise its monetary cost, but also with 
regard to the price tag levied on the planet and the 
environment. Sustainable development then serves 
as the key to price the environmental cost of uni-
versal health care for the benefit of the people, the 
planet and the environment. (Dr. Gundo Aurel Wei-
er, WHO) While working towards UHC, participants 
noted that stakeholders must also work to minimise 
the overall carbon footprint of the activities in which 
they engage.

The need for collaboration across sectors and society. 
Speakers highlighted that sustainable UHC requires 
collaboration and communication across sectors, 
communities and societies. Health and non-health 
actors are required to work together, government 
oficials need to learn from the private sector and 
vice versa. Civil society organisations must also be 
actively involved. Participants agreed that sustain-
able universal health care requires collaboration 
and communication across levels of governance 
and sectors, and open dialogue between health care 
suppliers, manufacturers and users. (Dr. Esperanza 
Cabral, HCWH)

Participants recognised the need for key stakehold-
ers including policymakers, procurement author-
ties, UN Agencies, suppliers and manufacturers, 
as well as NGOs to pursue partnerships with health 
care facilities and institutions, in order to push for a 
common agenda on health care sustainability. Rele-
vant stakeholders are also required to leverage their 
combined purchasing power, in order to drive policy 
and market demand for sustainable production and 
trade management.

Role of good governance and leadership. Given the 
gravity and complexity of tackling issues in the 
health and environment sectors and efforts to insti-
tute reforms, participants overwhelmingly agreed on 
the integral role of good governance and leadership 
in moving towards sustainability and the achieve-
ment of the SDGs. Speakers highlighted that, in such 
a context where cooperation across industries and 
sectors is required, leadership requires guidance 
and management from more than one organisation. 
(Mr. Ola Almgren, UN) To this end, the SPHS, com-
prising 7 UN agencies and 3 multilateral health fi-
nancing institutions, was commended for its efforts 
in promoting sustainable production in the health 
sector and strengthening engagement with suppli-
ers and manufacturers. (Mr. Ola Almgren, UN). In 
addition, the SPHS Secretariat was recognised for 
its invaluable leadership role in advancing the agen-
da of sustainable production and procurement at the 
global level.

With respect to the role of governments, speak-
ers emphasised the duty of the state to protect its 
people, including in the delivery of health services 
and the procurement of health products and com-
modities. (Mr. Harald Fries, Swedish Embassy to the 
Philippines) On the demand side, governments and 
other users thus have an important role to play in 
strengthening sustainable health care. Through the 
creation and support of conducive policies and legal 
frameworks, governments can foster tremendous 
innovation for positive change. (Mr. Harald Fries, 
Swedish Embassy to the Philippines) Good govern-
ance – through performance governance, and sig-
nified by strengthened capacity, participatory lead-
ership and a people-centric service delivery network – 
was identified as the key to reducing the carbon 
footprint of the health sector. (Dr. Nestor F. Santiago, 
the Philippine Department of Health)

SDGs, health and sustainable production - Redefining 
the health sector’s leadership in the SDG era. Speakers 
identified four challenges which health sector lead-

Asia Forum 2018: Report and Compendium of Good Practices in 
Sustainable Production, Procurement and Disposal in the Health Sector
ers must overcome in order to work collaboratively in achieving sustainability, namely, inclusivity, politics, optimism, and the need for vision and perspective. With respect to inclusivity, it was noted that while production involves the heavy sectors of economics, finance and logistics, it is imperative to remember the people themselves, particularly those at the margins and those least served. The potential which lies in the empowerment of women was also noted. Stakeholders should recognise the power which politics can play in the health sector, understand the key players and what they offer in terms of the aims of health sector actors. While challenges and obstacles abound, it is imperative for health sector leaders to maintain optimism and always remember the successes and be grateful for them. Finally, leaders in the health sector must not be short sighted in their vision and approach; but rather adopt a balcony view, watch from a distance what is happening, appreciate it, and encourage moving the work forward. (Mr. Ramon San Pascual, HCWH)

Four key messages thus resonated with participants as leaders in the health sector:

> The need for a collective vision;
> The need to work towards achieving universal health care coverage;
> The need to work for our children; and
> The need to be passionate.

Participants overwhelmingly agreed that working towards sustainable production helps secure the future for both our planet and our people, ultimately ensuring that our children will be able to continue enjoying peace. The future of the youth, the type of world which they will inherit and their ability to live in peace and exercise their basic human rights, serve as a powerful motivator in advancing the sustainability agenda.

Quantifying costs was identified as a way in which to encourage the introduction of sustainability in the global health sector. This would include, for example, quantifying the economic costs of health, morbidity and mortality rates, and mortality rates in children. It was emphasised that once costs are quantified, countries will begin to realise the importance of investing in sustainable procurement, the environment and in climate change mitigation and adaption. (Dr. Eduardo P. Banzon, ADB)

In working towards the SDGs, participants agreed on the critical need for proactive leadership in the health sector. True collaboration between manufacturers, suppliers, procurers and consumers is critical. By extending the ‘business as usual’ model to incorporate the sustainability agenda, and by recognizing suppliers and manufacturers of health commodities as crucial partners in this process, leaders will move concretely towards the SDGs. It is imperative for leaders to thus identify the key players who will make sustainable production in the health sector agenda successful and propose concrete actions to achieve the set goals.

Overall, the Forum served as an important launchpad for advancing the sustainability in the health sector agenda. Bringing together experts, government officials, academics, policymakers, practitioners and youth from around the world, the 1st Saving Lives Sustainably – Asia Forum 2018, showcased the motivation and optimism of health sector stakeholders in continuing collaborative discussions and pushing for change at all levels to promote sustainable production, procurement and disposal in the global health sector.

1 Established in May 2012 in Copenhagen, Denmark, the SPHS brings together 7 UN agencies and 3 multilateral health financing institutions operating in the global health sector. The SPHS acts as a driver for transformational change towards more sustainable health systems and inclusive green economies. The SPHS Secretariat facilitates and coordinates the introduction of sustainable procurement and production practices in the global health sector. With an international network of over 3,700 leaders and technical experts, the SPHS contributes to 11 SDGs, through an inclusive approach in its engagement with suppliers and manufacturers of health commodities. (www.savinglivessustainably.org)


3 https://savinglivessustainably.org/news/1K777K.html

4 https://issuu.com/informal_int_task_team_sphs/docs/sphs_engagement_strategy
A view of the Middelgruden offshore wind farm. The wind farm was developed off the Danish coast in 2000 and consists of 20 turbines.
Industry is the second largest user of water globally, after agriculture. With a burgeoning global population, there is an increased need for production in the health sector, which in turn increases the amount of water used by industry. During the Asia Forum 2018, participants discussed the benefits and challenges of integrated management of water resources and wastewater disposal, and learned how to practically implement saving, efficiency and treatment solutions from successful cases of various health care manufacturers around the world.

The health sector is also a significant consumer of fossil fuels, arguably the most important global energy source. Participants had an opportunity to engage in discussions with top experts on the links between climate change and health; consumption and production needs in the health sector and its impacts on an already-warming climate; the shift to energy efficient, green technologies and renewable energy sources, such as solar energy in the health sector; as well as methodologies for measuring the carbon footprint.

Presentations, panel discussions, campfire sessions, training sessions and roundtable discussions also covered cross-cutting issues including the challenges of financing the shift to renewables; the need for stronger government legislation, leadership, regulations and institutional mechanisms to ensure the effective implementation of sustainable practices and policies; the need for greater transparency from the private sector; the importance of multi-stakeholder partnerships across sectors; the SDGs, health and climate, as well as online tools and technologies for stakeholders involved in sustainable production in the health sector.
1.1 OPENING REMARKS

Moderated by Ms. Hannah Moosa, the Asia Forum 2018 Facilitator UNDP, this opening high-level panel featured:

- Mr. Titon Mitra, UNDP Philippines Country Director
- Mr. Woochong Um, Director General, Sustainable Development and Climate Change Department, ADB
- Mr. Harald Fries, Swedish Ambassador to the Philippines
- Mr. Gundo Weiler, WHO Representative in the Philippines
- Dr. Esperanza Cabral, Member of the Board of Directors, Health Care Without Harm Asia
- Mr. Nestor Santiago, Department of Health, Government of Philippines

**Key Messages and Action Points**

> Stakeholders in the health sector must move quickly in adopting innovative solutions such as renewable energy in health facilities; work towards reducing waste through fewer single-use products, and improve waste management; recycle water; substitute chemicals of high concern; utilise biodegradable packaging of medicines; and promote green building design and construction.

> There is a need for a re-evaluation of the entire supply chain for health, clinical practices, and facilities management, to minimise the negative impacts of the health sector on the environment.

> Good practices must be identified and scaled up in order to make a rapid transition to sustainable procurement and production practices.

> Sustainable universal health care requires collaboration and communication within and across various sectors, and support from governments, societies and communities.

> There is an urgent need for open dialogue, strengthened engagement between health care providers, suppliers, manufacturers and consumers.

> Both supply and demand sides must be taken into consideration in efforts to strengthen sustainable health care.

> Stakeholders must push for a common agenda on health care sustainability, in line with the 2030 Agenda for Sustainable Development.

> Good governance and leadership are integral in any effort to ensure sustainable production and procurement policies are effectively implemented and maintained.

> The Forum offered an invaluable opportunity for suppliers, manufacturers, health care professionals, experts, academics, practitioners to come together, share experiences and lessons learned, and glean good practices from efforts around the world to move to sustainable procurement in the health sector.

Launched in 2013, the ONE ADB Initiative brings together stakeholders from across the bank to ensure there is a single point of contact, and to enable collaboration over complex issues. The initiative aims to cultivate a culture that consolidates and strengthens ADB’s delivery of knowledge and services.

The Bank increasingly promotes sustainability in the health sector, through for example, the recently concluded project in Cambodia, which combined measures that reduced air pollution and the extent of the health services including vaccination. The ADB is currently engaged in a project in Bangladesh, to promote the use of renewable energy in urban health centres while scaling up their resistance towards natural disasters. ADB’s long-term Strategy 2030, is currently being finalised and will guide the institution’s efforts in building an inclusive, resilient, safe and sustainable Asia.

Sweden is championing a reduced carbon footprint in the health sector, through e.g. ensuring waste minimizations, utilizing digital x-rays, CO₂-neutral hospitals, environmental training for all key health workers, auditing suppliers, moving to PVC-free hospitals, utilising energy efficient equipment and machines, geothermal heating and cooling, and solar cells, etc.

“The default position of health care service providers should always be to procure sustainably.” Mr. Titon Mitra, UNDP

1.2 SUSTAINABLE PRODUCTION IN THE HEALTH SECTOR AND THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

[Image: Speaker, Opening Plenary Panel, Asia Forum 2018]

[Image: Reducing the Carbon Footprint in the Health Sector]

[Image: Mr. Harald Fries, Swedish Ambassador in the Philippines]
Ensuring sustainable consumption starts with sustainable production patterns, particularly in the health sector that focuses on the well-being of the population. In the 2030 Agenda for Sustainable Development, there is a specific interest in the health industry which attracts the attention of the manufacturers of health commodities. This panel focussed on the concurrent highlights of sustainable production in the health sector with remarks to the 2030 Agenda’s points on the Sustainable Development.

Moderated by Mr. Eric Dupont, Chief, Procurement Services Branch, UNFPA [Denmark] the session was a panel discussion featuring:

> Mr. Josh Karlimer, International Director of Program and Strategy, Health Care Without Harm [United States]
> Mr. Angus Rennie, Senior Manager, Partnerships and UN Relations, United Nations Global Compact – on behalf of Ms. Lise Kingo, Executive Director, United Nations Global Compact [United States]
> Ms. Katarina Veem, Director, Stockholm International Water Institute [Sweden]

The discussion focussed on the latest practices in sustainable production in the health sector, and their links to the 2030 Agenda for Sustainable Development.

**Key Messages and Action Points**

> There is an urgent need for consensus building between manufacturers, suppliers and health care practitioners.
> Stakeholders need to adopt a vision-setting approach towards a carbon neutral, carbon negative, sustainable health care supply chain.
> Multi-level engagement with the private sector is essential in order to provide a holistic approach to the economic viability of the 2030 Agenda.
> Demand should be created for businesses to be more transparent and accountable. One approach could be to appeal to the competitive nature of business as a race to the top.
> Stakeholders must come to a consensus on enforcing regulations that would bring the health sector closer to achieving its targets.
> Strong institutions and regulations are essential, and should be stimulated by international collaboration between stakeholders who are working to address these issues.
> A conducive policy environment and technological disruption are key to attaining the SDGs.
> Water quality, availability etc. must become a more central part of the discussion as it affects sustainability, the environment, human rights, as well as multiple sectors, and is integral to the achievement of all SDGs.
> Linking pollution and water scarcity, and addressing human rights dimensions of health care are equally important.
> A set of criteria should be developed as soon as possible to help move towards a global initiative that affects economies of scale and advocates a shift to renewable energy use in the health sector.
> Both sustainable consumption and production cannot be separated from each other in the discussion of sustainable development; a broader perspective that encompasses both is needed to be able to appreciate sustainable development better.
> With regards to pharmaceutical companies, given their scale and impact, there is a need for greater engagement with them; additionally, greater transparency of pharmaceutical companies is required, particularly with respect to the active agents being used, the manner in which they are being disposed of, and quantitative measurements of their impact on the environment.
> Stakeholders need to simultaneously act both locally and globally, in order to address SDG 12.
> In order to avoid a silo approach to addressing water and energy challenges in the health sector, it is imperative for all stakeholders to come together and find a common solution.

**Examples of Good Practice**

In 2005, the Philippine Heart Centre started the substitution of mercury-based medical devices with economical and more accurate ones. Then Department of Health Secretary Enrique Duque subsequently issued an administrative order in 2008, to make it a national policy. This is an example of a national policy that created a demand which then shifted and impacted industry production, the positive lasting effects of which are still being felt today.

In some countries around the world, 100 percent renewable energy is being used in hospitals. This
also affects the supply chain. Simple actions such as transitioning to LED from other light sources which are less economical and environmentally friendly, can have a significant impact.

“USD 600 million of savings can be acquired from carbon reduction practices.” Mr. Josh Karliner, HCWH

In 2015, the UN Global Compact released the SDG Compass, in order to help navigate the 2030 Agenda and the SDGs, align with business goals and operations, and report on progress.

In 2017, the SDG Blueprint was released. The tool illustrates how the five leadership qualities of ambition, collaboration, accountability, consistency and intentionality, can be applied to a business strategy, business model, products, supply chain, partnerships and operations, in order to raise the bar and create impact at scale. The blueprint serves as a tool for any business that is ready to advance its principles approach to SDG action to become a leader. [http://blueprint.unglobalcompact.org/]

“Achieving sustainable development would require changes - changes in industrial processes, changes in the type and quantity of resources, changes in how waste is used and disposed, changes in the way we control emission. Change is the only certainty.” Mr. Eric Dupont, UNFPA

“The Asia Forum 2018 served as a critical first step in achieving the future goal of a health sector that is carbon neutral, resilient, uses less harmful chemicals, and aligned with the SDGs. This is our endgame.” Mr. Josh Karliner, HCWH

1.3 ENERGY EFFICIENCY TOWARDS CARBON NEUTRALITY

PRESENTATION BACKGROUND

Energy efficiency is more than a buzzword frequently used by manufacturers and scientists but, an easy way to improve the quality of life. This presentation focussed on the energy efficiency solutions, management and the green technology that enables saving on electricity costs as well as its smooth incorporation into daily operations of manufacturers’ facilities.

Moderated by Dr. Saleban Omar, Senior Regional Programme Advisor, HIV, Health and Development Team, UNDP Ethiopia, this panel discussion focussed on energy efficient solutions, management and green technology for the health sector. The panel featured:

> Mr. Virender Kumar Duggal, Principal Climate Change Specialist, ADB
> Mr. Manuel L. Soriano, Senior Technical Advisor, Energy, Infrastructure, Transport & Technology, UNDP Asia-Pacific Regional Centre (Thailand)

Key Messages and Action Points

> Energy efficiency is working in different parts of the world every day. Access to energy is more important to rural settings in developing countries. The big question however, is financing. While multilateral organisations may be equipped to install solar panels for example, the challenge lies in financing the health system in these contexts, in order to ensure that the energy efficient solutions are in fact servicing the millions of people.

> The Health Sector and entities in the sector should first try to monitor and reduce greenhouse gas emissions to transition to a more sustainable energy solution. Information campaigns on GHGs should be carried out in the health sector.

> Health sector actors must coordinate more effectively with the private sector in order to ensure their investment in efficient energy technologies. In order to incentivise the private sector to play a more proactive role, health sector stakeholders must reach out to the private sector, encourage them to understand and learn more about energy efficiency, emphasising critically the financial incentives of investing in energy efficient solutions. The private sector has an additional incentive, with respect to the financial benefits of scaling up investments in the health sector. Furthermore, the private sector has the capacity to take technologies in their initial states, scale them up and mainstream them. Throughout this process, it is essential that involved parties ensure that the technologies are financially sustainable (as per the three dimensions of sustainability).

> Identifying and prioritizing energy saving opportunities should be done by looking at the energy pyramid, which starts with energy conservation, followed by investing in energy efficiency, and finally renewable energy (usually the most expensive). What cannot be reduced should be offset.

> There is a need for technical support and capacity building to ensure a solid understand-
ing of how to use, maintain and repair new appliances.

> Most critically, action on financing is required, in order to implement energy efficient health systems in developing countries.

**Examples of Good Practices**

The ADB as an institution has achieved carbon neutrality by implementing various efforts over the past several years to reduce its consumption.

The institution achieved carbon neutrality in 2006. Efforts adopted to reduce emissions include:

> Adopting the 3Rs approach (Reduce, reuse, recycle).
> Designing a Gold Level LEED-Certified building, which include lighting, air-conditioning, water systems, promoting public transportation. The building was re-certified in 2017.
> Electricity: the ADB installed solar panels with the remaining energy supplied by a geothermal plant. The Bank’s Headquarters in Manila is now 100 percent powered by renewable energy and has achieved an 85 percent reduction in power-consumption related GHGs. The Philippines is one of the countries with the greatest use of geothermal power.
> Paper use: computers and printers are 100 percent Energy Star rated. There has been a paper reduction by over 50 percent while overall operations of the bank which have been increasing; have been using digital means.
> Water use: water is recycled, harvested, and structures to decrease consumption of potable water have been retrofitted.
> Field Offices also implement similar measures.
> GHG emissions of the Bank reduced from 20,527.68 in 2013 to 10,792.12 in 2017, an estimated 50 percent reduction in 3 years. A major source of GHGs is travelling – this has been reduced by video conferencing, taking the most efficient routes.

Statistics

Global health care spending is projected at an annual rate of 4.1 percent in 2017-2021 | Deloitte, 2018

Global Health care Outlook

Last year, 5 million dollars on climate finance that contributed to different kind of technologies of energy efficiency. (Mr. Virender Kumar Duggal, ADB)

**Link to presentation:** Energy efficiency towards carbon neutrality

1.4 WATER EFFICIENCY AND SAVINGS: HOW TO REDUCE WATER CONSUMPTION AT YOUR PRODUCTION FACILITY

**TRAINING BACKGROUND**

Water usage at industrial level requires excellent attention to consider the water used daily given the limited amount of usable fresh water reservoir available globally and locally. This provides a gateway to utilise many strategic interventions at the facility level to integrate methods of efficient water use and the associated benefit of financial savings to the facility. In this training solution, practical examples were presented to reduce water consumption at an industrial level which could apply to the vast majority of the facilities around the world.

In this session, trainer Ms. Katarina Veem, Director at SIWI and Speaker Mr. Nicolai Schaaf, SIWI, shared practical examples of how water consumption in industries could be reduced in facilities around the world.

**Key Messages and Action Points**

> Awareness of the importance of wastewater treatment should be raised, particularly for effluent streams with active pharmaceutical ingredients.
> Enforcement and regulations for better wastewater practices must be strengthened in the pharmaceutical sector.
> Proper and stricter implementation of accreditations and certifications in wastewater treatment is necessary in order to ensure that effluent water will not affect the environment.
> Workplaces should implement initiatives to ensure treated wastewater is safe in effluent streams.
> Large pharmaceutical companies must be encouraged to be more transparent, with respect to how water is being used, and wastewater disposed.

**Link to presentation:** Energy efficiency towards carbon neutrality

Last year, 5 million dollars on climate finance that contributed to different kind of technologies of energy efficiency. (Mr. Virender Kumar Duggal, ADB)
In 2010, the Stockholm International Water Institute (SIWI), and major Swedish textile and leather brands launched the Sweden Textile Water Initiative (STWI). The STWI develops sustainable business practices that foster improved water and wastewater management in supply chains. Originally working exclusively with Swedish brands, the initiative has since branched out to include the entire Nordic region with suppliers in more than 70 countries. From 2014 to 2018, STWI has been working with 277 suppliers in Bangladesh, China, Ethiopia, India and Turkey. The initiative provides training and implementation of methods for sustainable water use, technical support and data monitoring. Together with stricter policies and brand standards, STWI provides an important platform for factories to learn and perform good sustainability results and practices.

SIWI’s experiences with the textile industry through the STWI offer interesting lessons for health sector stakeholders engaging with companies on water and wastewater management challenges.

The textile industry was unaware of the significance of water consumption and wastewater generally. The dye-masters’ processes were not being questioned, even though they were often wasteful of water, particularly through minor errors in the dyeing process. Other challenges that emerged through engaging with the textile industry included: lack of capacity, poor internal management, lack of financial resources to invest in better practices, lack of reliable technology and availability of technical know-how. In its work with the textile industry, SIWI tried to address the lack of attention paid to waste consumption and wastewater management by implementing their programme cycle of continuous improvement, which involved a baseline assessment, a SIWI training workshop, on-site and offsite support, and a final evaluation visit. These efforts aimed at addressing the wasteful use of water in the textile industry, as well as increasing awareness and implementing stricter regulations with respect to wastewater treatment.

On the problems regarding antibiotics in effluent streams: “The problem isn’t when do antibiotics promote toxicity, but rather when do antibiotics trigger resistance, because this usually happens below detectable levels.” Mr. Nicolai Schaaf, SIWI

1.5 CARBON MANAGEMENT OF HEALTH PROGRAMMES, FACILITIES AND SUPPLY CHAINS: METHODOLOGIES, EXPERIENCE AND RECOMMENDATIONS

TRAINING BACKGROUND

This training session discussed carbon management of health programmes, facilities and supply chains. It considered carbon footprinting methodologies and their application at various scales from programme through site to product and services procurement. This training session aimed to inform about an evidence-based method for managed carbon reduction for manufacturers/suppliers as well as facility and programme operators.

In this session, trainers Ms. Wendy Rayner, National Sustainability Manager, NHS Scotland, and Dr. Kristian Steele, Associate, ARUP (UK), discussed carbon management of health programmes, facilities and supply chains. Participants further learned about carbon footprinting methodologies and their application at various scales from programme through site to product and services procurement.

Key Messages and Action Points

> There is an urgent need for a clear policy strategy on carbon management in health programmes to be developed.
> Greater awareness around carbon footprinting is essential; as there is not enough knowledge of the concept or capacity to develop carbon management practices.
> Single-use items that have an impact on the carbon footprint must be minimised.
> Stakeholders must provide greater support for technologies and innovations which have minimal environmental impact.
> It is essential that there is independent verification in the assessment of carbon footprinting. Stakeholders must be transparent about the data sources of the carbon footprint, be it first-hand or extrapolated data.
> A well-defined scope is needed in determining and comparing carbon footprint. There is a need for proper functional comparison of health care commodities and services depending on the context of production, mode of delivery, active ingredients, etc. The nature of environmental data which is required and must be asked for, needs standardization to make it more appealing, to ensure industries...
move in the right direction towards sustainable development. E.g. the standards for a pharmaceuticals company in Scotland applying for procurement should be the same as one in the Philippines, to ensure companies do not have to spend more to be more environmentally responsible across countries.

Examples of Good Practices

Between 2007 and 2015, NHS Scotland was able to reduce its carbon footprint by 11 percent, by austerity, while at the same time increasing inpatient admissions by 18 percent.

NHS Scotland uses a Procurement Assessment which identifies the different stages involved in the manufacturing of a product: life cycle mapping, sustainability, carbon footprint.

“Independent verification is very, very important in the assessment of carbon footprinting.” Ms. Wendy Rayner, NHS Scotland

“Change will only occur if all people across the value chain are informed and enabled to make the right choices.” Dr. Kristian Steele, ARUP

1.6 INTEGRATING STANDARDS FOR SUSTAINABILITY: ENVIRONMENTAL MANAGEMENT SYSTEM AND LEED

PRESENTATION BACKGROUND

This session provided detailed practical information on the Environmental Management and Leadership in Energy and Environmental Design (LEED) certification. The LEED is an environmental performance evaluating system that is designed to have a “consensus-based, market-driven rating system to accelerate the development and implementation of green building practices.”

The session, moderated by Ms. Amanda Lindstrom, Technical Officer with the UNDP Global Fund/Health Implementation Support Team (GF/HIST), featured a presentation by Mr. Erwin Casaclang, Facilities Planning and Management Officer at ADB. The session focussed on integrating international standards and strategies, notably the Environmental Management System (EMS) and Leadership in Energy and Environmental Design (LEED), into various institutions, to promote sustainability.

Key Messages and Action Points

> There is a need to harmonize and integrate between different standards such as EMS and LEED Certifications – to increase efficiency and effectiveness. This addresses the issue on the current “pluralism of standards” and how UN should also be putting this into consideration.

> The importance of green buildings and how the practices of EMS and LEED standardization can amplify the quality of human health and the environment simultaneously throughout the lifecycle of the building.

> EMS and LEED certifications are considered as an industry best practice and contribute towards an industry competitive advantage that is demonstrated by captured operational data.

> As part of EMS and LEED certifications, it is important to continuously monitor the areas of energy, water and waste management which contributes towards operational performance, resource efficiencies and cost savings.

The Asian Development Bank (ADB) Headquarters (HQ) has been at the forefront of promoting sustainability in the workplace, through its implementation of various interventions, such as proper segregation, utilising renewable energy sources to reduce consumption, waste and reducing its carbon footprint.

Policy commitments at ADB Headquarters:

> Pollution prevention, continual improvement, resource conservation, compliance to legal requirements, involvement through information dissemination, enhanced health and safety standards.

Infrastructure-related practices to improve implementation of standards:

> Alternative transportation, reuse of effluent water (rainwater) for landscaping. Treated water is classified as Class C, which can only be used for irrigated and grounds cleaning.

> Commitment to using 100 percent renewable energy: the ADB HQ has more than 2000 solar panels which provide 4 percent of the ener-
gy use; the rest is provided by a geothermal plant.

> The ADB HQ has a composting facility which can convert a portion of food waste to organic fertilizer.

Individual practices to improve the implementation of standards:

> Simple practices such as turning off lights, or closing the computer, when multiplied by 3000 or 5000, due to the occupancy, can lead to savings.
> Constant awareness, proper segregation, transitioning focus to waste diversification.
> Last year, the ADB launched “10 ways to sustainability”. It also conducts awareness campaigns.
> The ADB reduces direct emissions due to flights by promoting video-conferencing, encouraging staff to undertake a series of missions instead of constant back-and-forth and direct flights instead of indirect flights.
> The ADB recommends green hotels to visitors.

Policy-level challenges in implementing EMS standards and LEED certification standards

> Currently, EMS and LEED standards are being met only in offices, most notably, at ADB headquarters, in Manila, in India and Bangladesh.
> Other agencies are being monitored through an online system to determine their baseline consumption.

Effects on the operations of ADB:

> Significant reduction in paper consumption.
> Reductions in waste generation, electricity consumption and water consumption.
> Transitioning from waste reduction to waste diversification, e.g. not disposing in a landfill
> Total savings 2003-2017: $1,620,000 from energy, paper, water and waste savings.
> Greenhouse Gas Emissions - drastic reduction in indirect emissions (electricity and others).

Recommendation for behavioral change:

> The ADB implements “10 ways to sustainability” but recognizes that it is difficult to change behaviour. To this end, the ADB continues to develop awareness campaigns for staff and suppliers and recognises that providing opportunities to practice sustainability should be ongoing.

Statistics

“At the rate of our consumption of resources, it is estimated we use an equivalent of 1.5 earths to meet our daily needs. The earth’s carrying capacity means that it would need 18 months to regenerate what is used in 12 months.” [ADB]

“Half of the world’s population lives in cities, and by 2030 60 percent will live in cities...It will take 81 months to regenerate what was created in 3 months.” [ADB]

“The ADB examples on EMS and LEED certifications demonstrate best practices in sustainability and how they offer an industry competitive advantage, contributions towards resource efficiencies and an important incentive in the health sector for monitoring and evaluating energy, water and waste management.” Ms. Amanda Lindstrom, UNDP GF/HIST

“It is interesting to note the comparison of EMS and LEED certifications and the recommended strategy to harmonize them for an increased efficiency and effectiveness, considering they can independently provide some constraints. This touches base on the topic of the “pluralism of sustainability standards” and how this is a challenge that is not often discussed.” Ms. Amanda Lindstrom, UNDP GF/HIST

Link to presentation: ISO 14001 and International Standards

1.7 OPPORTUNITIES AND CHALLENGES IN INTRODUCING RENEWABLE ENERGY: MAKING YOUR PRODUCTION FACILITY SELF-SUFFICIENT

PRESENTATION BACKGROUND

Since the industrial revolution, factories have been among the world’s biggest consumers of energy due to their mass scale and high volume of processes centralised in one location. Renewable energy is recognised as the way to save the future of the planet as the number of various renewable energy generators, such as wind and solar power, continue to replace the traditional fossil-based energy sources, with a much lower cost of production. The technology and utility of renewable energy retain the significant potential to develop further as the cost of batteries falls, and innovations, such as more extensive energy storage gains more attention in the industry and by the society over the years. Due to the significant energy costs associated with production, among renewable energy sources, solar power is identified as the most optimal way to reduce operating costs. At the end of 2016, solar power became the cheapest energy source in the world, surpassing wind and its fossil fuel counterparts like natural gas. When it comes to commercial applications such as...
production plants, the most solar energy use occurs during the day, allowing large industrial plants to benefit from solar power without needing to buy a storage solution to cover night-time energy usage. The expert presentations focussed on the opportunities within the renewable energy generation and the challenges faced in this process, as well as offer different examples of introducing solar systems in your production facilities, and the expected benefits.

Panelists for this session included:
> Mr. Dae Kyeong Kim, Senior Energy Specialist, Asian Development Bank
> Dr. Saleban Omar, Senior Regional Programme Advisor, HIV, Health and Development Team, UNDP [Ethiopia]
> Mr. Ingo Walterscheid, CEO, Ecological Forum for Industry Transformation and Transaction (EcoFITT) [Denmark]
> Mr. Marlon Apanada, Country Representative, Allotrope Partners (the Philippines)

Key Messages and Action Points
> To overcome continuing challenges due to limitations of existing political frameworks; there is an urgent need for level-headed discussions among able contractors, investors and other actors regarding the risks and benefits of increasing renewable energy use in developing countries.
> Stakeholders must continue to work to generate demand, continuously emphasising the point of cheaper energy in the form of renewable energy.
> Evidence in favour of renewable energy must continuously be collected, compiled and disseminated.
> There is a need for the development of a solar for health sustainability framework.

Examples of Good Practices

One of the major complaints of the medical sector is the high cost of energy, primarily due to the unbundled nature of electricity bills in the Philippines. Payments are not solely for energy but also for distribution, transmission and government charges. The country is heavily dependent on imported fossil fuels – coal represents half of the supply. The cheapest form of electricity is onsite generation, as it bypasses the grid and added cost. It is challenging to structure a direct solar power sale due to the legal limitations in the country. It is only possible to structure items through an item lease, which does not carry with it the same benefits, and has many inherent risks. There are additional challenges due to performance and maintenance risk; solar energy may not be part of the core business facilities. The solution is then third-party financiers which can supply power at a cheaper grid rate.

A pilot case study, Solar PV Cagayan de oro City, on the Island of Mindanao, Philippines is underway. The deal includes zero down-payment for the hospital, a 20-year term, the solar equivalent is lower than grid retail rates, all costs are borne by the developer/investor, the investor return is more than 10 percent (250 hospitals have committed to being carbon neutral).

UNDP’s work on Solar for Health is a global programme launched over two years ago, operating in 22 countries, with an estimated USD500 million raised per year through procurements. Solar for Health focuses on installing solar PV systems in health clinics in the poorest and most remote regions of the world, helping to ensure no one is left behind. Solar for Health is currently installing solar panels in health facilities in: Zimbabwe, Zambia, Libya, Namibia, Sudan, South Sudan and will soon be expanding to Angola, Chad, Malawi and Viet Nam. There is a strong investment case in the project, notably through its positive impacts on health, development, the environment and return on investment. The initiative offers an increased access to health services, particularly in remote areas; and reduces energy costs for health facilities, thereby freeing up resources for other priorities. On the development front, it creates additional jobs, including jobs for women; improves local and national manufacturing capacities; and increases demand and uptake of solar technologies. The project generates 100 percent return on investment within 2-3.5 years. Investing in solar helps protect the local environment and reduces greenhouse gas emissions.
The problem is that there are currently very few collaborations between the energy and health sector, and this should be increased in the near future.” Mr. Dae Kyeong Kim, ADB

Statistics

ADB’s current goal is to expand clean energy investment to 3 billion to 2020 and 100 percent electricity access to 2025-2030 in South East Asia.

Link to presentations: Opportunities and challenges in introducing renewable energy

1.8 CLIMATE-SMART HEALTH CARE FINANCING

PRESENTATION BACKGROUND

As countries implement Universal Health Coverage and scale up financing and investment in health services to ensure that everyone has access to needed health services without fear of financial hardship, there is a need to ensure that the investments in health facilities that are consistent with climate change adaptation and mitigation best practices. Among the steps that can be implemented to nudge current health care financing mechanisms and practices would be leveraging climate change financing facilities to move current budgetary allocation and health insurance benefits to incentivize climate-smart health service delivery; arguing the business case for health care financing mechanisms and practices that are consistent with climate change mitigation and adaptation best practices. Among the steps that can be implemented to nudge current health care financing mechanisms and practices would be leveraging climate change financing facilities to move current budgetary allocation and health insurance benefits to incentivize climate-smart health service delivery; arguing the business case for financing climate-smart facilities and presenting climate-smart interventions that can be rapidly adapted, implemented and financed in the health sector.

This session focussed on the links between climate change and health, considering both the impacts of climate change on human health, and the current health sector’s systems and processes which produce pollution and carbon emissions, and contribute in turn to exacerbating the impacts of climate change.

Moderated by Dr. Eduardo P. Banzon, Principal Health Specialist at the Asian Development Bank, the session featured presentations from:

> Mr. Virender Sharma, Senior Urban Development Specialist, ADB
> Mr. Susumu Yoneoka, Senior Energy Specialist, ADB
> Dr. John Wong, Epimetrics (the Philippines)

Key Messages and Action Points

> In order to break the disease cycle in health care production, we need to reduce the carbon impact in the health care industry.
> Cross-sectoral collaboration is essential in this regard.
> It is not only important to build renewable energy, but also to make use of natural logistics to minimise costs.
> There is potential for decentralised energy provision with the rapid lowering of costs of renewable energy.
> It is imperative to look at climate, energy and health issues in systems, not just sectors.

Examples of Good Practices

ADB activities in the energy sector. ADB activities in the energy sector over the past 50 years include: a centralised power system in many countries through transmission lines to the user/demand side, leading to a rapid decrease in renewable energy costs; decentralised energy systems; smart grids, micro and mini grids; intermittent energy generation, requiring battery storage etc.

ADB’s Energy for All Initiative. The ADB’s Energy for All Initiative was established in 2008 with the following aims:

> Internal goal: Increase ADB’s investment in energy access projects and enterprises to scale up access to affordable, modern and clean energy among the region’s poor using renewable energy technologies.
> External goal: Energy for All Partnership to develop strategic partnerships and alliances with other stakeholders.
> 2015-2020: partnership extended, and goal increased to 200 million by 2020.

Philippines. Cobrador Island solar hybrid pilot project. The pilot project falls under the ‘energy for all’ programme. Prior to the project, people only received eight hours of electricity a day, but they now receive 24-hour energy access. As a result, people are able to start new businesses and health care more effectively. Electrical clinical instruments such as nebulisers and refrigerators for vaccines can now also be used. The project has demonstrated the viability of solar-diesel hybrid power plants with energy storage for remote island systems to supply homes, the health sector, schools and local industries.

By 2030, mini and micro grids could be more dominant for energy access improvement. The population able to gain access to energy will also increase as...
solar power could be used for this purpose. In the future, in order to further contribute to climate-smart health care, skills knowledge, approach and financial instruments, cross-sectoral and cross-departmental preparation are needed.

Another example of good practice is an ADB project on integrating a climate resilient response to urban health in Bangladesh. With climate change now moving towards resilience, disaster risk reduction and preparedness, this project aimed to make the health system more resilient, better able to absorb, cope and transform to withstand changes, notably through three steps: preliminary health facility climate risk screening, health centre vulnerability and risk assessment, and resilience building options [retrofitting existing centres and climate risk proofing new centres]

“In order to break the disease cycle in health care production, we have to reduce the carbon impact in the health care industry.” Dr. John Wong, Epimetrics

“Getting the evidence is one point, but getting it done in the government systems is another challenge.” Mr. Virender Sharma, ADB

Statistics

Pollution results in 9 million deaths each year (15 percent of deaths globally). More than 90 percent of these occur in LMICs. [The Lancet, the Global Alliance on Health and Pollution, and the Icahn School of Medicine at Mount Sinai]

While there is little evidence on the direct effects of climate change on health, experts are better able to make these estimates for pollution. Half of lower respiratory illness is attributed to pollution. While it causes just a small fraction of lung cancer cases, air pollution related diseases have a disproportionately high economic burden. An estimated 40 percent of health care costs in upper middle-income countries result from pollution. The health care industry contributes 4 percent to total carbon emissions in the UK, an 10 percent in the US. Over the last decade, overall, the UK has done more to control carbon emissions than the US, and has been able to save an estimated 2.4 billion from the health care industry. A similar study was conducted in Australia, where the total health care industry is worth an estimated 162 billion. It produces around 36,000 kilotons of CO₂ (7 percent of their total CO₂ emissions), 90 percent of which are from indirect emissions; and 2/3rds of this are from hospitals and pharmaceuticals. Asia needs US$6 billion annually by 2020 for climate financing (both mitigation and adaptation targets) [ADB]
sure and monitor APIs discharged in the wastewater due to the production, development and related activities involving pharmaceutical manufacturing. The session also presented the first Antimicrobial Resistance Benchmark, an independent assessment of pharmaceutical company action on Antimicrobial Resistance, including antimicrobial R&D, responsible production and appropriate access and stewardship.

Moderated by Dr. Rajeshwari Sinha, Deputy Programme Manager, Centre for Science and Environment in India, the panel featured presentations from:
> Dr. Dulce Calcada, Researcher, Access to Medicine Foundation (Netherlands)
> Mr. Nicolai Schaaf, Program Officer, Stockholm International Water Institute (Sweden)
> Ms. Suman Sharma, Director, Sustainable Antibiotics and Brand Communications, DSM Sinochem Pharmaceuticals (India)

**Key Messages and Action Points**

> Manufacturers of drugs should be responsible enough to have a take back-policy and encourage consumers to do the same. A take-back policy is where drug manufacturers will take back unused and expired medicines from their clients and customers to properly dispose of them, likely through incineration.

> There should be strict enforcement of standards, accreditations and certifications to ensure companies comply, and reduce their wastewaters. Multilateral organisations such as the WHO, should leverage its connections with policymakers to push for stricter enforcements of such standards at the global level.

> Large pharmaceutical companies should be encouraged to share their discharge limits and follow strict standards on effluent streams.

> Moving forward, it is important for procurers to incorporate environmental concerns in their planning, as well as enforce stringent policies for pharmaceutical companies.

**Examples of Good Practice**

Access to Medicine Foundation (Netherlands), has developed an Antimicrobial Resistance Benchmark 2018, which has been used to demonstrate the extent of compliance of pharmaceutical companies. Through this initiative, however, the Foundation recognised the challenges in penetrating the pharmaceutical sector on compliance issues, particularly given that effluent compositions were not being disclosed. Of the 100 pharmaceutical companies which signed up for the antimicrobial resistance benchmark 2018, only 13 companies continued and signed the industry roadmap to reduce the environmental impact from the production of antibiotics. This low level of compliance and cooperation on the part of the pharmaceuticals sector must be addressed in order to better the quality of wastewater treatment in the health sector.

**Removing antimicrobial waste from wastewater.** Recycle streams can be used to bring back unreacted ingredients in the water to earlier processes. Sensors can also be used to check the quality of effluent streams. Bioprocesses such as enzymes and fermentation can be used to reduce the antibiotic content in the water.

**Good practices for treating AMR in wastewater.** Arguably the best method to do so is through incineration. Antibiotics should never be flushed down the sewer system as wastewater plants that treat these systems have no capacity to remove antibiotics from the water. Proper procurement planning is required to reduce medical waste.

Mr. Nicolai Schaaf, SIWI on the stakeholders involved in wastewater management ... “Water efficiency should be a shared responsibility along its lifecycle.”

**Link to presentations:** Effective management of APIs

**1.10.1 PLANETARY BOUNDARIES AND MEETING THE PARIS AGREEMENT:**

**CARBON REDUCTION AMBITION IN THE GLOBAL HEALTH SECTOR**
The Conversation Hour on Planetary Boundaries and Carbon Reductions in the Global Health Sector was moderated by Dr. Kristian Steele, Associate, ARUP (United Kingdom)

Key Messages and Action Points

> Sustainable health care can be implemented by integrating policies geared towards sustainability in the health sector, and by raising awareness about the extent of damage to the planet caused by activities in the health sector.

> There is an urgent need for education and training in environmental health, climate change and its impacts for all.

> As the need for innovative methods and policies to combat climate change increases, there is a greater need for new technologies and breakthroughs from different fields of learning and research.

> Stakeholders must identify specific pathways in the global health care supply chain that point to increased carbon emissions, in order to enable health sector actors to focus efforts in decarbonising through addressing these pathways.

> There is a great need for behavioural and cultural change in the health sector, starting with preliminary training of potential medical professionals, to the continuous development of mid-career professionals, and advanced training of policy makers as well as those in seats of power; this in turn would help to spark the creation of health care policies designed to contribute towards the achievement of the SDGs.

> The lack of a working global standard of sustainability for the health sector is a significant factor driving the resistance of most hospitals in adopting alternatives geared towards lowering carbon emissions for hospital waste disposal.

> The international community needs to urgently develop a global standard of sustainability for the health sector.

Examples of Good Practice

There are many existing programmes in the Philippines focussed on educating and inspiring the youth to save the planet. One such programme is the Young Environmental Forum, which aims to have as much of the population informed about the current state of climatic change, by demystifying scientific jargon on weather and environmental systems. While such initiatives are having the intended impact on the youth thus far, it is much more difficult to reach out to the older generations, who are actively involved in decision making and positions of power.

> “Health sector can never achieve what it is trying to achieve by operating alone. The failures of certain sectors will affect the other sectors as well.” Dr. Rosemary Kumwenda, UNDP

> “We cannot advocate change in behavior if there is no change in mindset.” Mr. Ludwig Federigan, Young Environmental Forum

1.10.2 MONITORING OF HEALTH COMMODITIES WITH GREAT CLIMATE IMPACT

The conversation hour was moderated by Ms. Kristina De Geer, an Environmental Strategist in Region Skåne, Sweden.

Over a ten-year period (2001-2011), Region Skåne’s total carbon footprint decreased markedly. In 2011, the largest climate impact was found in the area of consumables, accounting for 40 percent of total CO₂ emissions. Products such as surgical gloves, plastic bags, paper reels, injection needles were found to have some of the highest carbon footprints. These products were the focus of research on solutions to mitigate the climate impacts from consumables. Between 2015-2016, the carbon footprint in most hospitals and administrations in Region Skåne decreased. Skåne University Hospital was able to reduce its CO₂ emissions due to efforts to change their plastic bags.

Region Skåne has introduced a new online tool to calculate CO₂ emissions. It serves as a financial tool to monitor how costs change on different products available in the market, and can also raise awareness about the climate impacts from consumables in the health care sector. Dialogue with suppliers is underway to discuss investment in the tool. Region Skåne is also working towards fossil-fuel free energy usage by 2020.
1.10.3 ACHIEVING SDGs THROUGH MULTI-STAKEHOLDER PARTNER- SHIPS IN THE HEALTH SECTOR

The Conversation Hour was moderated by Mr. Angus Rennie, Senior Manager of Partnerships and UN Relations at the UN Global Compact. Discussions focussed on the steps various actors should take in working towards the SDGs, challenges that exist, and the need for collaboration to achieve not just the health goals but all SDGs.

Key Messages and Action Points:
>
> **Partnerships are critical, and identifying the multiple stakeholders and bringing them together helps ensure that no SDG gets left behind.**
>
> **Private sector actors need to recognise their role in contributing towards the achievement of the SDGs and shift towards more sustainable operations; creating accountability loops which companies can use to monitor the sustainability of their operations would go a long way in this regard.**
>
> **Health sector actors must collaboratively develop strong arguments to present to other sectors, in order for them to understand the critical role each sector plays in ensuring a multi-sectoral approach to public health.**
>
> **Health sector actors must identify the enablers of SDG implementation, develop a plan, present it to government entities, and push for them to take ownership and create suitable programmes around these recommendations.**
>
> **Health care professionals must inform industry and other partners about the direction in which the entity is moving in terms of sustainability, in order to give the relevant actors opportunities to adapt to the changing dynamics.**
>
> **Feedback loops should be encouraged, where countries voluntarily provide national reviews on what actions have been undertaken towards the achievement of the SDGs.**

**SDGs are universal; we cannot focus on one at the expense of the others.** Mr. Angus Rennie, UNGC

**Everyone should feel that they’ve got a stake in the SDGs; the SDGs are not only the UN’s agenda but everyone’s.** Mr. Angus Rennie, UNGC

1.10.4 ONLINE ENGAGEMENT PLATFORM ON SUSTAINABLE PROCUREMENT

The platform connects people from around the world, helping actors to find projects, trainings, programmes on sustainable procurement in the health sector. To date, the savinglivesustainably platform has over 4,000 individual members, who are able to connect and share their experiences, good practices and lessons learned with stakeholders around the world. Participants can look forward to exciting new developments and features added to the website.

“Communication is vital...in a company, within industries, and across multiple sectors.” Ms. Mirjana Milic, UNDP

1.10.5 SOCIAL AND ENVIRONMENTAL IMPACT MANAGEMENT

The conversation hour was moderated by Ms. Nazila Vali, Knowledge and Partnerships Lead, the Business Call to Action, UNDP Istanbul Regional Hub.

Key Messages and Action Points:
>
> **Businesses must work with the mindset of catering to the needs of society and the demands of the customer, while at the same time taking...**
Example of good practice

The Business Call to Action worked with an Indian-based organization Mahindra. The primary goal of the organization is to provide rural housing and allocate financing to rural-based individuals. In the process, the organization realized that when it provided equal job opportunities to men and particularly women, it increased the repayment rate of the loan they acquired within households. The organization in turn benefited and generated profit, which makes its brand more reputable and credible. At the same time, women were empowered and felt valued in their societies, as their opinion mattered; they were consulted during the loan process and were respected for being involved in financial matters. This in turn had an effect on the organization, which recognised the positive impacts of adopting an impact management framework.

Based on a one-on-one partnership between the Business Call to Action project and the twenty businesses they collaborated with, brainstormed and surveyed, it was clearly evident that the main benefit of implementing an impact management framework in a company is that the businesses are able to completely understand the needs of the customers in their respective industry without compromising their resources. With respect to the common challenges faced, the main obstacle was in creating a long-term vision that the businesses would follow. In addition, measuring the social and environmental impact of their own businesses is time consuming - it could possibly take years before businesses are fully able to measure their impact. Furthermore, the businesses had difficulty with the constant monitoring process as there was no assurance that the stakeholders involved in the process were taking note of the development and application of the framework within their own company.

1.10.6 ENVIRONMENTAL QUESTIONNAIRE FOR UNDP SUPPLIERS AND MANUFACTURERS OF HEALTHCARE PRODUCTS

The session was moderated by Ms. Lorea Coronado-Garcia, Sustainable Supply Chain Specialist, UNDP. Ms. Coronado-Garcia presented the UNDP Environmental Questionnaire and emphasized the importance of the document as a critical milestone for the development of the Sustainable Procurement Index Health. UNDP will focus on the development of the Index in 2018-2019 and invited all interested stakeholders to provide technical inputs for the development of the Index components and scoring mechanism. The Index and Environmental Questionnaire will serve as the foundation for the development of globally adaptable sustainable procurement criteria in the health sector. Through the collection of relevant data on suppliers’ sustainability practices, it will be possible to not only define a baseline, but also define a set of realistic sustainability criteria to be included in upcoming tenders. Procurement practitioners were invited to use the tool during the selection of suppliers and manufacturers. At the same time, the database presents a powerful tool to identify good practices as well as areas where support and capacity building for suppliers and manufacturers must be provided to reach the UNDP goal: Enabling the transition to a more green and inclusive economies.

Key Messages and Action Point

> The Environmental Questionnaire is fully aligned with the United Nations Supplier Code of Conduct.
> The reason behind prioritizing multiple-choice questions over open-ended questions in the Environmental Questionnaire was to reduce as much as possible the subjectivity during the assessment of the Questionnaire.
> UNDP invited technical experts to participate in the consultation and review process of further development of the Environmental Questionnaire and Sustainable Procurement Index Health. The main goal of the global consultation is to improve the overall relevance of the Questionnaire and globally adaptable sustainable procurement criteria in the health sector.
> Conversation session participants recognized the Questionnaire as a fantastic initiative that should be promoted actively across the public health sector and other industries.
1.10.7 GUIDING PHARMACEUTICAL COMPANIES TO STRENGTHEN WASTE-WATER MANAGEMENT: THE ANTIMICROBIAL RESISTANCE BENCHMARK 2018

The conversation hour was moderated by Dr. Damião de Felice, PhD, Director of Strategy, Access to Medicine Foundation, and Ms. Dulce Calcada, Researcher, Access to Medicine Foundation [Netherlands]. Access to Medicine Foundation focuses on ranking companies based on their performance, environmental impact, and methodologies, and serves as a guide for companies and governments to identify which pharmaceutical companies are operating effectively and responsibly. The foundation has created an index which identifies and ranks companies based on their compliance, research and development, patents, licences, product donation, commitment, transparencies, or innovation; while the benchmark overlaps with the indicators and measures research and development antibiotics, and investment in these areas. Through reports in the Antimicrobial Resistance Benchmark 2018, the Foundation has established positive competition among companies, pushing them to adopt more responsible and sustainable practices and methods of production.

Key Messages and Action Points

> Environmental criteria should be added as part of the assessment of pharmaceutical companies in order to ensure they are producing and disposing of waste more responsibly and sustainably.

> There is a need to formulate regulatory standards, such as quality assessment, and effectively implement these standards, in order to ensure pharmaceutical companies are responsible towards customers and societies they supply.

> In order for private sector actors to develop their own sustainability guidelines, it is important these actors develop strategies, through collaborative engagement with their leaders and other experts, in order to effect change across their companies.

> There is an urgent need for greater transparency amongst private sector actors, as not all companies publicly provide information on their websites; thereby hindering the collection of information for the index and the benchmark; a thorough report of these companies will enable more comprehensive databases to be developed with all the relevant information for public review.

1.10.8 BUILDING NEW ALLIANCES FOR SUSTAINABLE ANTIBIOTIC SUPPLY CHAINS

The conversation hour was moderated by Mr. Nicolai Schaaf of the Stockholm International Water Institute [Sweden] and it focussed on issues related to water contamination.

Key Messages and Action Points

> Tools are needed to measure effluents from the pharmaceuticals industry, in order to minimise the environmental impacts.

> There is a need for greater engagement with companies and organizations sharing similar principles and advocating the same ideals.

> Greater support from government agencies must be sought.

Example of Good Practice

Working on water, development and governance, amongst other issues, SIWI provides platforms for dialogue, where Swedish stakeholders can come together and share experiences of projects and lessons learned. SIWI also collaborates with UNDP to strengthen ties with manufacturers, through trust building, facilitation of dialogue, knowledge sharing, developing new methodology for creating a sustainable antibiotic and increasing procurement leverage. While positive steps are being taken, various challenges exist including, pollution produced by industries, efficiency in using water and chemical consumption, and the quality of the antibiotic. Barriers hindering the achievement of goals with respect to sustainable antibiotic supply chains include: increasing the resource efficiency, reducing emissions, and reputational advantage.

1.10.9 SUSTAINABLE ANTIBIOTICS – MINIMISING ENVIRONMENTAL IMPACT FOR PRODUCTS THAT SAVE
Energy issues in Viet Nam stem largely from government actions and have adverse effects on health care delivery across the country. Power outages in lower level health care providers are very common. While this is not a significant problem in higher level health care facilities, energy consumption amongst these providers is extremely high. The government exercises complete control over electricity in the country. With rampant corruption across the country, electricity prices are rapidly increasing and policies and decision-making among officials are not always the best to help address the situation. In addition, the health sector is met with other challenges as higher-level health care providers follow policies on financial autonomy. Without the data to support viability and assurance of returns on investment, initiatives for subsidizations or even support from the governments should be aware of the concentration of antibiotics which pharmaceutical companies are releasing into water streams.

The DSM Sinochem Pharmaceutical Company offers ‘Sustainability through Excellence in Manufacturing’ also known as STEM. This program aims to train and equip interested clients as well as other pharmaceutical companies with the knowledge to venture into manufacturing products sustainably without sacrificing the quality. Topics covered in the training include: proper discharge of waste, limiting levels of anti-microbials in effluents, and ensuring minimal impacts of antibiotics on the environment.

The Government of India has developed a new National Action Plan, which aims to standardise the laboratories in the concentrations of antibiotics by the year 2020. This is to avoid and battle the progressive growth of anti-microbial resistance currently in order to ensure a reduction in AMR cases in the future.

A qualitative study conducted by DSM Sinochem Pharmaceuticals revealed that samples from surface water have a greater antibiotic concentration compared to the antibiotic concentration administered to patients undergoing treatment for infection.

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**Key Messages and Action Points**

> It is critical that stakeholders engage with pharma companies and push them to manufacture sustainably; existing pharmaceutical companies already on this track, can serve as positive examples.

> Out of 100 promising pharmaceutical companies, only 13 have signed the AMR alliance group, which would commit their companies to responsible and clean water discharge, and ensure the sector’s responsibility towards people, planet and the environment.

> Governments should be aware of the concentration of antibiotics which pharmaceutical companies are releasing into water streams.

**Example of Good Practice**

**1.10.10 SOLAR FOR HEALTH: VIET NAM COUNTRY EXPERIENCE**

The conversation hour was moderated by Ms. Tran Thi Thu Huong, of UNDP Viet Nam, and focussed on the Solar for Health Initiative.

**Key Messages and Action Points**

> While solar energy is a fairly new energy source in the field of health care, it is not impossible, and it has been done successfully in Zambia, Zimbabwe, Sudan and India.

> Viet Nam has yet to implement initiatives for Solar for Health; it is hoped that this project spearheaded by UNDP, will set the stage for its entry into the market of health care delivery.

> Solar for Health has its own set of advantages and challenges, and these may differ depending on the particular context and setting. In-depth studies are therefore essential in planning for this type of intervention.

> Government support plays a significant role in the implementation and sustainability of Solar for Health initiatives.

**Example of Good Practice**

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government are hard to come by. As a result, government interventions are seen as important motivators for the shift to renewable energy.

The two primary sources of energy in Viet Nam are hydroelectric power and coal. Given the well-established system in place for the provision of these two energy sources, prices for hydroelectric and coal can be made more affordable. In contrast, solar energy remains fairly expensive in the country and has thus remained less explored. Furthermore, solar energy as a source of energy for health care institutions has not been explored, and this is also greatly attributable to certain policies.

UNDP Viet Nam has proposed an introductory project to test the viability of using renewable energy, particularly solar energy, to address the energy situation in hospitals. Talks of partnerships and preparations are still underway, and the project is set to be pilot tested in two hospitals (two provinces). It is hoped that successful implementation of the project will provide evidence of the feasibility of using solar energy, which in turn will gain government attention and support to work towards scaling up the system to more cities and ultimately a country-wide ‘Solar for Health’ initiative.

To date, UNDP has the support of the Ministry of Health and the Ministry of Planning and Investment. The project is being funded by UNDP, which is currently looking for grants from various sources. While the government has been unable to provide financial support thus far, it is starting to implement renewable energy policies, so investments may soon follow. Hospitals are also not able to contribute, as hospital managers are weary of corruption. Thus far, project organisers still do not have an estimate of the cost of the project, and whether they will require or loan or accumulate sufficient funds for the project.

Following the pilot tests, UNDP hopes to be able to collect sufficient data to prompt government policies, working towards scaling up ‘Solar for Health’ to more cities, ultimately improving health care delivery. Expected lessons from the implementation of the project: lessons learned from investments, policies that may be enacted, capacity building for scaling up Solar for Health, support for procurement, government investment and hospital managers themselves.

“I am happy that you are taking the precaution now, because I come from Zambia where we are one of the pilot countries for Solar for Health. And right now, we see that we have installed so many solar panels, so many health care facilities, but what is missing is the policy component.” Mr. Ian Milimo, UNDP

1.10.11 HOW CAN YOU PROMOTE THE USE OF RENEWABLE ENERGY SOURCES?

The conversation hour was moderated by Ms. Inga Podoroghin, a Programme Specialist with UNDP Moldova.

Key Messages and Action Points

> Health care professionals must join the campaign of promoting the use of renewable energy sources for various reasons: It is cheaper than non-renewable resources; It is environmentally friendly; Since it comes from the natural environment, it is not vulnerable to disruption; It can help generate jobs, as it will be mechanically operated when converting energy to electricity; Governments have an important role to play in sustaining the use of renewable energy sources.

> Focussing on renewable energies such as Biomass for use in the general public is critical to help lesson energy dependence on non-renewable resources.

> Biomass energy is more accessible in agricultural-dependent countries such as Moldova.

> Barriers in shifting from non-renewable to renewable energy sources include competitive between private and public-private partnerships, large scale subsidies and financing methods.

> There are multiple renewable energy options around the world, and it is important for stakeholders to remember, that what will work in one part of the world, might not work in another, given the varying climates, physical settings, topography etc.

> In order to shift to renewable energies, a functioning market must be in place, which will advance the production of renewable resources.

Example of good practice

**UNDP MOLDOVA**

**Converting Agricultural Waste into Biomass Energy**

Ms. Inga Podoroghin, Programme Specialist with UNDP Moldova

rina.podoroghin@undp.org

Moldova

UNDP Moldova has been implementing a biomass project, turning agricultural waste into a source of energy (biomass) on a large scale. This is a significant innovation in the global energy industry. EU-funding of USD23 million between 2011-2018, provided the incentive for switching to renewable energy in Moldova. This project will be sustained by
government-owned initiatives moving forward. The success of the programme will depend on the continued support of the government and the initiative taken to ensure active public participation and general use of the renewable energy source.

Moldova’s model for promoting the use of renewable energy:

> Generating demand (invest and subsidise): it needs to start at the household level, and then will move up to municipalities and cities, thereby creating demand across the region and country.

> Create offer to the localities: stakeholders must meet with the communities, provide information and raise awareness about the benefits of moving to renewable energies.

> Develop capacities and educate people about the programme and its benefits: individuals need to understand how to use renewable energy, to ensure the projects are managed effectively and sustainably.

> Communicate and change: through relationship building with communities, and continuous encouragement, greater progress will be made in promoting and scaling up the use of renewable energies.

> Other methods of application using renewable energy from development projects: Putting a roof-like mounted solar panel on the top of Indian trains; Installing solar panel farms in the grasslands of the Philippines; Innovations in using the currents and waves of the ocean for the production of hydro-electric power in some parts of Europe.

“Sustainability is in the education itself. It is in the process of the Government to convince the producers and users to continue to support the usage of renewable energy as their primary power for energy equipped tools and equipment.” Dr. Rosemary Kumwenda, UNDP
Through the success of Brazil’s National Immunization Programme, routine vaccination coverage in the country averages above 95 percent for most vaccines on the child immunization schedule every year—exceeding WHO’s recommendation of at least 90 percent coverage.
Background

Health care products usually require a significant quantity of packaging materials which leads to large amounts of waste. The Forum offered an opportunity for participants to examine the most innovative innovations in sustainable health packaging and approaches to follow circular economy principles. Through expert presentations and trainings, participants also had an opportunity to learn and share experiences in international standards and certifications on sustainable packaging materials.

Waste generated through the production process of health care products may contain hazardous substances that would require proper disposal and waste management. Inadequate treatment of health care waste management can generate toxic releases and risk both human health and natural resources. The Forum offered a space for key stakeholders from the global health sector to come together and explore ways in which to reduce production costs through sustainable waste management, as well as contribute to successful cases of waste minimisation, reuse, recycling and recovery.

Day two of the forum provided insights from presentations, panel discussions, campfire and training sessions and roundtable discussions also covered cross-cutting issues including the need for: stronger government legislations and frameworks for medical waste management; greater political will; information campaigns and awareness raising on the toxic components of medical waste and disposal of packaging; integrating SMEs and the local economy actors in decision-making on the disposal of medical waste; and a collaborative, integrative approach to health care waste management.

Dive into Day 2 Statistics

- **28** GOOD PRACTICES
- **16** SPEAKERS
- **15** ORGANIZATIONS
- **63%** WOMEN
- **37%** MEN

### FREQUENCY OF SDGs COVERED IN GOOD PRACTICES

<table>
<thead>
<tr>
<th>SDG</th>
<th>Coverage</th>
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<tbody>
<tr>
<td>Resource Efficiency</td>
<td>24%</td>
</tr>
<tr>
<td>Waste Management</td>
<td>19%</td>
</tr>
<tr>
<td>Chemicals</td>
<td>15%</td>
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<tr>
<td>Water</td>
<td>13%</td>
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<tr>
<td>Medical Products</td>
<td>11%</td>
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<tr>
<td>Procurement</td>
<td>6%</td>
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<tr>
<td>Packaging</td>
<td>5%</td>
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<tr>
<td>Human &amp; Labor</td>
<td>3%</td>
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<tr>
<td>Gender Equality</td>
<td>2%</td>
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<tr>
<td>Energy</td>
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</tbody>
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### TYPE OF GOOD PRACTICES PRESENTED

- **65%** PROJECT
- **28%** SUCCESS STORY
- **7%** TOOL

### GEOGRAPHICAL COVERAGE THROUGH GOOD PRACTICES

- **42%** GLOBAL
- **37%** ASIA
- **21%** EUROPE
2.1 THE CIRCULAR ECONOMY AND CRADLE-TO-CRADLE APPROACH WITH A FOCUS ON PROCUREMENT

PANEL BACKGROUND

The circular economy and the cradle-to-cradle approach are both systems that are fundamentally designed to produce high-quality commodities. The concept of circular economy is based on a regenerative production technique in which, input commodity, as well as the outcome waste, is minimised. Implementing the cradle-to-cradle ideology into the global health sector would mean all the inputs an outputs of commodities categorised into groups; technical nutrients that can be recycled or reused and biological nutrients which are composted or consumed. In this opening panel discussion, the focus was on the inter-relation and the preliminary efforts in implementing the circular economy and the cradle-to-cradle designs in the global health sector. The session aimed to open space for a multi-stakeholder process to design and produce high-quality health commodities, following the principles of the circular economy and the cradle-to-cradle approach.

This panel discussion was moderated by Mr. Håkan Björkman, Executive Coordinator, UNDP Global Fund Partnership (Switzerland).

Speakers included:
- Mr. Von Hernandez, Global Coordinator, Break Free from Plastic Movement (Philippines)
- Mr. Sanjay Kumar, General Manager, DFCCIL, Ministry of Railway, Government of India (India)
- Mr. Ingo Walterscheid, CEO, Ecological Forum for Industry Transformation and Transaction (EcoFITT) (Denmark)
- Ms. Rulita Wijayaningdyah, Chairperson of the International Board of Directors of the Forest-Stewardship Council (FSC)

The session focussed on the Circular Economy, and applying the Cradle-to-Cradle approach, in order to reduce and manage waste, and ensure a more sustainable procurement and production process. Speakers highlighted strategies to minimise waste using less energy and raw materials, and efficiently using resources to improve the quality of consumer goods. With the aim of moving away from the traditional linear market to a circular market, speakers emphasised the principle of returning materials used in the cycle of producing goods as a strategy to minimise waste.

Key Messages and Action Points
- The circular economy and cradle-to-cradle approach involve using materials more effectively, from their production to use and disposal.
- The cradle-to-cardle approach provides an important opportunity for industries to efficiently use all its resources for manufacturing goods, and subsequently reducing and managing waste, as well as exploring other methods of achieving sustainability in its operations.
- Speakers emphasised the power of public procurement in creating demand in the market for sustainable products which can be reused and repurposed.
- Stronger frameworks and legislation mandating the sustainability of products is an important step to take to incentivise public and private sectors.
- Grassroots movements and community leaders have an important role to play in pushing for the change to more sustainable procurement through adoption of the cradle-to-cradle approach.
- There is a need to shift the paradigm of waste management and combating plastic pollution away from end-of-line solutions such as recycling, which reinforce the linear economy model.
- Industries should incorporate design thinking into the system to develop sustainable solutions that will address the problems in waste management (e.g. optimizing medicinal packaging to remove the need for plastic), while at the same time paving the way to innovative technology which will change the course of production in different industries, and result in more lasting solutions.
- Key actors, such as consumers, policy makers, producers and suppliers must be involved in the move from a linear market to circular economy. The roles of these stakeholders are overlapping, and working in isolation would be insufficient to ensure lasting improvements.
- Stricter and clearer criterion for sustainable public procurement, incentives and a service model on procurement should be designed.
- There is a need to change mindsets, to reduce nervousness about costs, emphasise environmental sustainability in policies, and greater investment and focus in health care.
- Moving from a linear market to a circular economy provides opportunities to redesign and rethink sustainable solutions for public procurement efforts.
- Incentivizing public and private sector actors to change requires political will and effort at all stages of the supply chain. Furthermore, there is a need for collaboration among the
various sectors, particularly between the government and the private sector, in order to foster sustainable solutions in addressing increasing waste production.

> Burgeoning populations, and growing consumption levels contribute significantly to the increasing problems with waste disposal and mismanagement, given the limited resources and lack of systemic policies and programs to address these. There is thus an urgent need to incorporate innovative design thinking in the discussion on sustainability in the manufacturing and supply industries.

> "The private sector has the perfect incentive to transform itself. Consumers around the word are demanding change." Mr. Hakan Bjorkman, UNDP

2.2 RETHINKING WASTE IN THE HEALTH SECTOR – TOWARDS A CIRCULAR ECONOMY

PANEL BACKGROUND

By moving towards a more circular economy, it is necessary to design products so that more packaging either remains in loops or has the best possible opportunity to be recycled. Looking beyond the current “take, make and dispose” extractive industrial model, a circular economy is restorative and regenerative by design, and it aims to redefine growth, focussing on positive society-wide benefits. Relying on system-wide innovation, it seeks to redefine products and services to design waste out while minimising adverse impacts. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural and social capital. In this panel discussion, speakers presented different ways on how to embed circular thinking into the innovation process through rethinking the way we produce, use and dispose of health commodities and deliver health care services.

This panel discussion was moderated by Ms. Ruth Stringer, International Science and Policy Coordinator, HCWH (UK).

Speakers included:

> Dr. Mao Da, Co-founder of China Zero Waste Alliance [CZWA] (China)
> Mr. Manoj Sharma, Chief of the Urban Sector, ADB [the Philippines]
> Dr. Kristian Steele, Associate, ARUP (UK)
> Mr. Jeff Squalli, CEO & President, ECODAS (France)
> Ms. Susan Wilburn, International Sustainability Director, Health Care Without Harm (United States)

In this panel discussion, sustainable waste management and its implementation challenges were discussed and contextualised in the health care setting. Speakers referred to the value of the circular economy approach, particularly rethinking the way in which health commodities are produced.

Key Messages and Action Points

> In moving to more sustainable waste management practices, a multi-sectoral, participatory approach must be adopted.
> An overall policy agenda must be formulated to affect and effect the desired behaviour from individuals (consumers) and design thinkers (producers, supply chain) alike to reduce waste in the health sector.
> Governments, hospital workers, recyclers, manufacturers and civil society actors must all be included in discussions on sustainable health care management.
> Governments play a critical role in life cycle thinking; as such these actors must take a leading role in this effort.
> Multilateral organisations and financial institutions such as the ADB can influence and shift the agenda of stakeholder governments; consequently, such entities must also play a central role in moving towards a circular economy approach.
> Creating an enabling environment for adopting a circular economy approach in developing countries is challenging.
> It is important to remember the service-aspect – that stakeholders can lease and borrow, not necessarily procure.
> Stakeholders must consider practices in the health sector that go beyond a take-make-dispose model, and consider concrete ways in which to embed circular thinking in the innovation process for health care commodities.
> Renewable energy must be developed; more waste allows for more energy creation, but the productivity from this option is not the best and only incentivises further waste creation.
> Individuals must stop the hypocrisy as consumers, when the power is in our hands; behavioural interventions can have a significant impact: if 50 percent of consumers decide not to purchase 100 plastic bottles put on the market, the producer will stop producing it. This should be motivation enough for individuals to start voting with their feet. There is no need for customers to wait for regulations for...
practices to move towards more sustainable activities.

> There is a need for a great deal of pilot projects, research and development, and the sharing of experiences, lessons learned, best practices with respect to the circular economy approach and sustainable waste management.

> It is important to consider the broader policy and regulatory agenda, and whether it is structured correctly in order to maximize the benefits that can be reaped by following through with sustainable health care management.

> There must be a push to design for reuse, recycle, waste minimization, and maintaining high value across the entire circular economy.

> One of the biggest barriers to health care waste management is that if the waste is not segregated, all of that is hazardous waste. Over 80-93 percent of properly segregated health care waste can actually be recycled, repurposed, and reused. There are cost-recovery opportunities from proper waste segregation that can be used to fund institutional/organizational practices that are pro-sustainability.

> Producers, manufacturers, hospitals, etc. must be encouraged to treat their own waste on-site.

> The technologies and materials to address the challenge of waste management in the health sector exist. The focus must now be on learning and building capacity, as well as on the economic costs and benefits of the process.

> Stakeholders must be aware of the difference between biodegradable plastic and rapid degradation of products into microplastic.

Examples of Good Practice

Several products used in healthcare settings can be eliminated. For example, the toxic disinfectants are overused on floors. Floors need to be clean, but they do not necessarily need to be shiny with floor wax, which increases the risk of occupational health risks (e.g. asthma) in health workers to three times. Eliminating floor wax removes the toxic waste (the wax itself) and at the same time reduces occupational hazards and exposure of workers.

Another elimination example is the use of the soap additive triclosan, which has not been proven to add value to the disinfection or cleaning of hands. It is an unnecessary additive which is another source of waste, that goes down the drain. Eliminating this additive reduces the toxic chemicals that go into the water system.

The health sector must go back to reusable instruments and sterilisable products in the or as well as in the cafeteria e.g. with cafeteria trays.

Sharps containers is another example of a product which can be reused. They can be machine operated, to remove the top, re-sterilised and reused.

Health sector actors should also look to recycle and reprocess anaesthetic gasses, which are potent greenhouse gases. There is now a mechanism to reprocess the anaesthesia, so it does not go up into the atmosphere. This serves as an opportunity to reduce costs, protect healthcare workers and reuse available resources. In Canada, anaesthetic gases are already being recycled in hospitals.

Overall, incremental changes in the hospital setting will amount to big steps for sustainable waste management in the long run.

The sector should focus on infectious waste which emerges from waste in the health sector. Before beginning the recycling process, the hospital needs to ensure the risk is removed. Traditionally, incineration has been used, however this transforms the infectious risk to a pollution risk. A new approach is to avoid the pollution risk by sterilising the waste instead, using new technologies based on shredding and steam sterilising. The best way to do this is to sterilise-on-site, rather than hand over the waste to a waste management company, that is not an expert in infectious waste and would simply resort to incineration. The new product that emerges from the sterilising process is a residue that could be recycled. It cannot be reused as a mature component in the healthcare sector, however it can be reutilised instead as bricks or pellets in another field or sector. The cost-effectiveness of these processes is yet to be conducted. [ECODAS]
Through China’s Zero Waste Alliance, multiple SDGs are addressed in hospital waste management programmes. Separation of food waste contributes to SDGs 2 and 13. The military and Ministry of Health engage in waste separation. There is also separation of infectious and non-infectious waste, labelling of toxic chemicals in IV bags in products for possible substitution. The Alliance advocates for the health sector to pioneer waste separation and incentivise solutions for decreasing or managing waste. A multi-sectoral approach is strongly encouraged. The Chinese government also has a mandatory policy on waste separation – all hospitals are required to comply with the waste management policy.

Without segregating waste from health facilities, it is all hazardous. If properly segregated however, over 80-93 percent of waste can be recycled, repurposed, and reused. There are cost-recovery opportunities from proper waste segregation which can be used to fund institutional/organizational practices that are pro-sustainability.

Health Care Without Harm’s NoHarm.org website features a total cost of ownership tool, which helps hospitals and other healthcare facilities accurately internalise the costs that come from the procurement of various commodities and supplies during the planning and decision-making processes.

“People are generally afraid of medical waste… I was pleased to hear the segregation practices in China from Dr. Mao Da. If materials are segregated, over 80 to 93 percent of health care waste can be recycled, repurposed, and reused.” Ms. Susan Wilburn, HCWH

2.3 SUSTAINABLE INTEGRATION OF SMEs FROM DEVELOPING AND TRANSITION COUNTRIES IN THE GLOBAL RECYCLING OF SECONDARY RESOURCES

PRESENTATION BACKGROUND

In developing countries, the recovery of materials from waste is mainly carried out by thousands of individual workers referred to as the “informal” sector. This involves numerous risks, such as environmental pollution, health hazards and the cross-contamination of hazardous substances. This session explored, through expert presentations, how a company can efficiently integrate SMEs in the global recycling of secondary resources.

This session featured presentations on Small and Medium Enterprises, their experiences with waste management, and the manner in which waste management is used as sources of livelihood for both entrepreneurs and their communities. Speakers also discussed the current state of the waste disposal system in the Philippines, and the various key players involved.

Moderated by Mr. Ramon San Pascual, Health Care Without Harm’s Asia Director (the Philippines), the session included presentations by:

- Ms. Rowena Jardas Co-Owner, Buena Handicrafts (the Philippines)
- Ms. Wilhelmina Garcia, Founder, Junk Not (the Philippines)
- Ms. Aileen Lucero, National Coordinator of the EcoWaste Coalition (the Philippines)

Key Messages and Action Points

- Small and Medium Enterprises (SMEs) and the informal sector are key stakeholders in improving waste management and sustainably diverting hospital waste from disposal, and should be consulted in decision-making on recycling and reuse of waste materials in developing and transitioning countries.
- However, the work of SMEs must be paired with strong policy implementation, and the engagement and action from Local Government Units (LGUs), as SMEs offer mostly short-term solutions. LGUs on the other hand, can provide policies for long-term solutions to address the root causes of waste management issues.
- LGUs should place bans on plastic use to lower waste production.
- Political will in finding long-term solutions is
a challenge, and health sector stakeholders must continue to push for greater political action and policy implementation to this end.

> Large companies, which are responsible for the majority of plastic waste, should re-design their products to be more amenable for repurposing in the informal recycling economy.

> The informal recycling economy should be used as a source of raw materials in developing countries.

> Trade fairs and endorsements by local governments can go a long way in helping SMEs market their business.

**Examples of Good Practice**

*Buena Handicrafts*

Training Vulnerable Groups in Arts and Crafts

Ms. Rowena Jardas, Co-Owner, Buena Handicrafts, (The Philippines)

The Buena Handicrafts enterprise was established after several experiences of discrimination faced by the owners and community members, due to the stigma associated with Hepatitis B, which resulted in unemployment. Through this enterprise, water hyacinth stalks are used as raw materials for arts and crafts. It provides training to vulnerable groups including detainees, persons with disabilities and solo parents, to learn and enjoy the art of making handicrafts. The business further advocates for the empowerment of Hepatitis B carriers to focus on their talent and provides them with a means by which to generate income. In this way, the enterprise addresses the problem of unemployment for individuals facing discrimination, as well as the water hyacinth problem in the nearby Laguna lake.

Combining her passion for art and her love for nature, founder Ms. Garcia, makes use of various recycled materials such as cans, wine bottles, and fossilized wood to produce furniture and works of art. This serves as a means to generate income for the community of women, as well as reduce the impact of pollution in the area. Ms. Garcia has made interior designs, furniture, and award-winning pieces of art out of materials the community gathers. This has resulted in additional income for the daily lives of community members, and a decrease in the impact of pollution in the area. Examples of some of her designs include: converting wine bottles into chandeliers, using fossilised leaves as wallpapers, and making rope and pillow cushions out of plastic magazines.

*Junk Not*

Converting Recycled Materials to Furniture and Works of Art

Ms. Wilhelmina Garcia, Founder, Junk Not, the Philippines, design@junknot.ph

In developing countries, such as the Philippines, there are many formal and informal actors involved in the waste disposal system. In the informal waste sector, an informal recycling network comprises the following: household waste collector, street pickers, itinerant waste buyers, municipal waste collection crew/waste reclaimers, dumpsite pickers, middlemen (intermediate dealers). Middlemen serve as the link between the informal and formal waste sectors, transitioning the waste products. The informal sector for recycling can be used as a cost-cutting method for formal waste management, as well as a source of secondary raw materials for local industries. Integrating existing informal recycling structures into formal systems makes waste management sense as

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**EcoWaste Coalition**

Promoting Environmental Justice and Stewardship for Advocating for a Zero Waste Philippines

Ms. Aileen Lucero, National Coordinator of the EcoWaste Coalition, (The Philippines), alucero@ecowastecoalition.org

EcoWaste Coalition is a public interest and advocacy network of more than 150 community, church, school, environmental and health groups united by the common goal to end wasting through the promotion of environmental justice and stewardship. The EcoWaste Coalition defines Zero Waste or “Walang Aksaya” as “the synergy of principles, cultures, beliefs, systems, methods and technologies that aims to eliminate wasting and ensure full and beneficial use of resources to restore ecological balance and provide for the needs of all creation.” The Coalition envisions a Zero Waste Philippines by 2020 by pursuing sustainable solutions to waste, climate change, and chemical issues facing the country and the world.

As part of their zero waste for environmental and climate justice campaign, the EcoWaste Coalition campaigns for the diversion of discards from dumpsites and incinerators that produce GHGs and by-product POPs that poison communities. The coalition is committed to the closure, cleanup and rehabilitation of dumpsites, their replacement with community-oriented clean recycling centres, and the provision of humane and sustainable livelihoods for informal recyclers.

Promote the Integration of Informal Recycling Structures into Formal Waste Disposal Systems

Ms. Aileen Lucero, National Coordinator of the EcoWaste Coalition, (The Philippines), alucero@ecowastecoalition.org

In developing countries, such as the Philippines, there are many formal and informal actors involved in the waste disposal system. In the informal waste sector, an informal recycling network comprises the following: household waste collector, street pickers, itinerant waste buyers, municipal waste collection crew/waste reclaimers, dumpsite pickers, middlemen (intermediate dealers). Middlemen serve as the link between the informal and formal waste sectors, transitioning the waste products. The informal sector for recycling can be used as a cost-cutting method for formal waste management, as well as a source of secondary raw materials for local industries. Integrating existing informal recycling structures into formal systems makes waste management sense as
there is clear potential to strengthen formal-informal alliances.

Informal sector recycling allows new enterprises and trading networks to evolve and investments to take place. In addition, it delivers a steady, reliable supply of valuable secondary raw materials to local industries. This can serve as a substitute to importing new materials and thus stimulate the manufacture of low-cost, affordable products for the local community. Recycling secondary materials also cuts the cost of formal waste management systems as the quantity of waste for collection is reduced. Recycling provides employment and a livelihood for impoverished, marginalised and vulnerable social groups, and promotes the role of cooperatives. Finally, it conserves natural resources, reduces the need for landfill areas, and limits the output of greenhouse gases.

Biodegradables comprise most of the solid waste in the Philippines. Currently, hospitals in the country use an in-house sewerage processing, material recovery facility and bio-digester. Through the sewerage processing facility, clean water is provided for the hospital garden. Further studies are however needed, in order to measure the efficacy of these measures in translating to better outcomes. There is also a 3-tiered waste segregation system in the Philippines.

Speakers focussed on the challenges hospitals and health care establishments face with implementing sustainable health care waste management policies and plans, including addressing the challenges associated with incineration of medical waste.

**Key Messages and Action Points**

- The challenge of health care waste management is a global one. It is particularly important for developing and emerging countries to improve inadequate or unsustainable waste management practices.
- Mixing medical waste in municipal incinerators is a poor practice. There is a need to step out of the current ways of managing medical waste. The first step is to not ignore the problem.
- In order to achieve sustainable medical waste management, it is necessary to close the loop. Incineration is a loophole, and government officials may view it as urgent as medical waste is generated every day.
- Waste must be converted into products such as energy or recycling materials.
- There is a need for adaptive management, such as introducing options that do not involve incineration, as well as training health workers to handle waste. Barcodes have also been
introduced in waste management and tracking, in order to help with the documentation process.

> It is necessary for stakeholders to adopt an integrative approach to health care waste management in hospitals and health care facilities, in order to achieve positive and sustainable outcomes.

> There are many opportunities in sustainable waste management, and savings that can be generated. There are also many national legislations which focus on sustainable waste management. In the 1980s, legislations were created in the developed world; in the 1990s, rules and regulations were developed; and in the 2000s, implementation of these rules has been ongoing. It is important to learn from the process of implementation in order to create stronger legislations.

> In order for implementation to be effective, the upper management levels of all hospitals must be trained and made aware of the sustainable waste management policies and regulations.

> A detailed Health Care Waste Management Act must be created in order to remove reliance on provisions in other laws which may not be as comprehensive.

**Country Cases**

**Zambia.** The National Health Care Waste Management Plan is Zambia’s roadmap for sustainable HCWM. Due to the lack of policy and revised guidelines on HCWM, hospitals and health care establishments instead use provisions in laws. To date, there is still no deliberate HCWM Act, and stakeholders rely on different acts on health and the environment. It is hoped that within the coming years, the government can adopt an act specific to HCWM.

**China.** Only an estimated 12 percent of Chinese companies can comply with EU standards of waste management. Dioxin in the air has also been increasing. Surveys have also shown that the use of PVC bags in major hospitals in Shijiazhuang is still high, at 90 percent. The government has a policy to encourage segregation of infectious and non-infectious PVC bags for recycling. However, after recycling, the product can be converted into many things, including toys. A research study showed that toxicity levels can reach 20,000 ppm in one toy, with the EU limit being only 10,000 ppm. There is an urgent need to label products to explain the toxicity levels and include relevant warnings.

**India.** In India, new regulations were created in 2016 based on the lessons learned from 1998 when the first legislation on waste management was created.

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**Examples of Good Practice**

The Philippines is the only country in the world that bans incineration through the Philippine Clean Air Act (2003). The country has been very successful in the management of medical waste.

A multi-country project between 2005 to 2014 involving 7 countries, focused on reducing healthcare waste to avoid releases of dioxins and mercury. The project led to the implementation of various policies, waste minimization, segregation, non-incineration, etc. One example of successful implementation of the project was a 3,000-bed hospital in India, where infectious waste was reduced from 3,000kg to 400kg. Through this process, the hospital was also able to earn significant amounts of money, and the infectious waste was well-managed through the various waste management and minimisation processes.

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**Link to presentations:** Healthcare waste management

**2.5 CREATION OF LONG-TERM BUSINESS VALUE THROUGH SUSTAINABLE DEVELOPMENT GOALS**

**TRAINING BACKGROUND**

As producers of much of the world’s output, businesses have a central role to play in advancing responsible production and consumption. They can manage sustainability of their own operations by improving efficiencies, look to source more sustainable inputs, enhance the sustainability of products and services at the point of use with credible sustainability information, report publicly on their sustainability performance and that of their supply chain, and take steps to ensure their products are not misused to violate human rights. The training session presented the Blueprint for Business Leadership on SDGs, which aim to inspire all business — regardless of size, sector or geography — to take leading action in support of the achievement of the Sustainable Devel-
Participants identified certain barriers in the Corporations must affiliate with SDGs through other SDGs. This tool is made for any business that is ready to advance its principled approach to SDG action to become a leader.

Moderated by Mr. Angus Rennie, Senior Manager, Partnerships and UN Relations, United Nations Global Compact (UNGC), this training focussed on the UNGC toolkit on Creation of Long-Term Business Value Through SDGs. Mr. Rennie communicated that it needs to be recognized that businesses have been consuming finite natural resources and if they do not align themselves to the SDGs and make their operations more sustainable, natural resources will, ultimately, be exhausted. Thinking about the sustainability of resources should be the new thrust which businesses should adopt and integrate into their operations but there are gaps in the goals that need to be operationalized in order for organization professionals to understand their importance in the campaign for the SDGs. UNGC is aware of this, hence, the availability of resources which could guide businesses committed to sustainability. The toolkit includes five basic steps: basic understanding, defining priorities, setting goals, reporting and communications, and integrating. UNGC recommends ensuring that the five qualities of SDG leadership are met. SDG undertakings should be intentional, ambitious, consistent, collaborative, and accountable. Apart from making sure that these qualities are met, endeavors should be assessed from two perspectives; seek to identify not only the greatest positive impact but also any unintended negative impacts. The SDGs are interconnected and if efforts of constituents are only focused on alleviating one or few of them, this may actually harm or undermine any progress done for other SDGs.

Key Messages and Action Points:

> There are resources publicly available to guide how businesses could align with the SDGs. Some examples are: SDG Compass, SDG Blueprint, SDG Industry Matrix, and Business Reporting on the SDGs.
> Participants identified the need for the implementation of SDGs in their own practices.
> Corporations must affiliate with SDGs through a five-step procedure by understanding the basic of SDGs, defining priorities, setting goals, reporting and communications, and integrating.
> Participants identified certain barriers in the SDG implementation in the business context. Among these barriers are:
  > A gap between the SDGs that need to be operationalized and operational targets, so that professionals can better understand their role in the process;
  > Business partners can have a different understanding of the SDGs, and see it as simple CSR undertaking;
  > Capacity development and learning focused on the internal audience is lacking;
  > Lack of connectedness of the SDGs with the company/organizational culture.
> Business should adapt a principle-based approach. They need to assess the business endeavors from two perspectives, by identifying the greatest positive impacts and the unintended negative impacts.
> Business should implement an integrated approach recognizing the interconnectedness of the SDGs (e.g. if an advancement is made on one SDG, one should ensure that the progress on other SDGs is not obstructed).

Example of good practice

> SDG Compass: The Guide for Business Action on the SDGs
> Blueprint for Business Leadership on the SDGs: A Principle-based Approach
> SDG Industry Matrix: Health care & Life Sciences
> Business Reporting on the SDGs: Analysis of the Goals and Targets

Plastics are fundamental to our everyday life and are heavily present in the health sector packaging. However, they are one of the most wasteful examples of our existing linear, take-make-dispose economy. With 8 million tons of plastic entering the ocean each year, it is necessary to urgently rethink the way we make, use and reuse plastics. Catalysing change through collaboration in this global material flow will not only create a more effective plastics system but will also demonstrate the potential for a more comprehensive shift from a linear to a circular economy - an economy in which plastics never become waste or a source that release toxic emissions into the atmosphere. This training session offered participants insights into different success story examples on rethinking health care plastics.

This training session on healthcare plastics featured:
> Ms. Wendy Rayner, National Sustainability Manager, NHS Scotland [UK]
Examples of Good Practice

Polypropylene is a plastic that can be integrated into the circular economy as it is recyclable through re-processing. Using polypropylene brings about economic value that can be used for recycling costs. In the health sector, this can aid medical waste recovery. These plastics can be treated first to rid it of contaminants before bringing it back to the production chain for reprocessing.

It is better to keep plastic consumption in the inner loop of reusing and product substitution. However, if this becomes impossible to do, then the outer loop of material recovery and waste segregation should be able to catch and correct these instances.

There are standards for the sterilisation of plastic products, in order to recycle those that can be recovered. There are also refund deposits for single-use plastics, and programs are exploring incentivising recycling from the producer.

"Is it plastics that are bad, or the plastic management?"  
Ms. Wendy Rayner, NHS Scotland

"The more plastics we use, the more it is produced."  
Ms. Lena Stig, Swedish EPA

Link to presentations: Rethinking healthcare plastics

2.7: THE LATEST TRENDS IN WASTE MANAGEMENT LEADING TO A SUSTAINABLE REDUCTION IN POLLUTION FROM MEDICAL WASTE

Waste management has evolved over the ages with population growth, and disposal sites became less acceptable by the society. Emerging trends in waste management have created a venue for discussion to identify best methods for waste disposal. This session was a case-study/research study presented by a technical expert and considered the concurrent trends in the waste management and future of the waste management worldwide.

The session on latest trends in medical waste management was moderated by Mr. Ademola Osigbesan.
Supply Officer at Unitaid/WHO (Switzerland).

Presenters included:
> Ms. Kristina De Geer, Environmental Strategist, Region Skåne (Sweden)
> Mr. Robert Matthews, Contracts Manager, Health Technology Centre, UNICEF Supply Division (Denmark)
> Mr. Kenneth Sam-Sin, CEO & Managing Partner, SimpleComply (Netherlands)
> Ms. Ruth Stringer, International Science and Policy Coordinator, HCWH (UK)

Key Messages and Action Points
> When considering medical waste management, stakeholders must remember that medical waste can also mean excess in terms of medical equipment. This includes items that have been donated.
> Common problems encountered in medical equipment donation include: Lack of buy-in from local participants, unprepared sites, inadequate water supply or pressure, untrained staff, and lack of spare parts sources, among others.
> Excess of medical equipment can be minimized first through a needs assessment, and then by ensuring long term availability of training, maintenance, and spare parts at a reasonable cost, to ensure that individuals can afford to undertake sustainable healthcare waste management for years to come.

Approach to sustainable medical waste management
> Planning and action planning: there should be standardisation of data, collection of data, transparency (including on product information and the process of production). Decision-making should be data-driven and translate into target and goal-setting. The support and compliance of relevant institutions is critical. Formulating and following action plans will help stakeholders focus the direction of sustainable procurement activities.
> Paradigm shift in funding: the current funding structure seeks the most innovative thing, the newest approach that has not been done before. However, what is urgently needed is funding in sustainable interventions.
> It is essential to get the buy-in of hospitals, and ensure they create their own waste treatment facilities.
> Procurement should be organized and centralised.
> Local ownership: medical waste management plans should be collaborative, based on long-term partnerships. Verbal commitments of resources, monetary and non-monetary are insufficient.
> Stakeholders must ensure there is sustainable and forward-thinking budgeting.
> Awareness and education are critical components in ensuring the success and sustainability of medical waste management programmes; time and resources must be put into educating the relevant stakeholders on the processes and policies.
> Waste management systems are complex and healthcare facilities need an integrated supply chain.
> Design-thinking activities surrounding wicked challenges on healthcare waste should be performed, in order to develop innovative solutions that reduce waste by a significant margin.
> In innovative procurement, it is important to consider how waste production by healthcare facilities can be reduced from the very start by choosing to procuring items that are made of less “wasteful” components.
> Healthcare facilities should change their internal processes to reflect the organization’s sustainable processes and objectives, as well as specific targets for sustainability.
> Stakeholders must ensure that the necessary governance mechanisms and frameworks are in place, as well as concrete sustainable procurement policies, in order for medical waste management programmes to succeed.
> An International accreditation programme for sustainable procurement and practices is essential, as this would impose environmental responsibility and accountability on healthcare facilities and set the standards for improved quality. This would ultimately lead to long-term and ongoing compliance, and more positive overall outcomes for organizations.

Examples of Good Practice

Hospitals in Sweden began their move towards sustainable practices in the health sector in 2004 and have since then, surpassed their objectives even after 2014. Environmental strategists ensured that they are well aware of developing technologies and operations in sorting medical waste.

In the medical field, there are several examples of waste that can be reduced incrementally. Food waste from inpatients and hospital cafeterias have been used as biogas. Hospitals have switched sup-
pliers for less heavy syringes that have been made with fewer materials. As a result, the hospitals had less waste with a reduction in yearly waste production by 4.5 tonnes. Minimising unnecessary wastage of materials further contributes to medical waste management. An example is the packaging of gloves where environmental strategists changed the way gloves have been stacked in such a way that it reduced the change of accidental unclean gloves on the floor from 6 percent to just 1 percent. Environmental strategists in Sweden went as far as creating 91 percent renewable plastic aprons which are largely in demand with 6 million single-use aprons produced every year.

Ensure that there is buy-in at the local level among stakeholders, or else the projects will not run sustainably into the future. Ms. Ruth Stringer, HCWH

Link to presentations: The latest trends in waste management

2.8 BIODEGRADABLE PLASTICS IN THE HEALTH SECTOR: ADVANTAGES AND DR.AWBACKS

CAMPFIRE SESSION BACKGROUND

Biodegradable plastics gained significant attention with the increased environmental concern on the use and waste created by the plastic packaging. These bio-based packaging materials contain several advantages, starting with reduced greenhouse gases and its environmental life-cycle. However, biodegradable plastics may not be the solution for the high amount of plastic solid waste problem by others for reasons such as they’re not so short breaking down duration in the environment. This campfire session opened space for discussions on how biodegradable plastics usage in the health sector can promise a more sustainable future and what could be the challenges.

Cost, however, is not the only sustainability concern. The available of feed stock that serves as the basis of the materials of biodegradable plastics must also be considered. Downstream effects must also be taken into account e.g. the usage of corn as biofuel in Guatemala increased the price of corn tortillas. Similar challenges exist for the use of food products for plastic production. Biodegradable is not always a desired quality, and if an alternative exists, actors must focus more on using that alternative and moving away from materials which are harmful to the environment.

The production and development of completely biodegradable plastics should be support-
ed in order to have an alternative for different processes and uses to decrease carbon emissions and plastic pollution, particularly in a plastic-heavy industry such as healthcare provision.

Regarding the use of biodegradable plastics, there is a need to determine the industries that can best apply biodegradable plastics.

Examples of Good Practice

One possible alternative is using reusable bags to deliver products to consumers, which consumers can then return back to the company. Other options already in use in some parts of the world include charging for the use of plastic bags or banning their use entirely in supermarkets for example.

Polyhydroxyalkanoate (PHA), is a material derived from palm oil products in Malaysia. The material is 100 percent biodegradable and was produced from a circular economy between the plastic producers and farm owners of mealworms. It offers great potential as the time before it biodegrades completely and continues to hold the positive characteristics of plastic, can be modified.

It is also biocompatible, meaning it can be used for production of medical devices, and the body will not react to it. It is renewable as it does not use fossil fuels. The initial process of extracting PHA granules from bacterial cells is costly. However, cutting costs was made possible through feeding animal models with the dried cells. Animals then excreted the polymers, and the fecal materials were collected and processed. Currently, PHA is acquired through mealworms, that eat the cells and excrete the PHA. PHA production is scalable since the mealworm industry is very large and the market for it exists. This system is currently being used for production of control release fertilisers. Japan is also interested in the material for the production of adult diapers.

2.9 THE FUTURE OF PACKAGING IN THE HEALTH SECTOR: GOOD PRACTICES AND COMMON CHALLENGES OF ECO-INNOVATIVE PACKAGING

The role of packaging in the health care industry is one of the critical components of delivering goods and services globally. Hence, health care packaging design can be seen as an entry point of increasing the endurance and quality of the commodities while having positive impacts on the economic and environmental aspect of the manufacturing process.

This session considered packaging of various health-care products, including Drugs to blood donations, and its impacts on the environment and sustainable development. Moderated by Dr. Bwijo Bwijo, Programme Specialist on HIV/AIDS at UNDP Tanzania, the session featured presentations from:

- Mr. Sourav Mitra, Vice President - Global Packaging Strategy (OSD), Mylan Laboratories Limited (India)
- Ms. Lena Stig, Former Project Manager, PVCfreeBloodBag, Sustainable plastic use at Swedish EPA (Sweden)
- Mr. Ingo Walterscheid, CEO, Ecological Forum for Industry Transformation and Transaction (EcoFITT) (Denmark)

Key Messages and Action Points

- With the rise of eco-innovative designs and projects which take into account versatility, cost-effectiveness and sustainability, eco-packaging of products has become an equally important dimension in the process and can contribute significantly to current health sector services.

- As eco-innovative concepts spread gradually, there is a surge in demand from various stakeholders for more sustainable packaging, which is critical to combat future health risks and the high costs of packaging. The eradication of PVC in some healthcare products and the adaptation of cheaper and biodegradable polyolefin films are being adapted in various market systems, particularly pharmaceutical and medical apparatus markets. When thinking about eco-packaging, it is important to not only try to reduce the carbon footprint from the production of packaging, but also to consider what will happen to the packaging once it is discarded, and where it will end up in the next phase.

- The spread of eco-innovative practices in
packaging of healthcare products are also guided by various requirements, such as the steady supply of new materials, to ensure that the innovation is more sustainable and a better environmental alternative than other materials with the same properties.

> Although these requirements do not directly burden the healthcare product markets, companies entering the world of eco-innovative packaging are facing other challenges such as a lack of partners and financing, lack of local suppliers for the new materials and lack of worldwide recognition of the eco-innovative packaging practices.

Plastics vs. glass as main material for packaging

Plastic is more efficient and cost-effective than glass. The transportation of glass bottles is extremely difficult, as there is no sustainable set-up that ensures the safety of glass bottle delivery. For the food industry, glass is the best option, if societies are able to get packaging working in the local system, then there is no need for transporting the glass bottles. At the same time however, it must be remembered that glass is not free from everything; lead and other harmful substances exist in glass, and energy use in glass packaging production is another consideration.

Examples of Good Practice

Karolinska University Hospital, Melitek and Haemotronic have been collaborating on the production of a PVC-free BloodBag. The raw materials for the bag are all 100 percent PVC free. The bags are made of a 3-layered polyolefin-based film. Each layer is made of different types of modified polypropylene. The tubing is made of a thermoplastic polyolefin elastomeric compound. All materials of the bag have already been approved for medical applications meeting the requirements of USP class VI and ISO 10993-5. Through the design of this bag, partners are aiming to improve conditions for health and environmental performance, while retaining levels of medical quality and safety. The PVC-free bag would: 1) minimize patient exposure to potentially-harmful substances; 2) ensure a better working environment; and 3) reduce long-term costs.

Moving forward, partners are looking at quality improvements for the bag, and upscaling and validating the product, as well as looking for a fourth partner to take the product on to the market. Most importantly, partners need an increased demand for such a bag, in order to ensure the successful scaling up of the product. Partners are looking to healthcare organisations to join them in demanding PVC free BloodBags by signing a Letter of Intent.

Mylan Pharmaceuticals has been advancing eco-friendly packaging and its good practices in its company as well. Polypropylene, PVC-free plastics are now being produced in India and distributed in Japan. High-density polyethylene plastics, which are easily recyclable, are now being used. The company is designing innovating packaging solutions, which are both cost-saving, as well as safer for people and planet.

“You can minimize risk of eco-packaging by focusing on demand and supply and innovation. The organization can try the new product first before buying it through testing.” Ms. Lena Stig, Swedish EPA

Link to presentations: The future of packaging in the health sector

2.10 MERCURY-FREE HEALTHCARE: GOOD PRACTICE EXAMPLES

PANEL BACKGROUND

This panel discussion considered the negative effects of mercury, particularly as a neurotoxin, rendering it toxic to everyone that comes into contact with it. Given that mercury is commonly associated with healthcare equipment such as thermometers, this session focussed specifically on the need for the health care sector to take urgent action in order to properly phase mercury products from the healthcare system.

Moderated by Ms. Susan Wilburn, the International Sustainability Director, at Health Care Without Harm, United States, the session featured presentations by:

> Dr. Samwel Manyele, Professor, University of Dar Es Salaam (Tanzania)
> Ms. Faye Ferrer, Coordinator for Global Green and Healthy Hospitals in the Southeast Asian region, Health Care Without Harm Asia (the Philippines)
In Delhi, India, the use of mercury-based instruments was banned in hospitals in 2010, and plans were adopted to recycle unused mercury from hospitals by selling it back to private manufacturers. By 2011, as much as 90kgs of the liquid metal were sold by over 60 hospitals in Delhi. Across the country, the amount of mercury imported was also reduced from around 225 million tonnes in 2001-2002, to 19 million tonnes in 2015-2016.

In the Philippines, levels of mercury were found to be high even in non-medical areas in hospitals. The organisation closely followed the WHO’s key steps in developing and implementing a national health system-wide strategy to replace mercury devices. The Philippines also followed HCWH’s Eliminating Mercury Healthcare Establishment. An informational document was produced, for easy reference for nurses; a mercury-elimination task force was created; the hospital management signed pledges; mercury inventory was conducted; and a mercury substitution programme was developed. The Campaign for a Mercury-Free Healthcare was also created. An example is the case of the San Lazaro Hospital, where mercury inventory was conducted, and then UNDP guidelines were followed in order to seal, store and label mercury containers.

Link to presentations: Mercury-free Health Care

2.11.1 THE CHALLENGE OF MATERIAL RE-USE AND RECOVERY IN THE HEALTH SECTOR

CONVERSATION HOUR

Moderated by Ms. Wendy Rayner, NHS Scotland, this dynamic roundtable discussion focussed on the reuse and recovery of materials, particularly plastic-based products in the health sector.
address the waste generated from homecare.

Examples of Good Practice

Sample infrastructure for better material re-use and recovery practiced or studied by NHS Scotland include responsible procurement assessment, innovative packaging design solutions, and facilities for high-technology density- and chemical-based plastic segregation which allow the cost-efficient reuse of the materials.

> In Scotland, there is a lot of pharmaceutical waste; NHS Scotland’s “Procurement Assessment” offers a review of the life cycle of products and services. This mapping process identifies areas of concern (e.g. fair work practices, use of scare resources, generation of hazardous waste).

> Another challenge is with the way in which waste is treated as infectious, despite the fact that the majority of the public are free from infectious disease. This leads to high costs for unnecessary waste management procedures. For example, in the UK pregnant women have blood tests every 6 weeks, so the state of the pregnant lady is known by the time of delivery. When the woman gives birth, waste is treated as infectious. Significant amounts of money go to hospital waste management even though an estimated 80 percent of hospital waste is non-infectious.

> NHS complexity – “the scary chart”- so long as clinicians put the correct things in the correctly coloured bag, the NHS will be able to send most waste to its proper destination. Although waste ends up in the landfill, only 5 percent of waste goes there. From a clinician’s point of view, they only see at most 3 types of waste.

> Food Waste Dryers:
  > Scotland is a high-income country where healthcare (from prescriptions, medicine, etc.) is free.
  > The country has Food Waste Dryers (like a tumble Dryer) so that waste can be stored for longer. While it may seem that more energy is consumed this way, this system in fact helps saves energy, as compared to having waste collection every day.

“Plastic is not bad. Sometimes it’s easier to blame the

2.11.2 NEW BIO-BASED MATERIALS IN THE HEALTH SECTOR – TODAY AND FOR THE FUTURE

This conversation hour featured a discussion around new bio-based materials for the health sector, led by Ms. Kristina De Geer, Environmental Strategist, Region Skåne, Sweden. Among high climate-impact hospital materials in Sweden was the single-use, oil-based plastic aprons. The production, use and disposal of these plastic aprons contributed to the high climate impact of consumables of hospital materials. The organization based in Region Skåne started to invest in innovative procurement to find an alternative for petroleum-based plastics in single-use aprons. A selection process was carried out to decide on the product, which was then followed by product development. The end result was a 91 percent renewable plastic apron made from sugar cane and lime. Taking into consideration the number of single-use aprons used annually, their studies show that this shift in product will save the country 250 tons of CO₂ emissions per year. Ultimately, the end goal of this initiative is to stimulate the market for new and more environmentally friendly products, and hopefully be able to reduce or replace oil-based products.

> In 2011, studies of Region Skåne, Sweden showed that the region had successfully reduced CO₂ emissions from activities in transportation and energy usage (baseline: 2001), however, CO₂ emissions from consumables remain large, and were even found to have the largest climate impact. Region Skåne then looked into consumables in healthcare and noted that the top product groups with greatest climate impact included single-use plastic aprons, gloves, and syringes. The studies showed that for the disposal (by combustion, specific to Sweden) of these plastic aprons, twice the amount of CO₂ is emitted through the waste from the apron than through its production.

> An innovation procurement was conducted on
single-use plastic aprons, moving from oil-based plastic to sugar cane and lime-based plastic (91 percent renewable, 9 percent oil-based).

Selection process:

> Interested stakeholders were invited to seminars and discussions in 2015; the procurement of materials was conducted in 2016. Guidelines and requirements for the products and suppliers were set and negotiations were conducted.

> The required specifications were not set too high, so as to allow both big and small companies to have a chance to participate in the initiative.

> While the requirement was set at 70 percent renewable material, the organisation was able to acquire the new product at 91 percent renewable.

> Through discussions with invited stakeholders, it was decided to change the terminology, from ‘renewable materials’ to ‘bio-based’ materials. This also allowed more suppliers to attend discussions, and therefore expanded the market for environmentally friendly products.

Product Development:

> An internal group of experts in the fields of environment, innovation, procurement and others ensured the team had what was needed for product development.

> The product was tested three times, and each time during the procurement process, the team took note of what changes were needed to pass on to the producer for further development e.g. nurses were asked to use the aprons, and provide feedback on the functionality of the aprons (e.g. Is it easy to remove? Does it break easily?).

The Product:

> The aprons are made primarily from sugar cane and lime. They are 91 percent renewable and 9 percent oil-based.

> While it is actually recyclable, for hygienic purposes and standards, aprons used in hospitals are disposed after every use. Disposal is still done through incineration.

> With regards to the cost, Region Skåne obtained 6 million aprons at a price 30 percent more than the price of oil-based aprons. However, higher volumes would reduce the unit price. An increase in demand will also push prices down further.

> The apron is currently being used in Swedish hospitals and staff have commented they are pleased with using them.

The initiative was not meant to be applied primarily in the hospital setting; rather it served as an entryway to create a market for this new type of material. The vision of the organisation is to be able to introduce a new bio-based material to stimulate the market for more environmentally friendly materials that will replace petroleum-based plastics.

2.11.3 CHEMICALS OF CONCERN IN MEDICAL PRODUCT PACKAGING

This conversation hour was led by Ms. Ruth Stringer, International Science and Policy Coordinator, HCWH (UK).

Key Messages and Action Points

> There is an urgent need to develop, standardise and regulate universal labelling of PVC-containing materials produced by hospitals.

> A convention should be established to call for the elimination of PVC in all medical products.

> Centralised screening facilities should be established in places where there are insufficient resources to create local laboratories where PVC can be identified in materials.

> Awareness campaigns are necessary to inform and educate the public about the impacts of PVC (similar to those campaigns on mercury).

> Stakeholders must push for greater financing to invest in alternatives for PVCs, particularly in developing countries, where there is often a lack of mechanism for policing the imports of PVC products from developed countries.

2.11.4 GUIDE FOR HEALTH CARE PROCUREMENT AND COMPLIANCE WITH INTERNATIONAL ENVIRONMENTAL CONVENTIONS ON CHEMICALS

This conversation hour focused on the UN’s role in pushing the agenda of sustainable procurement in the health sector at an international level. The discussion was moderated by Ms. Lorea Coronado Garcia, Sustainable Supply Chains Specialist, UNDP Istanbul Regional Hub (United States).

Key Messages and Action Points

On why PVC toy regulations should be implemented outside of Europe, Ms. Ruth Stringer, HCWH … “If these toys are not good enough for a child in Europe, they are not good enough for any child in the world.”
> As the primary international organization championing sustainable procurement, the UN should serve as a leader, setting an example through implementation of sustainable practices across the organization. The UN has an invaluable role to play in this regard, to ensure change in the procurement sector for all stakeholders, while at the same time following existing policies and provisions set internationally.

Examples of Good Practice

The main goal of the UN Informal Interagency Task Team on Sustainable Procurement in the Health Sector (SPHS), is to improve the system in a way that environmental impact is reduced through sustainable procurement processes. The SPHS is driven by 3 pillars which strengthen the organization: Normative, Financial, and Operational. It bases its work on international environmental policies, and ensures that steps taken are in support of policies around sustainable procurement.

The main challenge in dealing with mercury is the threat to human health and the environment, when disposed.

In order to achieve the goals of sustainable procurement, SPHS is equipped with other ‘tools’ such as the website savinglivessustainably.org, which serves as a platform for communication and knowledge sharing.

SPHS has also established partnerships with other organizations, such as Health care Without Harm, and together, created a list of chemicals of concern, their effects on the environment and human health.

2.11.5 VIET NAM STRATEGY DEVELOPMENT OF A NATIONAL ACTION PLAN

The main challenge in dealing with mercury is the phasing out or removal of its use within the health sector, particularly within public and private hospitals and medical facilities within Viet Nam. Most of the hospitals follow the rules and procedures as specified within the legal framework of the Action Plan yet they are unable to successfully implement and regulate these policies due to a lack of awareness in the use and misuse of the chemical within their own workplace.

Thus far, the Ministry of Health has been coordinating with various hospitals and medical facilities to educate, train and properly guide the health sector

Key Messages and Action Points

> Banning the export and import of mercury and mercury-based materials is essential, given the potential risk to human health, livelihoods and the environment.

> Phasing-out mercury is a critical issue for not just Viet Nam to address, but all countries collaboratively, to prevent its harmful effects on the health sector, and society at large.

> In Viet Nam, the Ministries of Health and Environment must work closely together to plan, prepare for and take action to store toxic waste across the country.
in recognizing the importance of phasing out and preventing the use of mercury.

The Ministry of Health has been actively tackling the challenges with mercury and mercury-based materials under the current government administration. Last year, the Prime Minister of Viet Nam ratified the Minamata Convention. The Ministry of Health has been collaborating with the Ministry of Trade and Industry to implement the Minamata Convention, and both parties aim to ratify and ultimately implement the convention into local legislation, through a national legal framework. Various other ministries have also been developing their own action plans for their respective sectors. While the Minamata Convention does not require the complete phasing out of mercury, the Ministry of Health is working hard to persuade hospitals, including doctors, nurses and other stakeholders in the field, to completely eliminate the use of mercury, in order to help minimise unexpected spills and improper handling of the toxic waste. Hospitals in Viet Nam have already started to remove the supplies of mercury within their own facilities, recognising the danger the chemical could bring and the toxic waste associated with it. It is hoped that by 2020, the vast majority of hospitals across the country would have followed suit.

2.11.6 CRADLE TO CRADLE DESIGN AND CIRCULAR BUSINESS MODELS FOR THE RECOVERY OF PLASTIC MATERIALS IN HEALTHCARE

This conversation hour was led by Mr. Ingo Walterscheid, CEO of Ecological Forum for Industry Transformation and Transaction (EcoFITT) [Denmark]

Key Messages and Action Points

> There is a need for greater innovation and technology which applies the concepts of circular economy and the cradle-to-cradle approach.

> Stakeholders in the health sector must begin to take on board and support business models that use these concepts.

> The Digital Deposit Plastic Pallet (DDPP) is an example of a good practice which models the possible design of business models in a post-plastic economy.

Examples of Good Practice

At present, Europe, and particularly Denmark is in a waste management crisis, as China has closed down its borders to imports of waste from other countries. In the one year they had to prepare for this situation, the Digital Deposit Plastic Pallet (DDPP) was born. DDPP offers a real circular solution which extends material life and value.

Pallets commonly used are made from either virgin plastics or wooden material, however the DDPP is made from recycled plastic.

DDPP has two key features: (1) it has a digital mark called RFID which allows the tracking and tracing of both material and the DDPP; and (2) plastics recycled are from fast-moving consumer goods.

DDPP allows the owners to use it as valuable digital logistics tools by giving them the ability to track and trace it. In addition, using reusable plastic pallets instead of wooden pallets, can result in a saving of up to 350,000 single-use wooden pallets every year. These reusable pallets are projected to be able to be reused and recycled for an average of 20 times. Furthermore, it saves up to 50 percent weight, volume and cost compared to single-use wooden pallets. DDPP serves as an example of good practice of applying circular economy.

2.11.7 PROSPECT AND SUSTAINABLE PRODUCTION OF BIODEGRADABLE PLASTICS FROM RENEWABLE RESOURCES

This roundtable discussion was led by Dr. Sudesh Kumar, Researcher in the School of Biological Sciences at the University of Sains Malaysia.

Polyhydroxyalkanoates. Meal worms have been used to successfully create polyhydroxyalkanoates, the component needed to produce resin, an essential ingredient in making biodegradable plastics. Meal-worms are fed, their fecal pellets are collected, and extracted as resins in making biodegradable plastics. Through this method, biodegradable plastics can be produced without using chemical processes and reactions.

See Session 2.8 for a detailed explanation of this innovation, and the process behind it.
2.11.8 PVC-FREE BLOOD BAG

The session was moderated by Ms. Lena Stig, Former Project Manager, PVC free Blood Bag, currently in the capacity with sustainable plastic use at Swedish EPA (Sweden). This session presented insights from the PVC-free blood bag study that took place from the year 2011 to 2017. The objective of the project aimed to procure more sustainable PVC blood bags. An important aspect of the project is its contribution to an increased awareness and demand for PVC-free Blood Bag in Sweden. According to Ms. Lena Stig, blood bags for red blood cells are made of PVC, that use about 30 to 40 percent of a plasticizer to soften the bags. The harmful toxins of plasticizer can transfer from the bag into the blood and cause harmful effects.

Key Messages and Action Points

> There is a need for suppliers and manufacturers to produce more sustainable PVC-free blood bags.

> With a successful finalization of the PVC-free blood bag project, Ms. Stig presented to the participants that key stakeholder involved in the project are now looking for additional multi-stakeholder engagement and organizations that are interested to provide support with financial and technical support for the project.

> The project currently brings together key stakeholders from the United States of America and Israel. The intention for the second phase of the project is to encourage the supply chain in Europe, and if feasible, globally, to produce more sustainable PVC-free blood bags.

2.11.9 CHALLENGES IN INTRODUCING ECO-INITIATIVE MEDICAL WASTE TREATMENT TECHNOLOGIES

This conversation hour was led by Mr. Jeff Squalli, CEO and President of ECODAS (France).

ECODAS aims to sustainably reduce regulated medical waste without doing further harm to the environment. It follows a sustainable treatment cycle which includes: loading, shredding, heating, sterilisation, cooling, draining and unloading. While autoclave machines only perform sterilisation through steam, ECODAS machines shred and sterilise infectious waste continuously in an enclosed machine. ECODAS machines accept not only regulated medical waste but also other wastage from agro-food, slaughterhouses, seaports and airports. With every machine cycle, there is an estimated 80 percent volume reduction. Unlike with autoclaves, which require several hours to reach a sterile condition, the cycle on ECODAS machines happens as fast as one hour, during which time ordinary waste is also produced. Despite the higher cost of these machines, they are estimated to last up to 30 years compared to autoclaves which work for approximately 5 years.

Key Messages and Action Points

> Autoclave machines developed as a temporary solution to the environmental problems caused by incineration, which releases smoke and ashes, and increases the carbon footprint.

> Small to medium sized hospitals cannot afford ECODAS machines; consequently, many still invest in cheaper, more unsustainable means of disposing of their waste. There are also regional and remote places around the world which do not have the means to know other possible ways to treat trash sustainably.

> While there are numerous ways to dispose of and treat waste, it is ultimately up to the individual, community or sector. Balance and discipline are needed to achieve an environment safe from all the toxic and hazardous wastes produced from everyday life. Most importantly, there is an urgent need for greater awareness raising amongst global leaders, other organizations and the youth, in order to attain collective effort in creating change.

“Even if we reduce our waste, it’s still too much, this is why we need start with ourselves.” Mr. Jeff Squalli, ECODAS

“The problem with people is that when they’re used to things that are not working, they just let them be.” Ms. Susan Wilburn, HCWH

2.11.10 ACCREDITATION: STANDARDS IMPLEMENTATION ENABLING SUSTAINABLE OUTCOMES IN HEALTHCARE WASTE MANAGEMENT
This session was moderated by Mr. J. Andrew Maddigan from Accreditation Commission form Health Care International. Mr. Maddigan presented a discussion on the standards implementation enabling sustainable outcomes in healthcare waste management. This discussion focused on the eligibility requirements of pharmacies that are applicable to AIS inspection for sterile or non-sterile compounding if the eligibility requirements are met. This session provided principles governing the ACHC inspection services for compounding during the inspection, ACHC determines whether the pharmacies are compliant with AIS inspection criteria. The moderator provided a step by step procedure of the pre-inspection process of pharmacies. Mr. Maddigan talked through step by step procedure of the pre-inspection process of pharmacies. The discussion provided understandings of the inspection process and the post inspection process.

**Key Messages and Action Points:**
> Implementation of policies, safety practices, and procedures are necessary for reducing the harmful effects of healthcare waste.
> To reduce healthcare waste, it is important for inspections to take place.

### 2.11.11 BEIJING ZERO WASTE

This roundtable discussion was led by Dr. Mao Da, Co-founder of the China Zero Waste Alliance (CZWA).

The session focused on the problems in medical waste management in Beijing, China and the possible effects of recycling and incinerating the polyvinyl chloride (PVC), which is toxic for human health and the environment. China produces over 520,000 garbage bags a day. Using an incinerator releases toxic gases that harm people and the planet. The levels of hazardous and medical waste incineration in China is higher than required levels of the EU. The levels of dioxin concentration in the soil have also been increasing. Involved stakeholders are now pushing for labels on PVC to inform individuals which products contain DEHP, stating that it is not suitable for liposoluble medicines, newborns, preadolescent boys, and pregnant or breastfeeding women. PVC was also found to be very prevalent in 44 hospitals in Shijiazhuang. An estimated 33.7 percent of the departments do not segregate their medical waste, and only an estimated 6 out of 21 pediatric departments contain PVC-free products.

Beijing Zero Waste is advocating for the mandatory separation of medical waste and municipal solid waste by 2020. Waste has been categorised into four types: household waste, biodegradable waste, recyclables and other types of waste. Hospitals must be encouraged to adopt stronger regulations for injection bottles and bags. Community outreach will also be conducted to raise awareness about medical waste management.

> "Incrinerating medical waste is the loophole in the whole procedure." Dr. Mao Da, China Zero Waste Alliance

### 2.11.12 BLOCKCHAIN IN THE HEALTH SECTOR IN MOLDOVA

This conversation hour was led by Ms. Inga Podoroghin, a Programme Specialist at UNDP Moldova.

**Key Messages and Action Points**
> Blockchain is a continuously growing list of transaction records which are linked and secured by cryptography. All entities within the network will have a copy of the blockchain, and every time the chain is modified, the resulting new information is appended to all existing copies with each entity. The design ensures that tampering with a previous block is not allowed because of its links to other blocks, and the need to cross-check data integrity with other members of the network. This feature makes blockchain a virtually incorruptible decentralized system.

> Benefits of blockchain technology include: transparency, distributive qualities and a lack of central controlling entity; implementation of blockchain technology also does not pose a problem of budget, as the system can be constructed with only a few computers and free software.

> One of the biggest challenges with using blockchain technology in the health care sector is resistance to it from various involved stakeholders. Where healthcare sectors have elements of corruption, a tool deemed incorruptible, is likely to be unpopular. In addition, manufacturers would challenge any potentially disruptive tool in the market that could
UNFPA recently visited the staff at Erdenetsoot Hospital in Bayanhongor aimag.
Background

The health care sector accounts for millions of jobs worldwide. However, fundamental human and labour rights are not always respected. Various research studies have shown that compliance with international human and labour standards often triggers improvements in productivity and economic performance. The Asia Forum 2018 offered a platform for top technical experts, practitioners, doctors, academics and policy makers to engage in discussions with international organisations on ethical procurement practices and the monitoring of human and labour rights in the supply chain.

Through panel discussions, presentations, trainings and campfire sessions, delegates had an opportunity to debate working conditions, safety, and occupational health in the manufacturing sector, the monitoring of labour and human rights, the implementation and enforcement of ethical standards, as well as how to better integrate social sustainability in the global health sector. The Forum offered insights into how companies can grow opportunities for all employees. Delegates also explored success stories on mainstreaming gender equality in the workplace.

DIVE INTO DAY 3 STATISTICS

**GOOD PRACTICES**

16

**SPEAKERS**

16

**ORGANIZATIONS**

16

**FREQUENCY OF SDGs COVERED IN GOOD PRACTICES**

**SPEAKERS EXPERTISE**

21% Procurement

17% Resource Efficiency

12% Gender Equality

9% Waste Management

7% Transportation

5% Chemicals

2% Packaging

2% Water

**TYPE OF GOOD PRACTICES PRESENTED**

PROJECT

59%

TOOL

22%

SUCCESS STORY

19%

**GEOGRAPHICAL COVERAGE THROUGH GOOD PRACTICES**

20% EUROPE

13% GLOBAL

47% ASIA
3.1 SOCIAL SUSTAINABILITY IN THE HEALTH SECTOR: HOW TO IMPROVE SOCIAL CONDITIONS ALONG THE SUPPLY CHAIN OF HEALTH COMMODITIES AND SERVICES

**PANEL BACKGROUND**

Social sustainability in the health supply chains has received growing attention in the recent years, due to growing awareness on equity, health and safety, education, child and bonded labour and ethical practices in corporates. Identification of the key metrics of social performance and establishment of methodology for their measurement are vital for successful assessment of the social sustainability of supply chains. The panel presented various enablers and the inter-relationships among them in adopting social sustainability measures along the supply chain of health commodities and services. Panellists provided insights to the key stakeholders from the health sector on how they can tackle the greatest challenge, and ultimate goal for sustainability, and shift from the sole focus of reduction of adverse impacts to the increase of the positive aspects of their practices.

Moderated by Dr. Amitrajit Saha, Team Leader of the HIV, Health and Development Team for Africa at the UNDP Istanbul Regional Hub (Turkey), this panel highlighted the importance of social sustainability in promoting health equity, and safety and ethical practices.

**Speakers:**

- Dr. Asher Hasan, Founder & CEO of doctHERs and Founder of Naya Jeevan (Pakistan)
- Mr. Sanjay Kumar, General Manager, DFCCIL, Ministry of Railway, Government of India (India)

**Key Messages and Action Points**

- Innovative technologies in research and analytics offer significant advantages to improve workforce welfare and productivity.
- With the advent of the digital age, Technology such as Big Data Analytics and App development is key in determining the needs for social sustainability. Data analytics to forecast needs and demands, facilitates flexibility and agility in the work force, consequently optimising their productivity.
- Transparency of institutions through monitoring and evaluation initiatives is critical.
- Gender sensitivity challenges should be overcome to achieve social sustainability. There is an opportunity gap as well as wage gap that hampers women from optimizing their productivity. There is an increasing urgency for steps to address these challenges.

To address the issues of compliance, there is a need to unify codes of conduct and standards as well as ensure the inclusion of all stakeholders particularly the vendors and laborers in discussions of issues pertaining to social sustainability.

- Governments, through legislators and chief executives, play a critical role in social sustainability.
- The development and implementation of capacity-building opportunities as well as unified standard codes create an avenue for social sustainability in communities and institutions.
- Communication and collaboration of stakeholders across sectors is essential.
- While compliance to standards is essential to social sustainability, there needs to be a shift in the current paradigm from a “compliance mindset” to “performance mindset” where stakeholders are allowed to create endeavours that enable social sustainability to be practiced in their institutions.
- Models and frameworks that allow collaboration between stakeholders as well as facilitate feedback and monitoring, enable the development of efforts that foster social sustainability in communities.

“Companies are starting to care for the people in their supply chain. It is the job of management to take care of them.” Mr. Sanjay Kumar, Government of India

3.2 ETHICAL PUBLIC PROCUREMENT: HOW INTEGRATION OF SOCIAL CRITERIA IN PUBLIC CONTRACTS CAN HELP IMPROVE LABOUR RIGHTS

**PANEL BACKGROUND**

The market for health commodities is global, and is increasingly being outsourced to minimise costs. Unfortunately, there is evidence that such outsourcing is harming fundamental labour rights, and consequently the health of populations elsewhere. Ethical procurement does not have to mean more expensive, nor does it mean compromising on quality. It seems paradoxical to provide health care using goods and services that may harm health because they fail to protect fundamental labour rights. However, because the levels of spending are so vast in health care, the medical community can change this to impact the global trade significantly, and conse-
This panel discussion was moderated by Mr. Robert Bernardo, a Policy Specialist at the UNDP Istanbul Regional Hub. The session featured presentations by

> Mr. Dennis S. Santiago, Executive Director of the Philippines Government Procurement Policy Board, Technical Support Office (the Philippines)
> Dr. Pauline Göthberg, National Coordinator for Sustainable Public Procurement, Swedish County Councils (Sweden)

**Key Messages and Action Points**

> There is a lack of consensus on what the sustainable criteria in public procurement should be; NGOs could contribute significantly to this niche area, advancing the discourse on sustainability criteria.
> It is necessary to ensure transparency of sustainable supply chain data, and sustainable procurement criteria in order to facilitate the market players’ ability to provide the supplies needed.
> There is a need for stronger, more integrated approaches to addressing these issues, as ethical standards do not solely reside in the health sector – other sectors are also involved in the matter.
> NGOs can play a critical role in transparency, checking up on working conditions in factories.
> Multi-stakeholder cooperation is essential in order to help build capacity and determine the state of the market. Additionally, cooperating across countries increases leverage and decreases duplication of audits thereby minimising costs.
> Collaboration must also include the verification and sharing of audit information, and supported by the move for open data; it is however necessary to identify who would champion and implement such initiatives, and the extent to which countries as well as markets, are open to sharing such data.
> Key barriers to ethical public procurement include challenges in implementation and monitoring of ethical standards; budget, data, audit and planning processes also contribute to this.
> Stakeholders should identify prioritised risk areas for procurement, conduct risk analyses, and then draft and implement action plans to influence or change these risks among affected populations.

> When unethical working conditions are detected, it is important to conduct an internal check to determine whether the procurement body has sufficient resources, time and competence on what to do.

**Case studies**

**GOVERNMENT OF THE PHILIPPINES**

**Promoting Green Public Procurement Policies**

Mr. Dennis S. Santiago, Executive Director of the Philippines Government Procurement Policy Board, Technical Support Office (the Philippines), dennis.s.santiago@gmail.com

The significant projected growth in the health care market in the Philippines is due to aging markets, emerging market expansions, new advances in medical treatments and rising labour costs. An estimated one fifth of the cost of surgical instruments is outsourced to other countries. Child labour and illegal working hours are common in medical outsourcing. In many hospitals, there is unfair remuneration among janitors, and administrative services personnel, as well as outsourced human services. Within the Philippines Ministry of Health, there is a lack of awareness and monitoring to track contracts guided by sustainable procurement.

In 2003, the Philippines adopted a Procurement Reform Act to combat corruption. The country recently launched the Philippine Green Public Procurement Roadmap (2013-2016), which aims to include environmental criteria in the procurement process. While the initiative began years ago, it was only launched in 2017, due to an unprepared market. Existing challenges include implementation and monitoring. Violations continue due to market gaming, where documents are faked or submitted but the policies are not implemented. While requirements that include environmental considerations are already in place, and social aspects of sustainability are embedded in legislations and standard procurement manuals, the implementation of such initiatives is a recurring challenge. NGOs continue to play a minimal role in the procurement process, another area which could be improved upon.

**GOVERNMENT OF SWEDEN, SUPPLIERS / MANUFACTURERS IN MALAYSIA**

**Ethical Public Procurement Efforts**

Dr. Pauline Göthberg, National Coordinator for Sustainable Public Procurement, Swedish County Councils, Sweden, pauline.goethberg@ssl.se

In Sweden, the ethical procurement efforts began years ago, but were only launched in 2017. The Roadmap (2013-2016) aims to include environmental criteria in the procurement process. In the health sector, the implementation of such initiatives is a recurring challenge. NGOs continue to play a minimal role in the procurement process, another area which could be improved upon.
In order to ensure ethical public procurement, the Swedish government co-finances audits in procurement. Prior to this policy, Sweden encountered controversies regarding sourcing surgical instruments from suppliers that have unjust labour practices (e.g. child labour).

An audit conducted by the Swedish government on their supplier in Malaysia, revealed that the factory was employing migrants working for 45 consecutive days for more than 145 working hours per month. Through this audit, the Swedish government was able to work with their Malaysian supplier in fixing these labour practices. Through the proactive role of the Swedish government in the audit process, ethical public procurement practices were restored. This case revealed the necessity of follow through in the auditing process, to ensure public procurement standards are upheld.

“Various industries are at different levels of maturity in terms of transparency and sustainability practices, which public procurers must keep in mind when dealing with these players, and demanding certain items in their sustainable procurement criteria.” Dr. Pauline Gothberg, Swedish County Councils

3.3 EMPOWERING WOMEN IN GLOBAL HEALTH SUPPLY CHAINS

PRESENTATION BACKGROUND

One of the main goals of the SDGs is to achieve gender equality and empower all women and girls around the world. With this in mind, the post-2015 development agenda offers an excellent opportunity to drive lasting change for women’s rights and equality. Women represent 60 to 80 percent of global manufacturing labour and while supply chains give them access to the formal economy, social security and income, they still often remain vulnerable to human rights violations, violence and abuse. Undoubtedly, there is a strong business and community development case for supporting women’s rights. Promoting gender equality is not only a matter of human rights but also a fundamental condition for sustainable social and economic development. Ensuring that women and girls have full and equal opportunities for leadership at all levels of decision-making in political, economic and public life should be a priority.

Key Messages and Action Points

- From the outset, a human rights approach should be at the center of efforts to address the gender gap in the global health supply chain, in order to ensure that the broad spectrum of human rights meaningful to women are upheld.
- Acceptability of services and innovations is one of the biggest challenges in gender empowerment in the global health supply chain as it challenges well-established sociocultural norms.
- An important, but often overlooked aspect of women’s empowerment is actual monetary remuneration and ensuring that women have the power to steer the direction of their own empowerment.
- Ensuring that women and girls have full and equal opportunities for leadership at all levels of decision-making in political, economic and public life should be a priority.
- The position of women across the supply chain should be identified; current concerns should be considered, and interventions should then be created which take into account all women.
- Women are not solely recipients of health services, they are also change-makers.
- Frontline training of women should be complemented with structural changes at the back end of operations.
- When thinking about gender empowerment and sectoral development, it is critical to think in terms of the long view. It is important to remind stakeholders, particularly funders, to look at the “big pictures”, and to be more patient with the outcomes.
“Whenever anyone asks me what I am doing, I always say: ‘Women are organizing.’” Dr. Sylvia Claudio, University of the Philippines

“When you empower one woman, it’s going to empower her entire generation.” Ms. Nida Shehzad, Sehat Kahani

### 3.4 PROMOTION OF PARTICIPATION OF SMALL AND MEDIUM ENTERPRISES IN SUSTAINABLE HEALTH SUPPLY CHAINS: ENSURING SUPPLIER DIVERSITY, RELIABILITY AND SUSTAINABILITY

**PRESENTATION BACKGROUND**

As the global sustainability movement gains pace and customers become more attuned to the social and environmental dimensions of purchasing decisions, it has become increasingly clear that narrow conception of costs will no longer measure business competitiveness. Instead, suppliers and manufacturers that reflect externalities in their cost structures and manufacture products in a more environmentally friendly manner generate greater value for their customers and communities and send a clear signal of their commitment to operating responsibly. In the transition to sustainable health procurement, it is vital to ensure suppliers diversity. Maintaining a level playing field across a diverse range of suppliers and manufacturers requires a gradual, tailored approach which takes account of different circumstances and contexts and ensures equal opportunities. This session was relevant to all those active in the health supply chain: from manufacturer to purchaser. Presenters covered the benefits of ensuring actions which are inclusive, allowing small and medium enterprises to meet new standards. It also included supplier development and how procuring organisations can engage to learn supplier challenges, help suppliers identify opportunities, prepare and improve.

This session was moderated by Mr. Ian Milimo, Assistant Resident Representative / Poverty Reduction UN House (Zambia) and featured presentations by:

- Ms. Blerta Cela, Deputy Country Director, UNDP Ukraine
- Mr. Robert Matthews, Contracts Manager, Health Technology Centre, UNICEF Supply Division, Denmark
- Ms. Wendy Rayner, National Sustainability

India’s immunisation programme, a women-led programme, adopted an electronic vaccine intelligence network (eVIN), which combined a mobile and web-based application, with a dedicated human resource network, standardised processes and a low-cost device for remote temperature monitoring. An estimated 8,000-9,000 female cold chain handlers have been trained on eVIN.

Sehat Kahani is a female-focussed health provider network of 1,200 female doctors that works to deliver quality health care solutions. Thanks to this digital health platform, 15 e-health clinics have been established and 11 awareness campaigns conducted. Through these, over 55,000 patients have been treated via video consultation, over 600,000 beneficiaries were reached via HealthEducation, and an estimated $135,000 revenue was generated in 2017.

doctHERs is a novel, digital health care platform which connects female doctors to health consumers in real-time, while leveraging online technology. The platform helps address the challenge faced by underserved communities in accessing quality health care, as well as promotes inclusive employment for women. Through its network of 8 telemedicine centres across Pakistan, doctHERs has impacted over 25,000 lives. In February 2017, doctHERs shifted from the community health model to focus on target populations affiliated with the corporate sector including underserved/uninsured stakeholders in corporate value chains (such as smallholder suppliers, distributors, and retailers).
Key Messages and Action Points

> Exclusion of SMEs and weaker competition in the market are characteristics which need to be eradicated if sustainability efforts are to be effectively adapted and implemented.

> In order to improve sustainability efforts of businesses and economic movements involved in the health sector, SMEs must be recognized as they promote not only diversification of supply, but also serve as a key to improve service provision to the varying stakeholders through e.g. providing jobs for the marginalized and training individuals to be aware of the health sector movements.

> There are numerous requirements being implemented which makes it more difficult for SMEs to continue participating in the health sector. Stakeholders must call on organisations which are open to simply these requirements, lessen external discrepancies such as corruption, and offer useful aid to these SMEs to help them address their challenges, be it financing or structural. This would enable SMEs to advance as key stakeholders in promoting sustainable markets for health sector processes.

> Aid is only aid if it is useful. High-income countries must give equipment, goods and aid to other countries in a way that is responsible and useful, in order to prevent the risk of negative impacts.

Examples of Good Practice

In 2011, there was a nutritional crisis in the Horn of Africa. There was a need for a response and there was a high dependence on flying goods into the affected countries. A key shift took place from international to local suppliers for RUTFs. By 2017, the supply was 47 percent local, and nothing was flown in. This shift from international to local RUTFs, not only increased productivity and opportunities in the region, including various social benefits such as increased production capacity, employment and turnover in companies; but also, indirectly reduced carbon emissions due to the shift from air to local transport, as well as freight costs.

The Scottish Government focuses critically on innovation, which is key for SMEs. The government’s SMEs budget is an estimated £80 million. SMEs are recognised for their provision of local services and expertise, as well as the direct and indirect local support. In addition, SMEs are investment ready, can bring innovation, and can respond better to requests. The NHS actively seeks the support of SMEs for projects such as the remanufacturing of medical equipment and products. The government has recognised that engaging with SMEs more will play a significant role in helping close the loop in the circular economy, by filling the gaps that cannot be filled by the larger MNCs.

The medical supply crisis in the Ukraine poses a threat to patients, and their receipt of critical medication. Various problems are compounding the situation including: political turmoil, conflict, inefficient consumption, waste, “Soviet” regulations and institutions, a lack of data on sustainable production practices, corruption, monopolies, and high medicine prices. The current market for medicines is centred around large companies. The country has a strategy in place to assist in SME development, however little is being done to implement it. There has also been a strong civil society movement to improve access to medicines through the elimination of corruption. Through these efforts, there has been an increase in production and savings following the engagement of new manufacturers. Prices have also decreased, and new medicines have been allowed to be introduced. There is a need for continued capacity-building to develop sustainable standards and criteria in the procurement and production of medical supplies. While a centralised procurement agency has been established, greater policy-level action is needed to address issues such as waste management. There is also a need for a cultural shift and the use of data and incentives, to ensure these practices are adopted by the public. Stakeholders must also engage more strongly with the business management sector, which has become an integral part of the network in ending corruption. Ukraine demon-
strates the importance of being able to battle corruption and monopolies, in order to improve citizens’ access to medicine.

“Unless you deal with corruption, you cannot really start on sustainable development.” Ms. Blerta Cela, UNDP

“Let’s not make a section for sustainability. Let’s make it a core to all procurement.” Ms. Wendy Rayner, NHS Scotland

3.5 IMPACT MANAGEMENT AND THE BUSINESS CALL TO ACTION (BCtA) IMPACT LAB WORKSHOP

TRAINING BACKGROUND

BCtA has been providing customised impact measurement support to over 20 companies in agriculture, education, energy, health, and housing sectors globally. From social enterprises to multinationals, BCtA helps their members collect data using mobile technology to enhance product and service development, improve marketing, increase operational efficiency and improve their communication with external stakeholders. The newly created Impact Lab, offered by BCtA, assists inclusive businesses better measure and manage their social and environmental impact. It was built on BCtA experience working with over 20 companies and covers the full impact measurement cycle from defining company’s vision and goals; identifying the right tools for measurement; designing the impact framework; sourcing and collecting data; and analysing company’s impact.

This training session was facilitated by Ms. Nazila Vali, Knowledge and Partnerships Lead, at the Business Call to Action, UNDP Turkey.

Key Messages and Action Points

> Businesses are already involved in assessing the impact of their goods and services provided. The conventional view is to present these for external stakeholders, however, impact management should also be used within a company to inform its own strategy as well.

> While companies have internal and external drivers, they must adjust to customer need.

> It is important to consider the impact of the company in light of other goods and services available in the market that fulfil the same need.

Examples of Good Practice

The company’s impact was measured not only in terms of economic value, but also in line with the sustainable development goals, including those related to health and well-being, gender equality, reducing inequalities, and water and sanitation. The company had a greater impact on some of these goals than others. The impact of the company was measured bearing in mind other businesses providing the same goods and services, and in the absence of businesses, government programmes offering the same goods and services.

3.6 WATER-ANTIMICROBIAL RESISTANCE-HUMAN RIGHTS: A NEW NEXUS-APPROACH TO ADDRESS A COMPLEX CHALLENGE?

CAMPFIRE SESSION BACKGROUND

Linking Human Rights to pharmaceuticals is not
only a question of health and access to medicines. Pharmaceutical manufacturing itself can create Human Rights issues. While industrial water consumption can threaten local populations’ access to water, wastewater from pharmaceutical production often contains chemicals and active pharmaceutical ingredients, polluting ground and surface waters and promoting, e.g. antibiotic resistance. This affects both quantity and quality of drinking water as well as water for farmland irrigation. Thus, the impacts are neither limited to safe drinking water and health, but also affect ecosystems and people’s livelihoods. A healthy environment, including access to safe drinking water, is a prerequisite for full enjoyment of a wide range of Human Rights. Additionally, by protecting Human Rights people can be empowered to claim their right to a safe and sustainable environment. The case of antibiotics clearly underpins the two sides of the problem with safe water, sanitation and hygiene being key factors for health and containment of infectious diseases, and antibiotic pollution threatening water supply and promoting resistance.

The central theme for the session was the interdependency between a healthy environment and Human Rights with a special focus on water and antibiotics: How can this approach stimulate virtuous developments within the health sector, from regulatory to purchasers and suppliers? How can access to affordable medicines be unified with the Human Rights of people living nearby production sites or sharing the same water resources?

Moderated by Mr. Nicolai Schaaf, Programme Officer, Stockholm International Water Institute (Sweden), this campfire focussed on the interdependency between a healthy environment and Human Rights with a special focus on water and antibiotics.

3.7 THE LANDSCAPE OF INCLUSIVE BUSINESS MODELS OF HEALTH CARE AROUND THE WORLD: BUSINESS MODEL INNOVATIONS

PRESENTATION BACKGROUND

This session aimed to inform the health care ecosystem of the opportunities in the health inclusive business space and suggestions for catalysing the growth of innovative business models in the health sector. While the innovative models have shown enormous potential, only a few have gone to scale and thereby maximised impact. The panelists presented their business model and discussed the ecosystem in which they operate including regulatory issues, value chains, support services, as well as enterprise-level issues. This enabled stakeholders to gauge what is needed and examine what role they can play to improve the ecosystem.

This session was moderated by Ms. Nazila Vali, Knowledge and Partnerships Lead, at the Business Call to Action, UNDP, and featured presentations by:

- Dr. Agbor Ashu, Medical Director at Gifted Mom (Cameroon)
- Dr. Eduardo Banzon, Principal Health Specialist, Asian Development Bank (the Philippines)
- Dr. Camilo Gonzalez Ruiz, Innovations & Pay er’s Solution Manager at Sanofi (Colombia)
- Ms. Nida Shehzad, Digital Innovation Lead at Sehat Kahani (Pakistan)

Key Messages and Action Points

- Inclusive business refers to engaging populations to improve working conditions and outcomes, such as health, which strongly contribute towards the SDGs.
- The private sector has a significant and expanding role to play in ensuring inclusivity in the workplace.
- Businesses should consider joining international networks and coalitions in order to be more inclusive in their operations and to exchange best practices.
- Public and private entities should both take advantage of the ADB’s various interventions for inclusive businesses as a source of financial and technical assistance.
- Mobile phones and its widespread use in the general public (compared to laptops and computers) across the globe make it an appropriate avenue for inclusive businesses to use, in order to maximize access to products and services, particularly in the health care sector.
- Measuring tools for inclusive businesses are available and should be used by companies as a way of monitoring their progress.

Examples of Good Practice

Sehat Kahani

In Pakistan, Sehat Kahani helps transform clinics into telemedicine clinics, to enable patients in remote and disadvantaged areas, to connect to online doctors. Patients are also given preventive services and educational lessons, through awareness campaigns. The organisation has partnered with various pharmaceutical companies, government agencies and universities in Pakistan to assist in delivering successful preventive health campaigns. As there is no regulatory policy on telemedicine, the WHO framework is used. The organisation is in the process of developing an app which will allow people to
Sanofi offers an innovative business model, pairing behavioural interventions with medication, in order to improve health outcomes. The company has three key priority areas: 1. Delivering innovative medicines and vaccines; 2. Developing new business models to improve access to health care; and 3. Strengthening primary health care systems. Through AI, solutions are found for services such as identifying presumptive patients and tracking a diagnosed population. The data generated by the company, is not handled by the company, and rests primarily in the hands of the patients.

The GiftedMom enterprise emerged in response to the high rates of maternal and infant mortality from preventable causes. The objective of the initiative is to provide essential prenatal health services to reduce maternal and infant mortality. The organisation leverages mobile phones, due to the high rates of usage across society. Pregnant mothers receive automated SMS reminders for appointments, as well as messages on basic pregnancy information. Pregnant mothers also have access to a hotline to consult with doctors. The App is also able to track users lost to follow-up. For mothers in a higher-income bracket, there is a paid option for the use of the app. GiftedMom has partnered with network operators through a co-share system. The organisation ensures that it follows WHO guidelines for women and infant health.

The Bank has adopted an inclusive growth business model. Through this business model, the ADB provides financial assistance to countries and enterprises to help scale up initiatives which offer innovative inclusive business interventions. The ADB advocates to governments to pilot innovative projects which the Bank can finance. For example, the Bank provided a loan to Shanxi Province, China, to help improve the agricultural value chain and inclusive business. The Bank also looks to find grants and financing through the private sector, based on a scoring to assess whether the company is an inclusive business. The Bank is also required to score businesses on the extent to which gender inclusion is mainstreamed.

**As a pharmaceutical company, we need to think that the drug is not enough, only 15 percent of health is because of medicine and 85 percent is because of the delivery model and good adoption of healthy lifestyles.**

Dr. Camilo Gonzalez Ruiz, Sanofi

**“Unlike laptops and computers which are only accessible by the well-off, phones decentralize access to information and services.”**

Dr. Eduardo Banzon, ADB

Sanofi identifies as a priority that

3.8 REDUCING WORKPLACE INEQUALITIES AND ACHIEVING THE SDGs IN THE HEALTH CARE SECTOR

It is estimated that around 40 million new jobs need to be created per year until 2030, just to keep pace with the growth of the global working age population. The conditions for some 780 million women and men who are working but not earning enough to lift themselves and their families out of poverty, will also need to improve. This session offered insights into a broad range of issues related to the reduction of inequalities through the implementation of the SDG Agenda. This encompassed a spectrum of topics from opportunities for a work that is productive and delivers a fair income, security in the workplace, and social protection for families. The session also discussed better prospects for personal development and social integration, freedom for people to express their concerns, organise and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.
Key Messages and Action Points

> The productivity of employees and workers in the Philippines, and other developing countries are subpar, compared to other countries due to poor workplace conditions and benefits.

> In order to establish a healthy workplace, employers must consider both the physical and mental environment of the workplace.

> With regards to the physical work environment, companies should pay attention to various factors including: providing a violence and aggression-free workplace; considering the environment in and around the workplace; and looking at the sanitary food standards in the workplace.

> Companies should take into account the role which natural lighting and plants can play in encouraging a positive workspace.

> Companies should equally consider the mental work environment for employees, including the workplace culture, trust between employees, disability practices, and discrimination in the workplace.

> There should always be an emphasis on the importance of discussions among the employers and employees, with the government acting as the mediator (tripartism) in order to resolve issues such as minimum wages and other workplace policies, both at the local and international levels.

> Employers and employees should both be consulted when governments plan to set policies regarding the standard wage regulations of the country.

> Work contracts can serve as limitations and stressors for workers, as companies often tend to prefer to keep workers on short-term contracts in order to increase flexibility and maximise savings for the company.

> Companies must work harder to understand why employees leave their jobs; this will provide some insight into their work environment. In Asia, this is particularly critical, as employees do not usually tell employers the real reason for leaving.

> Companies must invest more in research and deploying products to improve health outcomes of employees.

> Multi-stakeholder initiatives should be established to encourage companies to address inequalities in the workplace.

> Employees must be provided with information on finding networks and support systems to assist during stressful times and to help in tackling daily workplace challenges.

Examples of Good Practice

The workplace is often home for the poor; where they live is where they work. They try to live and survive while at the same time providing for their families. Most of these are women. ICMF operates in the Philippines, particularly in the regions and provinces where poverty is most rampant. An estimated 22 million Filipinos are considered ultra-poor, living on less than $0.50 per person per day. These individuals cannot be productive if they are unhealthy. At the same time, their workplace must be healthy, since where they live is often where they work. The local church is an important actor when it comes to affecting change among the ultra-poor in the Philippines; as such, the ICMF collaborates closely with pastors in the local communities. Through its Ready to Eat Nutrition programme, ICMF helps address malnutrition in the Philippines.

“Health improvement for the poor is the ultimate test of a responsible and responsive middle-income country.” Dr. Milton Amayun, International Care Ministries Foundation

“The ultrapoor cannot participate in economic production if they are unhealthy; diseases of poverty keep the poor in poverty.” Dr. Milton Amayun, International Care Ministries Foundation

The Philippines is the largest exporter of coconut...
products, contributing an estimated 1 percent of the country’s GDP, and involving over 3 million Filipinos in the industry. There is unequal distribution of wealth from the vast coconut industry in the country. The value of coconut changes depending on where the farm is located, as prices in Quezon province would be higher compared to those in Mindanao. This also changes depending on the distribution of the land and other factors in the value chain. It is necessary for stakeholders to consider various aspects of the value chain, in order to be more competitive with other larger coconut industries. Coco Veda focuses specifically on health, aiming to contribute to SDGs 3 and 4, through the production of healthy, sustainable coconut products. The company focuses on producing sustainable, hand-made, cold pressed virgin coconut oil, and in the past three years, has developed over one hundred products.

Link to presentation: Reducing workplace inequalities and achieving the SDGs in the health care sector

3.9 ENSURING OCCUPATIONAL HEALTH AND SAFETY IN THE HEALTH CARE MANUFACTURING INDUSTRY

PRESENTATION BACKGROUND

A healthy workforce is critical for sustainable development on a national, regional and global level. The classic approach to ensuring health and safety in the workplace has depended mainly on the enactment of legislation and inspection of workplaces to ensure compliance with health and safety standards. While this approach has been effective in controlling many specific occupational hazards, it has not been instrumental in the past several decades, particularly in developing countries. This training session offered guidance on how to manage and prevent different aspects of health and safety in the workplace.

The presentation was moderated by Ms. Susan Wilburn, the Director of International Sustainability at Health Care Without Harm, US, and featured interventions by Dr. Rokho Kim, Coordinator of Health and Environment, at the WHO Regional Office for the Western Pacific.

Key Messages and Action Points

> Occupational health and safety is important because workers constitute a significant proportion of any population. A healthy workforce is a prerequisite for sustainable development and social wellbeing.

> If environmental health and safety practices are not implemented, risks include: workers’ loss of health and wellbeing, loss of productivity and profit for the company, and loss of solidarity and equity (poverty) for the community. Organisations must implement programmes which would provide development trainings and aid to workers, focussing on aspects that may improve workers’ wellbeing, such as supplies required for them to wear, or ensuring healthier food is served in the workplace. Adopting such good practices, will automatically improve well-being and behaviour of employees’ which in turn would reduce absenteeism, and ensure active production and functioning of businesses contributing to the health sector.

Hazards in the workplace. APIs have a serious impact on the human body, and are known to affect the central nervous system, renal and cardiovascular systems, liver and gastrointestinal systems and many others. There have also been cases of allergic reactions (sometimes severe), vitamin deficiency, and fungal infections due to APIs.

> Hazards in the health sector workplace are not limited to API exposure. There are also cases where latex gloves cause hazards such as allergies on the skin. Their powder can also be inhaled and cause occupational asthma.

> As the toxicology of many materials is limited, companies must be careful in the development and creation of new materials. Workers’ levels of exposure to hazards must be kept as low as possible, or eliminated from the outset. Silica from mining causes lung diseases. This silica is being used in the production of solar panels, which also uses cadmium and arsenic, all harmful chemicals. There is a need for good occupational hygiene to combat the hazards from these substances. Installation of solar panels should also be properly monitored, electricity should be well controlled, and disasters should be planned for.

> Companies should adopt programmes focussed on the prevention of hazards, rather than simply those which address the mitigation of these hazards.

HEALTH CARE WITHOUT HARM

Strengthening Healthcare Waste Management Systems

Ms. Susan Wilburn, Director of International Sustainability, Health Care Without Harm, USA, swilburn@hcwh.org

Global

With regards to health care waste management systems, there is a need for proper training of health workers (immunization and policies), effective OH programs, the use of personnel protective equipment (as a last line of defense, since hazards should be prevented in the first place) and IEC materials.
All of these should be implemented from the stage of raw material acquisition to production and finally, during the installation and maintenance of equipment.

There are various barriers to environmental health and safety standards as a business value. Health and safety professionals usually focus primarily on the technical aspects of EHS, and do not integrate them into the business’s safety programme. Often, health and safety professionals also lack key adaptive technical skills such as evaluating effectiveness of safety programs. Robust medical surveillance programmes and robust industrial hygiene programmes which begin with prevention are required to help ensure good practices of occupational health are implemented.

Both Good Manufacturing Practices and Industrial Hygiene are important in EHS. Good manufacturing practices protect products from people and industrial hygiene protects people from products. Both components are important, and one should not be reduced because of the other. Primary prevention and early intervention are also critical in this regard.

Companies should have a “detect hazard” program, a genuine focus on EHS policy, execution of a “near miss” accident program, a “track the first aid” program, as well as a display of the minutes of safety committee meetings, and meaningful “safety award” schemes.

3.10 ENSURING CONTINUITY AND ADDRESSING BOTTLENECKS IN SUSTAINABLE PROCUREMENT OF HEALTH COMMODITIES

CAMPFIRE SESSION BACKGROUND

The case for embedding sustainability in the procurement of health commodities has already been made, and many organisations have adopted this as a pivotal vehicle to manage the risks to human health, environment and society arising from their operations. However, their counterparts across the health industry value chain in many countries are still facing bottlenecks to integrate sustainability in supply chain practices. This session was built on the cumulative experiences of participants to brainstorm what needs to be done to make enduring improvement in sustainability practices of health sector using the power of procurement. The participants were encouraged to articulate a challenge to troubleshoot and contribute to a congenial, informative dialogue of support and inspiration. Through peer-to-peer dialogue, the participants charted next steps for realizing the aspirations that are most compelling for them and their organizations, by seeking guidance from fellow participants who might have faced and overcome similar challenges during their sustainable procurement journey. The session also discussed how to sustain motivation and enthusiasm for sustainable procurement within the health sector and how we could use the growing momentum of sustainable purchasing towards achieving the SDGs.

This campfire session was moderated by Mr. Sanjay Kumar, General Manager, DFCCIL, in the Ministry of Railway, Government of India, and featured interventions by various experts including:

> Dr. Kristian Steele, Associate, ARUP (United Kingdom)
> Dr. Rosemary Kumwenda, Regional Team Leader for Eastern Europe and Central Asia, HIV, Health and Development, and Coordinator of the UN Secretariat on Sustainable Procurement in the Health Sector, UNDP Istanbul Regional Hub (Turkey)
> Ms. Inga Podoroghin, Programme Specialist at UNDP (Moldova)
> Dr. Saleban Omar, Senior Regional Programme Advisor, HIV, Health and Development Team, UNDP (Ethiopia)
> Ms. Tran Thi Thu Huong, UNDP (Viet Nam)
> Ms. Alka Narang, Assistant Country Director, UNDP (India)

Key Messages and Action Points

> Asset management is very important in the system of creating sustainable procurement. Together with this, accountability within the health sector, particularly in hospitals and medical facilities, is a requirement when contributing to the overall process of sustainable procurement.
> At the core of challenges faced by the health sector are issues of governance and the management of stocks, in the creation of an environment conducive to sustainable procurement.
> Corruption has been identified as the largest impediment to the development of sustainable procurement, due to dishonesty and mismanagement of stocks within the procurement system of hospitals and medical facilities, particularly in developing countries such as Viet Nam and Kenya.
Roadmapping should be used as an alternative to help create an effective mechanism for sustainable procurement practices. The process would involve identifying a goal, and various steps in the implementation process, and then practically applying it in hospitals and medical facilities.

Capacity building is a critical dimension in creating sustainable procurement in the health sector, and more attention and resources should be directed to capacity building programmes, particularly those focussed on supervision and implementation of sustainable procurement practices.

Health care sector stakeholders, particularly those in developing countries, must pay attention to the difference between ‘green’ and ‘sustainable’ practices. Sustainable practices address the social behaviour of the people, while ‘green’ practices simply provide options for people without integrating the substantial behavioural changes needed to ensure effective policies and practices are adopted.

The private sector has a critical part to play, in setting up an agenda, building infrastructure, supporting the financing of projects; this must be complemented with strong and influential leadership, that ensures transparency and accountability of processes and practices, and works together with private and public sector stakeholders in capacity building.

The time is ripe to establish a framework to combat corruption in the procurement sector; relevant stakeholders must take this opportunity to set up such a framework, similar to the UN SDGs.

“We need to evolve our sense of sustainability. Green is not sustainable. Sustainable has social perspectives.”
Dr. Rosemary Kumwenda, UNDP

“Medicine is an asset, and that requires careful management. Existing technologies may allow transparency and security of procurement, but if the people still won’t input the right data, corruption will still be rampant.” Dr. Saleban Omar. UNDP
More than 3 decades ago, when Mercedes Peratta Ruiz started out as community health volunteer in her village in northern Honduras, she would typically see about 150 cases of malaria every year. "Many people died", she said, "mostly children." But in recent years the number of cases started to decline, and today almost no patients come and visit her anymore. Although diagnostics and treatment have improved a lot, Mercedes believes that "the biggest change is that today, everybody realizes the importance of treatment. There is more education today". And less malaria.
PANEL BACKGROUND

With the adopted Sustainable Development Goals (SDGs), all stakeholders from the global health sector are offered an opportunity to reframe what constitutes effective leadership for a sustainable health sector. This is especially important in the context of Low and Middle-Income Countries (LMICs) that are facing complex demographic and epidemiological transitions. Leadership is essential not only at the level of inspirational individuals who can create collective vision and commitment but also at the level of supportive institutions situated in or aligned to the health system. The closing panel provided different perspectives on what the health system as a whole can do to exercise leadership that advances sustainable production in the health sector, within the framework of sustainable development.

Moderated by Dr. Rosemary Kumwenda, Regional Team Leader Eastern Europe and Central Asia, HIV, Health and Development and Coordinator of the UN Secretariat on Sustainable Procurement in the Health Sector, UNDP the session was a closing panel discussion featuring:

- Mr. Eric Dupont, Chief, Procurement Services Branch, UNFPA (Denmark)
- Mr. Ramon San Pascual, HCWH-Asia Director (the Philippines)
- Dr. Eduardo P. Banzon, Principal Health Specialist, Asian Development Bank

Over the three-day Forum, participants identified various steps necessary for stakeholders to take in advancing the agenda of sustainable production in the health sector.

Participants recognised the urgent need for a collective vision for sustainability, and the development of a sustainable model of production in the health sector – one which secures the future of people and planet, strengthens partnerships and ensures sustained peace and prosperity for all.

Participants agreed on the need for the development of quantifiable data and statistics, in order to ensure a better understanding of the benefits and savings associated with sustainable production in the health sector. By quantifying the efficiency and savings generated through sustainable production practices, private sector actors can be more easily incentivised to commit to, and invest more substantially in, sustainable procurement efforts in the health sector.

While procurement is about financing, economics and business, stakeholders recognised the importance of keeping in mind the people whom they are serving – those most marginalised and at risk. To this end, stakeholders committed to working on ensuring inclusivity at the decision-making table and at all points along the supply chain; integrating and collaborating with all actors, particularly those most affected such as women, marginalised communities and those with disabilities.

Participants agreed on the need to move away from working in silos, as is the status quo, towards working collaboratively across sectors and groups, in order to strengthen sustainable production efforts. Notably, participants committed to working harder to bring policymakers, procurement authorities, UN agencies, suppliers and manufacturers, NGOs and other stakeholders together to pursue partnerships with health care facilities and institutions, in an effort to push for a common agenda on health care sustainability.

Participants agreed to continue capturing experiences, and collecting and compiling data and lessons learned, in order to identify transferable practices and develop models of sustainable procurement, taking into account the particular socio-economic, institutional, cultural, political, and structural dimensions at play in each context.

Participants agreed on the integral and invaluable role of the private sector in advancing sustainable production in the health sector. To this end, stakeholders committed to continue working to bring the private sector to the table, to ensure its more consistent engagement in, and commitment to sustainable production efforts.

Participants recognised the need to develop an international standard of criteria for environmental sustainability in the health sector, created through a consultative process with local, regional, and international government and non-governmental organisations, public and private sector actors, as well as community leaders, women and other marginalised groups.

Participants committed to leveraging various existing international frameworks as entry points to further advance the sustainable production agenda in the health sector. These include the international frameworks on: universal health coverage, climate change and health, and human rights approaches such as the basic human right to clean water and sanitation. These entry points also serve as bridge builders, bringing together stakeholders from across sectors and around the world to advance sustainable development.
Participants overwhelmingly agreed that sustainable production is the key to universal health coverage, not only to minimise its monetary cost, but also with regard to the price tag levied on the planet and the environment.

Participants committed to further advocating for strengthened accountability and accreditation measures, as well as increased efforts at monitoring and creating databases, through which to develop knowledge and information sharing, in order to ensure transparency across the public and private sectors.

Participants also recognised the urgent need for stronger government legislation to ensure enforcement and monitoring of sustainability efforts in the health sector.

Participants committed to promoting and pushing the adoption of innovative solutions in the health sector such as through: shifting to renewable energy in health facilities, reducing waste through fewer single-use products and improving waste management, recycling water, substituting chemicals of high concern, utilizing biodegradable packaging of medicines, and promoting green building design and construction.

Participants further committed to focussing on consumption and production, and environmental and social sustainability together, in an effort to contribute towards sustainable development.

Participants overwhelmingly agreed on the integral role of good governance and leadership in moving towards sustainability in the health sector.

In an effort to contribute meaningfully to the achievement of the SDGs, participants committed to advocating for strengthened and proactive leadership in the health sector, from the local to the regional and international levels, as well as true collaboration between health care suppliers and consumers. Stakeholders recognised that by extending the ‘business as usual’ model to incorporate the sustainability agenda, and by recognizing the suppliers and manufacturers of health commodities as crucial partners in this process⁵ ⁶, health sector leaders would be taking concrete steps towards the achievement of the SDGs.

Participants recognised the need to invest more in developing the leadership of the people, not only in the health sector, but across sectors, and from the grassroots to the regional and international levels.

Participants committed to using the leverage they have as leaders in their communities / societies, in order to push the agenda of sustainable production in the health sector forward.

Participants further recognised the critical leadership role the SPHS Secretariat must continue to play in advancing the agenda of sustainable production in the health sector.

Participants committed to furthering progress made at the Asia Forum 2018, through strengthened advocacy efforts to galvanise support, continued collaborative discussions across stakeholder groups, as well as through a push for change across sectors and at all levels of governance, in order to promote sustainable production in the global health sector.

⁵ https://savinglives sustainably.org/news/1K779K.html
⁶ https://issuu.com/informal_int_task_team_sphs/docs/sphs_engagement_strategy
© Silva PAHO/WHO Tabatinga, Brazil

Through the success of Brazil’s National Immunization Programme, routine vaccination coverage in the country averages above 95 percent for most vaccines on the child immunization schedule every year —exceeding WHO’s recommendation of at least 90 percent coverage.

Most of the vaccines are produced through local manufacturers and provided free of charge in more than 36 000 public health care facilities throughout the country.
Appendix A - Programme

**PANEL:**

In a Panel the chairperson plays a very active role, serving as the moderator who ensures that all panellists, generally three to five people, have the opportunity to speak. A chairperson can both pose questions and facilitate audience questions. Panel Discussions will generate spontaneous interaction among panellists and between panellists and the audience. Diversity among panellists is essential to the success of the session. All panellists must recognize the need for advance preparation.

**PRESENTATION:**

A presentation can be a case study, research report, demonstration, or informational session about a primary topic of interest. The session may include a successful design approach, management effort, or technology implementation. There can also be a demonstration of an application using real-world examples and scenarios. The session will be informative and not a commercial or endorsement of a specific product. Presentations will include considered alternatives and faced challenges.

**TRAINING:**

Training Solutions will be a practical, solution-focused talk that is educative, interactive, and audience-engaging. The discussion can highlight and demonstrate how to solve a problem and give attendees an opportunity to participate or offer their take or suggestions on the situation. Speakers will encourage and facilitate conversation and discussion with the audience, e.g. ask questions, propose a different approach, pose scenarios, etc.

**CONVERSATION HOUR:**

Conversation Hour is expected to host around 10 roundtables, all placed in the main auditorium of the venue. The typical approach for this session type is to have one or two experts at one roundtable who serve as hosts on a scientific or practical topic. Members of the audience are typically seated in a circle to facilitate their active participation in discussion with the hosts and with each other. This session type is well suited to helping attendees with problems they are currently facing, discussing the latest developments in an area, and facilitating network development among people with similar interests. Although the expert(s) may wish to make a short presentation to begin the session, most of the time will be devoted to answering questions from the audience and promoting discussion and networking. Each conversation takes 30 minutes, then the audience chooses another roundtable. Speakers will have a chance to host three groups in 90 minutes and discuss in an intimate setting the proposed topic.

**CAMPFIRE SESSION:**

Campfire Sessions are set in a laid-back environment, simulating a campfire storytelling time. The facilitator introduces a topic and drives the discussion but not content itself. The content is created by discussing delegates in real-time. This format represents an excellent place for delegates to learn from their peers through sharing own experiences. As a bonus, this interactive peer-to-peer format is also a unique opportunity for representatives to build new connections.

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**DAY 1: 13 JUNE - FOCUS ON WATER AND ENERGY**

The industry is the second largest user of water globally, following agriculture. Growing population comes with the increased need for production in the health sector which increases the amount of water used by the industry. During the Forum, participants discussed the benefits and challenges of integrated management of water sources and wastewater disposal and learned how to practically implement saving, efficiency and treatment solutions from successful cases of various health manufacturers. The planet also keeps warming up due to the high consumption of fossil fuels, which are considered the most important energy sources that the world relies on today. The Forum offered an opportunity for participants to engage in conversations with top technical experts on energy efficiency, green technologies, renewable energy, and other topics of importance for the health sector.

**ADB Disaster Risk Reduction – Security Video**

**1.1 Introductory Remarks**
Moderator: Ms Hannah Moosa, Asia Forum 2018
Facilitator
> Mr. Titon Mitra, UNDP Country Director (the Philippines)
> Mr. Woochong Um, Director General, Sustainable Development and Climate Change Department, ADB
> Dr. Gundo Aurel Weiler, WHO Representative in the Philippines
> Mr. Harald Fries, Swedish Ambassador to the Philippines
> Dr. Esperanza Cabral, Member of the Board of Directors, Health Care Without Harm Asia (the Philippines)
> Dr. Nestor F. Santiago, Jr., Assistant Secretary, Department of Health, Government of Philippines

1.2 Sustainable Production in the Health Sector and the 2030 Agenda for Sustainable Development
Moderator: Mr. Eric Dupont, Chief, Procurement Services Branch, UNFPA (Denmark).
Speakers:
> Mr. Josh Karliner, International Director of Program and Strategy, Health Care Without Harm [United States]
> Mr. Angus Rennie, Senior Manager, Partnerships and UN Relations, United Nations Global Compact – on behalf of Ms Lise Kin-go, Executive Director, United Nations Global Compact [United States]
> Ms. Katarina Veem, Director, Stockholm International Water Institute [Sweden]

1.3 Energy Efficiency Towards Carbon Neutrality
Moderator: Dr Saleban Omar, Senior Regional Programme Advisor, HIV, Health and Development Team, UNDP (Ethiopia)
Speakers:
> Mr. Virender Kumar Duggal, Principal Climate Change Specialist, ADB
> Mr. Manuel L. Soriano, Senior Technical Advisor, Energy, Infrastructure, Transport & Technology, UNDP Asia-Pacific Regional Centre (Thailand)

1.4 Water Efficiency and Savings: How to Reduce Water Consumption at your Production Facility?
Trainer: Ms. Katarina Veem, Director, Stockholm International Water Institute [Sweden]

1.5 Carbon Management of Health Programmes, Facilities and Supply Chains: Methodologies, Experience and Recommendations

1.6 International Standards in Healthcare – Environmental Management Systems: ISO 14001 and LEED Certification
Moderator: Ms. Amanda Lindstrom, Technical Officer, UNDP Global Fund/Health Implementation Support Team, HIV, Health and Development Team [Denmark]
Speakers:
> Mr. David W. Ausdemore, President, Health Systems Sciences Sciences LLC [United States]
> Mr. Erwin R. Casaclang, Facilities Planning and Management Officer, Office of Administrative Services, Asian Development Bank

1.7 Opportunities and Challenges in Introducing Renewable Energy: Making Your Production Facility Self-Sufficient
Moderator: Mr John Macauley, Regional HIV, Health and Development Programme Specialist, UNDP Istanbul Regional Hub (Turkey)
Speakers:
> Mr. Marlon Apanada, Director, Allo trope Philippines (the Philippines)
> Dr. Saleban Omar, Senior Regional Programme Advisor, HIV, Health and Development Team, UNDP [Ethiopia]
> Mr. Ingo Walterscheid, CEO, Ecological Forum for Industry Transformation and Transaction (EcoFITT) [Denmark]

1.8 Climate-Smart Healthcare Financing
Moderator: Dr Eduardo P. Banzon, Principal Health Specialist, Asian Development Bank
Speakers:
> Mr. Virender Sharma, Senior Urban Development Specialist, ADB
> Mr. Susumu Yoneoka, Senior Energy Specialist, ADB
> Mr. John Wong, Epimetrics (the Philippines)

1.9 Effective Management of APIs in Wastewater from Pharmaceuticals Production: Measuring and Monitoring
Moderator: Dr. Rajeshwari Sinha, Deputy Programme Manager, Centre for Science and Environment [India]
Asia Forum 2018: Report and Compendium of Good Practices in Sustainable Production, Procurement and Disposal in the Health Sector

Speakers:
> Ms. Dulce Calcada, Researcher, Access to Medicine Foundation (Netherlands)
> Mr. Nicolai Schaaf, Programme Officer, Stockholm International Water Institute (Sweden)
> Ms. Suman Sharma, Director - Sustainable Antibiotics and Brand Communications, DSM Sinochem Pharmaceuticals (India)

1.10 Conversation Hour

Moderator: Dr. Rosemary Kumwenda, Regional Team Leader Eastern Europe and Central Asia, HIV, Health and Development and Coordinator of the UN Secretariat on Sustainable Procurement in the Health Sector, UNDP Istanbul Regional Hub (Turkey)

- Planetary Boundaries and Meeting the Paris Agreement Carbon Reduction Ambitions in the Global Health Sector - Dr. Kristian Steele, Associate, ARUP (UK)
- Monitoring of Health Commodities with Great Climate Impact - Ms. Kristina De Geer, Environmental Strategist, Region Skåne (Sweden)
- Achieving SDGs through Multi-Stakeholder Partnerships in the Health Sector – Mr. Angus Rennie, Senior Manager, Partnerships and UN Relations, United Nations Global Compact (United States)
- Online Engagement Platform on Sustainable Procurement in the Health Sector – Ms. Mirjana Milic, Associate Coordinator of the UN Secretariat on Sustainable Procurement in the Health Sector, UNDP Istanbul Regional Hub (Turkey)
- Social and Environmental Impact Management – Ms. Nazila Vali, Knowledge and Partnerships Lead, the Business Call to Action, UNDP Istanbul Regional Hub (Turkey)
- Environmental Questionnaire for UNDP Suppliers and Manufacturers of Healthcare Products: Ms. Lorea Coronado Garcia, Sustainable Supply Chains Specialist, UNDP Istanbul Regional Hub (United States)
- Guiding Pharmaceutical Companies to Strengthen Wastewater Management: The Antimicrobial Resistance Benchmark - Dr. Damiano de Felice, PhD, Director of Strategy, Access to Medicine Foundation and Ms Dulce Calcada, Researcher, Access to Medicine Foundation (Netherlands)
- Building New Alliances for Sustainable Antibiotic Supply Chains – Mr. Nicolai Schaaf, Programme Officer, Stockholm International Water Institute (Sweden)
- Sustainable Antibiotics - Minimizing Environmental Impact for Products that Save Lives – Ms. Suman Sharma, Director - Sustainable Antibiotics and Brand Communications, DSM Sinochem Pharmaceuticals (India)

Solar for Health: Viet Nam Country Example Ms. Tran Thi Thu Huong, UNDP (Viet Nam)

Engaging With Partners to Reduce the Risk of Social and Environmental Due Diligence - Ms. Amanda Lindstrom, Technical Officer, UNDP Global Fund/Health Implementation Support Team, HIV, Health and Development Team (Denmark)

How Can You Promote the Use of Renewable Energy Sources? – Ms. Inga Podoroghin, Programme Specialist, UNDP Global Fund/Health Implementation Support Team, HIV, Health and Development Team (Denmark)

DAY 2: 14 JUNE - FOCUS ON PACKAGING AND WASTE MANAGEMENT

Healthcare products usually require a significant quantity of packaging materials which leads to important amounts of waste. The Forum offered an opportunity to participants to examine the most innovative possibilities on sustainable health packaging and approaches to follow circular economy principles. Through several expert presentations and training, participants also had an opportunity to learn and share the experience in international standards and certifications on sustainable packaging materials. In addition, waste produced during the production process of healthcare products may contain hazardous substances that would require proper disposal and management. Inadequate treatment of healthcare waste management can generate toxic releases and risk both human health and natural resources. Therefore, Forum represented space in which key stakeholders from the global health sector could explore how to reduce production cost through sustainable waste management, and contribute to successful cases on waste minimisation, reusing, recycling and recovering.

2.1 The Circular Economy and Cradle-to-Cradle Approach with a Focus on Procurement

Moderator: Mr. Håkan Björkman, Executive Coordinator, UNDP Global Fund Partnership (Switzerland)

Speakers:
> Mr. Von Hernandez, Global Coordinator, Break Free from Plastic Movement (the Philippines)
> Mr. Sanjay Kumar, General Manager, DFCCIL, Ministry of Railway, Government of India (India)
> Mr. Ingo Walterscheid, CEO, Ecological Forum for Industry Transformation and Transaction (EcoFITT) (Denmark)
> Ms. Rulita Wijayaningdyah, Chairperson of the International Board of Directors of the Forest Stewardship Council (FSC) (Indonesia)
2.2 Rethinking Waste in the Health Sector -
Towards a Circular Economy

Moderator: Ms. Ruth Stringer, International Science and Policy Coordinator, HCWH (UK)

Speakers:
> Dr. Mao Da, Co-founder of China Zero Waste Alliance (CZWA) (China)
> Mr. Manoj Sharma, Chief of the Urban Sector, ADB
> Dr. Kristian Steele, Associate, ARUP (UK)
> Mr. Jeff Squalli, CEO & President, ECODAS (France)
> Ms. Susan Wilburn, International Sustainability Director, Health Care Without Harm (United States)

2.3 Sustainable Integration of Small and Medium Enterprises (SMEs) from Developing and Transition Countries in the Global Recycling of Secondary Resources

Moderator: Mr. Ramon San Pascual, HCWH-Asia Director (the Philippines)

Speakers:
> Buena Bariring, Owner, Buena Handicrafts (the Philippines)
> Joyet Castro, General Manager, Smokey Mountain Resource Recovery (the Philippines)
> Ms. Wilhelmina Garcia, Founder, Junk Not (the Philippines)
> Ms. Aileen Lucero, National Coordinator of the EcoWaste Coalition (the Philippines)

2.4 Healthcare Waste Management Under National and International Commitments

Moderator: Mr. Robert Bernardo, Policy Specialist, UNDP Istanbul Regional Hub (Turkey)

Speakers:
> Mr. Tenara Banda, Chief Procurement and Supplies Officer, Ministry of Health Zambia (Zambia)
> Dr. Mao Da, Co-founder of China Zero Waste Alliance (CZWA) (China)
> Ms. Megha Rathi, Sustainable Health in Procurement Project Coordinator (SHiPP), Health Care Without Harm (Switzerland)

2.5 Creation of Long-Term Business Value Through Sustainable Development Goals

Trainer: Mr. Angus Rennie, Senior Manager, Partnerships and UN Relations, United Nations Global Compact (United States)

2.6 Rethinking Healthcare Plastics: Success Story Examples

Trainers: Ms. Wendy Rayner, National Sustainability Manager, NHS Scotland (UK) and Ms. Lena Stig, Former Project Manager, PVCfreeBloodBag, Sustainable plastic use at Swedish EPA (Sweden)

2.7 The Latest Trends in Waste Management Leading to a Sustainable Reduction in Pollution from Medical Waste

Moderator: Mr. Ademola Osigbesan, Supply Officer, Unitaid/WHO (Switzerland)

Speakers:
> Ms. Kristina De Geer, Environmental Strategist, Region Skåne (Sweden)
> Mr. Robert Matthews, Contracts Manager, Health Technology Centre, UNICEF Supply Division (Denmark)
> Mr. Kenneth Sam-Sin, CEO & Managing Partner, SimpleComply (confirmed interest) (Netherlands)
> Ms. Ruth Stringer, International Science and Policy Coordinator, HCWH (UK)

2.8 Biodegradable Plastics in the Health Sector: Advantages and Drawbacks

Moderator: Dr. Sudesh Kumar, Researcher, School of Biological Sciences, the University of Sanins Malaysia (Malaysia)

2.9 The Future of Packaging in the Health Sector: Good Practices and Common Challenges of Eco-Innovative Packaging

Moderator: Dr. Bwijo Bwijo, Programme Specialist HIV/AIDS UNDP (Tanzania)

Speakers:
> Ms. Lena Stig, Former Project Manager, PVCfreeBloodBag, Sustainable plastic use at Swedish EPA (Sweden)
> Mr. Ingo Walterscheid, CEO, Ecological Forum for Industry Transformation and Transaction (EcoFITT) (Denmark)
> Mr. Sourav Mitra, Vice President - Global Packaging Strategy (OSD), Mylan Laboratories Limited (India)

2.10 Mercury Free Healthcare: Good Practice Examples

Moderator: Ms. Susan Wilburn, International Sustainability Director, Health Care Without Harm (United States)
Speakers:

> Dr. Samwel Manyele, Professor, University Of Dar Es Salaam [Tanzania]
> Ms. Faye Ferrer, Coordinator for Global Green and Healthy Hospitals in the Southeast Asian region, Health Care Without Harm Asia [the Philippines]
> Mr. Rajeev Kumar, Director - Non Communicable Diseases, Ministry of Health and Family Welfare [India]
> Dr. Poornima Prabhakaran, Senior Research Scientist and Associate Professor, Centre for Chronic Disease Control [India]

2.11 Conversation Hour

Moderator: Ms. Mirjana Milic, Associate Coordinator of the UN Secretariat on Sustainable Procurement in the Health Sector, UNDP Istanbul Regional Hub [Turkey]

> The Challenge of Material Re-Use and Recovery in the Health Sector - Ms. Wendy Rayner, National Sustainability Manager, NHS Scotland [UK]
> Chemicals of Concern in Medical Product Packaging – Ms. Ruth Stringer, International Science and Policy Coordinator, HCWH [UK]
> Guide for Healthcare Procurement and Compliance with International Environmental Conventions on Chemicals: Ms. Lorea Coronado Garcia, Sustainable Supply Chains Specialist, UNDP Istanbul Regional Hub [United States]
> Viet Nam Strategy Development of a National Action Plan the Health Sector: Focus on Stockholm and Minamata Conventions - Dr. Tran Anh Dung, Health Environment Management Agency [HEMA], Ministry of Health [Viet Nam]
> Cradle to Cradle Design and Circular Business Models for the Recovery of Plastic Materials in Health Care - Mr. Ingo Walterscheid, CEO, Ecological Forum for Industry Transformation and Transaction [EcoFITT] [Denmark]
> Prospect and Sustainable Production of Biodegradable Plastics from Renewable Resources - Dr. Sudesh Kumar, Researcher, School of Biological Sciences, the University of Sanins Malaysia [Malaysia]
> PVC-Free Blood Bag – Ms. Lena Stig, Former Project Manager, PVCfreeBloodBag, Sustainable plastic use at Swedish EPA [Sweden]
> Challenges in Introducing Eco-Innovative Medical Waste Treatment Technologies: Mr. Jeff Squalli, CEO & President, ECODAS [France]
>
> Sustainable Waste Management of Pharmaceuticals: CSO Perspective from India - Dr. Rajeshwari Sinha, Deputy Programme Manager, Centre for Science and Environment [India]
> Accreditation: Standards Implementation Enabling Sustainable Outcomes in Healthcare Waste Management – Mr. J. Andrew Maddigan, Senior Manager, Corporate Communications, Accreditation Commission for Health Care [ACHC]; Mr. Fernando Morales, Managing Partner, SimpleComply; Mr. Kenneth Sam-Sin, CEO & Managing Partner, SimpleComply [Netherlands]
> Beijing Zero Waste - Dr. Mao Da, Co-founder of China Zero Waste Alliance [CZWA] [China]
> Efficient Medical Waste Management – Mr. Gorceag Gheorghe, Senior Consultant, Service for Medicine and Medical Devices Policies, Ministry of Health, Labour and Social Protection [Moldova]
> Blockchain in the Health Sector in Moldova – Ms. Inga Podoroghin, Programme Specialist, UNDP [Moldova]

DAY 3: JUNE 15 - FOCUS ON HUMAN AND LABOUR RIGHTS AND GENDER EQUALITY

Healthcare sector accounts for millions of jobs worldwide. However, fundamental human and labour rights are not always respected. Many types of research indicate that compliance with international human and labour standards often triggers improvements in productivity and economic performance. The Forum hosted a number of top technical experts and other key stakeholders from the global health sector, who could engage in discussions with international organisations on ethical procurement and monitoring of human and labour rights in the supply chain. Various training sessions and campfire sessions provided an opportunity to debate working conditions, safety, occupational health in the healthcare manufacturing industry, and other sessions of critical importance in integrating social sustainability in the global health sector. Lastly, Forum offered insights into how companies could grow opportunities for every employee. Participants were able to explore success stories on mainstreaming gender equality and good practice examples on how they can bring equality to the workplace.

3.1 Social Sustainability in the Health Sector: How to Improve Social Conditions Along the Supply Chain of Health Commodities and Services?
Asia Forum 2018: Report and Compendium of Good Practices in Sustainable Production, Procurement and Disposal in the Health Sector

Moderator: Dr. Amitrajit Saha, Team Leader, HIV, Health and Development Team for Africa, Addl. Charge of HHD Teams in EECA and Arab States, UNDP Istanbul Regional Hub (Turkey)

Speakers:
> Dr. Asher Hasan, Founder & CEO of doctHERs and Founder of Naya Jeevan (Pakistan)
> Mr. Sanjay Kumar, General Manager, DFCCIL, Ministry of Railway, Government of India (India)

3.2 Ethical Public Procurement: How the Integration of Social Criteria in Public Contracts Can Help Improve Labour Rights?

Moderator: Mr. Robert Bernardo, Policy Specialist, UNDP Istanbul Regional Hub (Turkey)

Speakers:
> Dr. Pauline Göthberg, National Coordinator for Sustainable Public Procurement, Swedish County Councils (Sweden)
> Mr. Dennis S. Santiago, Executive Director of the Philippines Government Procurement Policy Board, Technical Support Office (the Philippines)
> Mr. Charlie Villasenor, President & CEO, Procurement and Supply Institute of Asia (PASIA) (the Philippines)

3.3 Empowering Women in Global Health Supply Chains

Moderator: Ms. Alka Narang, Assistant Country Director, UNDP (India)

Speakers:
> Dr. Sylvia Estrada-Claudio, Dean and Professor, Department of Women and Development Studies, College of Social Work and Community Development, University of the Philippines (the Philippines)
> Dr. Asher Hasan, Founder & CEO of doctHERs and Founder of Naya Jeevan (Pakistan)
> Dr. Akash Malik, National Manager - Health System Strengthening, UNDP (India)
> Ms. Nida Shehzad, Digital Innovation Lead, Sehat Kahani (Pakistan)

3.4 Promotion of Participation of Small and Medium Enterprises in Sustainable Health Supply Chains: Ensuring Supplier Diversity, Reliability and Sustainability

Moderator: Mr. Ian Milimo, Assistant Resident Representative / Poverty Reduction UN House (Zambia)

Speakers:
> Ms. Blerta Cela, Deputy Country Director, UNDP Ukraine
> Mr. Robert Matthews, Contracts Manager, Health Technology Centre, UNICEF Supply Division (confirmed by UNICEF Miho) (Denmark)
> Ms. Wendy Rayner, National Sustainability Manager, NHS Scotland (UK)

3.5 Impact Management and the Business Call to Action (BCtA) Impact Lab

Workshop Facilitator: Ms. Nazila Vali, Knowledge and Partnerships Lead, the Business Call to Action, UNDP (Turkey)

3.6 Water-Antimicrobial Resistance-Human Rights: A New Nexus-Approach to Address a Complex Challenge?

Moderator: Mr. Nicolai Schaaf, Programme Officer, Stockholm International Water Institute (Sweden)

3.7 The Landscape of Inclusive Business Models of Healthcare around the World: Business Model Innovations

Moderator: Ms. Nazila Vali, Knowledge and Partnerships Lead, the Business Call to Action, UNDP (Turkey)

Speakers:
> Dr. Agbor Ashu, Medical Director at Gifted-Mom (Cameroon)
> Dr. Eduardo Banzon, Principal Health Specialist, Asian Development Bank
> Dr. Camilo Gonzalez Ruiz, Innovations & Payee’s Solution Manager at Sanofi (Colombia)
> Ms. Nida Shehzad, Digital Innovation Lead at Sehat Kahani (Pakistan)

3.8 Reducing Workplace Inequalities and Achieving Sustainable Development Goals in the Healthcare Sector

Moderator: Ms. Yayu E. Javier, Chairperson, UN Global Compact Network the Philippines (the Philippines)

Speakers:
> Dr. Milton Amayun, President, International Care Ministries Foundation, Inc. (the Philippines)
> Mr. Rajiv Singh, CEO, Coco Veda (the Philippines)
> Ms. Haidy Ear-Dupuy, Senior Social Development Specialist (Core Labor Standards), Sustainable Development and Climate Change Department, ADB

3.9 Ensuring Occupational Health and Safety in...
the Healthcare Manufacturing Industry

**Moderator:** Ms. Susan Wilburn, International Sustainability Director, Health Care Without Harm [United States]

**Speakers:**
> Dr. Rokho Kim, Regional Advisor, Environmental Health, WHO Western Pacific Regional Office [WPRO]
> Dr. Hyun Kim, ScD, Visiting Professor, University of the Philippines Manila, WHO Consultant

### 3.10 Ensuring Continuity and Addressing Bottlenecks in Sustainable Procurement of Health Commodities

**Moderator:** Mr. Sanjay Kumar, General Manager, DF-CCIL, Ministry of Railway, Government of India [India]

### 3.11 Closing Panel Discussion: Redefining Health Sector Leadership in the Sustainable Development Goal Era

**Moderator:** Dr. Rosemary Kumwenda, Regional Team Leader Eastern Europe and Central Asia, HIV, Health and Development and Coordinator of the UN Secretariat on Sustainable Procurement in the Health Sector, UNDP Istanbul Regional Hub (Turkey)

**Speakers:**
> Mr. Eric Dupont, Chief, Procurement Services Branch, UNFPA [Denmark]
> Mr. Ramon San Pascual, HCWH-Asia Director [the Philippines]
> Dr. Eduardo P. Banzon, Principal Health Specialist, Asian Development Bank

### 3.12 Closing Remarks

**Moderator:** Ms. Hannah Moosa, Asia Forum 2018 Facilitator

> Mr. Ola Almgren, Executive Representative of the UN Secretary General, UN Resident Coordinator and Resident Representative of UNDP Philippines
Appendix B - Delegate’s Guide to a Sustainable Forum

This year you will be one of the 200 or so participants travelling from around the world to gather for three days at the Asia Forum 2018 in Manila. Though we know much will be gained from us meeting together in one place, we recognize that the travel, consumption and waste generation linked to the Forum have implications for the local and global environment. Mainly at stake are:

> The global climate through the greenhouse gas (GHG) emissions generated through the travel, consumption, and waste generation resulting from the event;
> Biodiversity, due to links with the food and other products we consume—from fish to bottle corks!
> The sustainability of local water supplies, as well as our paper sources.

In addition, other points of importance include your time, money and energy.

This guide has been put together with these issues in mind. It aims to help minimize the adverse impact of participation in the Forum, individually and collectively, by providing delegates with a number of smart options that are relevant at different stages of the Forum.

You will find guidelines on how best to plan your trip, from choosing how to get to Manila and where to stay, to packing your bags. It also takes into account water use issues, options for eating out responsibly, and some local cultural considerations.

1. GETTING TO MANILA

This is likely to be the part of the Forum that generates the biggest climate change impact, if greenhouse gas (GHG) emissions from all the individual journeys to Manila are totaled up.

For those who must fly to the Forum from outside the region: try to take the most direct flight options to limit GHG emissions.

2. ARRANGING ACCOMMODATION

Compared to private homes, hotels consume great quantities of energy and water. This has a lot to do with them providing comfort and luxury and trying to keep things fresh and clean on a daily basis for new arrivals. Energy and water use is so significant that many hotels, both in Manila as well as internationally, have adopted energy and water efficiency measures just to keep costs down.

These so-called “green hotels” often have waste separation and recycling schemes, use efficient energy-management systems, deploy water-saving devices and practices, and use environmentally-safe cleaning products.

Note that you are not obliged to choose from the hotels flagged up by the Forum booking system. Consider other types of accommodation.

Smart options:

> Book a hotel with certified green credentials and then let the management know that this was a deciding factor for you;
> If your choice of hotel is determined by cost and/or location, push the agenda on environmentally-responsible hotel operations by enquiring about the hotel’s environmental credentials when making your booking;
> Choose a location for your accommodation that enables you to get around easily by public transport, bicycle and on foot during your stay in Manila. On that note, it helps to get oriented as part of your pre-trip planning.

3. GETTING TO KNOW MY HOSTS

Responsible travel involves respecting your hosts as well as the local and global environment. Find out as much as you can about a place before you go—get to know a little bit about the culture, history and language.

Get oriented. Facilitate your sustainable mobility within the city by getting familiar with the location of ADB Headquarters (the Asia Forum 2018 Venue), your hotel and how they are served by the city’s public transport network.

4. PACKING

Responsible travelers have a number of other issues to think about when preparing their luggage, like packing thoughtfully so as not to burden the destination with imported waste and keeping their share of the cargo load to a minimum to ensure a more fuel-efficient journey.

Smart options
To pack as little as necessary and as light as possible it helps to:

> Check the likely weather conditions—June temperatures in Manila average 29°C/84°F and rainy days are common in this month, so bulky clothing is not necessary, just a light jacket and/or thin sweaters for the evenings and a raincoat and/or umbrella for possible rain;
> Find out what facilities your hotel offers (hair-dryers, etc.) to establish what items you do not need to pack;
> Check the luggage-size regulations of the airline. Maybe this will motivate you—can you squeeze everything into one cabin luggage item?

5. GETTING AROUND

The use of public transportation is encouraged through car- and van-pooling and use of fuel-efficient and low-emission vehicles. The Forum Venue facilities are readily accessible by public transport, the exits are close to a metro rail transit station, buses, jeepneys and vans.

The city’s public transport options are trains, buses and city taxis.

6. AT THE HOTEL

Whether you booked into a “green hotel” or not, there are a number of things you can do to minimize the environmental impact of your stay, paying particular attention to issues of water and energy consumption, and waste generation and disposal.

Smart options:

> Adjust the room’s thermostat or air conditioner by a degree or so towards the outside temperature and switch it off completely when you leave the room—both measures will make a big difference in energy consumption.
> Switch off lights and electric appliances when you are not using them.
> Keep in mind other water-saving practices like turning the tap off when brushing your teeth, showering rather than bathing, turning off the shower when soaping, and avoiding excess toilet flushing.
> Request that towels and bedding are not changed on a daily basis.
> Make enquiries... How is the hotel dealing with water consumption issues? Does the management have a green purchasing policy? Do they work with service suppliers to keep minimize environmental impacts along the supply chain. Is a written policy available on the ho- tel’s management of environmental impacts, as well as employment and cultural issues?

7. AT THE VENUE

Environmental impacts linked to our daytime Forum activities will be relatively low because of a combination of initiatives and some of the special features of the Forum’s Venue itself.

The Forum Venue: Sustainable by design. From the beginning and evolving over time, ADB always did its best to develop a facility that consumes the least amount of resources, to minimize its effect on the environment, ADB Headquarters are designed to be sustainable and prioritize health and safety. Embracing a sustainable building design and development where environmental impact is minimized and health and safety of its occupants are paramount. As proof of its commitment to sustainability, ADB received the LEED Gold certification since 2011 and has been successfully renewed regularly. Apart from attaining LEED certification, ADB also achieved two certifications under the International Organization for Standardization (ISO), specifically ISO 14001 and ISO 50001.

ADB is one of the first buildings in the area designed to minimize energy consumption. The building is oriented along an east to west axis to allow the longer north and south sides of the building to receive natural lightning from indirect sunlight and also optimizes the use of natural daylight to illuminate different sections of the building while considering human comfort and gaining energy savings. The solar panels on the rooftop of the Special Facilities Block produce clean energy and the interior garden helps reduce the urban heat island effect showing ADB’s commitment to sustainability.

In line with LEED requirements, a lagoon filled with plants indigenous to the Philippines was designed to reduce heating and minimize ADB’s impact on the microclimate and wildlife.

Most of ADB’s electricity is sourced from renewable sources. The building automation system efficiently controls temperature, humidity, and indoor air quality. It also monitors needs and automatically makes adjustments to match supply and demand for everything from air-conditioning to lights.

The third atrium uses materials to minimize the carbon footprint using nonporous, nonskid, glazed porcelain tile that matches the tea-rose, beige, and white-patterned marble colors in the original building. Unlike natural marble, this substitute does not require polishing and reduces energy consumption.
The granite appearance of the façade of the new atrium was achieved by using a water-based resin paint which was sprayed on cement. The environmental green paint used is low-carbon, provides superior weather resistance, and reduces building load.

ADB also encourages the use of public transportation, car-and van-pooling and use of fuel-efficient and low-emission vehicles. The facilities are readily accessible by public transport, the exits are close to a metro rail transit station, buses, jeepneys and vans.

All of these demonstrate ADB’s commitment to providing an efficient and sustainable environment for the thousands of ADB staff, contractors and visitors.

Smart options:
> Bring your laptop and/or a memory stick for document exchange;
> Use the appropriate containers for the disposal of your waste and recycle as much as possible, e.g. bring with you a re-usable bottle for water;
> Use the venue’s dual flush toilets accordingly.

8. LEAVING MANILA - MY NEXT STEPS

This is the first time the Asia Forum 2018 Organizing Agencies have jointly put together an information source like this, combining general guidelines on being a responsible visitor and details of initiatives to minimize environmental impacts with information that is relevant at the Forum’s destination. Some key questions to you are:
> Has this guide been useful to you?
> What response did you get from people when you requested environmentally-friendlier products or services?
> Do you have any recommendations for a guide for the next Forum?
> We would especially like to know what information you acted upon as a result of this guide.
> Which “smart options” did you take that were exceptional, i.e. not part of the usual way you travel?

Some final recommendations:
> Please share with us any tips on how to conference travel more responsibly with friends, families and colleagues.
> Remember that as a visitor you are a potential agent for change—your requests and enquiries will at the very least raise awareness.

9. HOW TO GET THE MOST OUT OF FORUM

PRE-INTRODUCE YOURSELF. Before the conference starts, we encourage you to think about the people you would like to get to know better. The Event App (available for download as of 1st June 2018), will enable you to browse through the list of Asia Forum 2018 attendees and get in contact with them before you arrive to Manila. If you would like to get in contact with one of the speakers, we recommend that you reach out and communicate your interest to attend specific session. Every speaker would warmly welcome a message confirming your participation, and this effort will be appreciated. If the person is not presenting, we propose to look for opportunities to touch base over one of the coffee breaks.

BE STRATEGIC WITH YOUR TIME. Asia Forum 2018 offers various parallel sessions and roundtables, and you will be invited to select prior to arrival your sessions of choice. Consider two things when choosing which sessions to attend. A session should fulfil either a content goal, e.g. talk will be educational, or it should fulfil an interpersonal goal, e.g. if you want to meet or support the person who is presenting.

KEEP AN OPEN MIND. Conferences can be useful venues to establish new and solidify your current professional relationships. Asia Forum 2018 offers you an opportunity to meet eminent thinkers from various stakeholder groups from the global health sector. We would encourage you to use the technical sessions, networking breaks and receptions to learn more about new projects and initiatives and explore synergies and potential collaboration opportunities.