Sustainable Innovation Expo

23-25 May 2016 UNEP Nairobi, Kenya



Acknowledgments

The Sustainable Innovation Expo 2016 was a collaborative effort among UNEP Divisions, Offices, UNEP's Secretariat of Governing Bodies and Stakeholders, and a number of external partners.

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- The Ministry of Environment and Food of Denmark and DANIDA
- The Zayed International Foundation for the Environment of Dubai, United Arab Emirates

The team that organized the Sustainable Innovation Expo 2016, which included nine thematic events and a Business Dialogue for Environmental Sustainability, was led by Jorge Laguna-Celis, Secretary of the Governing Bodies and Stakeholders (UNEP-SGBS), with overall coordination carried out by Kamar Yousuf and Mia Turner (UNEP-SGBS).

We would also like to recognize the participants for their intellectual contributions to the panel discussions in the Expo and UNEP staff who organized the specific events. They are:

- Achieving the 2030 Agenda for Sustainable Development through Innovative South-South Cooperation (RSO: Munyaradzi Chenje, Chris Ambala, and Qian Jia)
- Big Data and Innovation: Delivering Information for the SDGs Delivery (DEWA: Simone Targettiferri and Jacqueline McGlade)
- National and City Action to Achieve

- Health Benefits from Improving Air Quality (DTIE: Rob de Jong, George Mwaniki, Vered Ehsani and George Maina)
- Sustainable Energy and Technology
 (DTIE/ROA: Meseret Zemedkun,
 Djaheezah Subratty and Mark Radka)
- Empowering Women Entrepreneurs for SDGs' Delivery (DTIE: Nora Steurer and Rahel Steinbach)
- Less Waste, Better Environment, Healthy People - (IETC: Mahesh Pradhan, SGBS: Damdin Davgadorj)
- Investing in the Global Commons:
 Physical Capital Depreciates, but Natural
 Capital Appreciates if We Manage It Well
 (OfO: Brennan van Dyke and Stephanie van der Poel)
- Urban World 2030 (DTIE: Martina Otto)
- Healthy Oceans for Sustainable and Inclusive Blue Economies - (DEPI: Ole Vestergaard)
- Business Dialogue for Environmental Sustainability - (SGBS: Kamar Yousuf, Mia Turner; DTIE: Elisa Tonda; and OfO: Stephanie van der Poel).

We would like to acknowledge and thank the team of Henley Media/Climate Action for their collaboration in organizing the Sustainable Innovation Expo. We also would like to acknowledge and thank our UNV colleagues, Nicola Brennan and Isaac Okurut, who helped the drafting of this report. Finally, we would like to thank all the reviewers for their comments and suggestions.

Preface

The second session of the United Nations Environment Assembly provided a global platform for reviewing progress on the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals, particularly their environmental dimensions.

On the margins of the Assembly, the private sector was engaged in a landmark Sustainable Innovation Expo 2016, which brought together policymakers, civil society and the business community for the first time in nine thematic and moderated panel discussions which culminated in a high-profile Business Dialogue for Environmental Sustainability.

Underpinning the discussions that took place in the Expo were the aspirations of the 2030 Agenda, which has defined a way forward to end poverty, protect the planet and ensure prosperity for all. Global partnerships among governments, the private sector and civil society are essential to achieving the aspirations of this new global Agenda.

The Expo and its nearly 600 participants built on the UN Environment's existing partnerships with the private sector and created new ones. Ultimately, the Expo was not just about what the private sector could do for sustainable development, but what sustainable development could do for the private sector.

"Science and policy can direct our efforts, but only by integrating the efforts of the private sector can we scale up the impact to deliver the Sustainable Development Goals," said former UNEP Executive Director Mr. Achim Steiner, who completed a decade at the helm of UNEP on 14 June 2016

The UN Environment Assembly, the highest-level decision-making body of the UN on the environment, is the ideal platform for convening stakeholders to engage, share experiences and build these important partnerships that will ensure healthy thriving economies and societies and the sustainably-managed natural resources of our planet.

"The Expo has planted the seeds for the UN Environment's full engagement with the private sector in the preparations now underway for third session of the UN Environment Assembly in December 2017," said UNEP's new Executive Director Mr. Erik Solheim.

Sustainable Innovation Expo 2016

The UN Environment Assembly's Platform for Public-Private Cooperation

UN Member States recognized at the UN Conference for Sustainable Development in 2012 that economic or social progress at the expense of the environment, or environmental protection at the expense of people and people's livelihoods, are no longer viable propositions. The outcome of this Conference has resulted in the creation of the 2030 Agenda for Sustainable Development, and its 17 Sustainable Development Goals, which have given the global community an unprecedented opportunity to change the way it pursues development.

It has also become increasingly apparent that today's environmental challenges are far too large to be addressed by any single entity, but rather require the concerted and integrated efforts of all sectors of our increasingly interconnected world

For the new Agenda to be implemented, and be transformational, it will be necessary to put into place strong global partnerships that engage all

"Now is the time to mobilize the global business community as never before. The case is clear. Realizing the Sustainable Development Goals will improve the environment for doing business and building markets." UN Secretary-General Mr. Ban Ki-moon, UN Headquarters, 26 September 2015

relevant groups and stakeholders at all levels: global, regional and national. This is a call for a new culture of 'shared responsibility'.

Clearly, it is only through the involvement of all stakeholders that holistic and green solutions can be found for today's environmental problems. UN Environment has successful examples of such partnerships, but there is an urgent need to build on these and mobilize new partnerships that can accelerate the global transition to sustainable development.

Over the years, there has been growing recognition of the important role played by partnerships in addressing global challenges and finding global solutions. The benefits of forging these partnerships are manifold. Partnerships offer a mechanism to foster joint action and give an opportunity to non-traditional actors to become involved in the work of the United Nations and to contribute towards the international environmental agenda. Partnerships encourage sharing which fosters equity, a central aspect of sustainable development. Partnerships also allow different people and organizations to work collaboratively towards a common goal while exchanging views and understanding each other's needs. In this way, partnerships can find solutions to complex problems in a way that meets the needs of all in society and at the same time fosters cooperation and innovation.

The UN Environment Assembly is an ideal platform for bringing together different stakeholders from government, civil society and the private sector, all of which need to work together to tackle the shared and unprecedented environmental challenges the world is facing

and deliver on the environmental dimensions of sustainable development. While governments are pivotal in strengthening the policies and regulatory frameworks to create an investment climate that limits risks and ensures returns to realize the 2030 Agenda, the private sector has a critical role to play in fostering and funding sustainable solutions.

At the second session of the UN Environment Assembly (23-27 May 2016) in UN Headquarters in Nairobi, Kenya, the private sector was engaged as never before in the Sustainable Innovation Expo 2016, which was facilitated by UN Environment's Secretariat of Governing Bodies and Stakeholders and took place in parallel with the Assembly.

By engaging the private sector in the Expo, UN Environment has encouraged the business community to take greater responsibility for its environmental footprint and that of their partners.

The Expo brought together policymakers, civil society and the business community in nine thematic panel discussions over three days. Panelists focused on some of the most critical and prevalent issues in today's world, such as: sustainable energy; healthy oceans; air quality; rapid urbanization; big data and innovation; natural capital; and waste management.

The nearly 600 participants to the Expo included chief executive officers of major companies, institutional investors, foundations, banks, insurance companies, civil society representatives and thought leaders from non-governmental organizations, and think tanks. The outcomes and key messages of these panel discussions fed into a three-hour high-profile Business Dialogue for Environmental Sustainability.

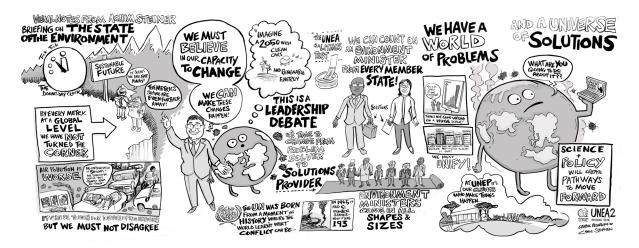
The Expo also fostered networking opportunities among the participants, some of which are now resulting in collaboration. Asian financial investors in the Expo have already expressed interest to collaborate with Uganda's Kiira Motors, which produced the prototype of Africa's first solar-powered bus.

With strong financial support from UN Member States, such as Denmark, the Sustainable Innovation Expo 2016 built on UN Environment's existing strategic partnerships in the private sector and created new ones.

The conclusions of the Expo have planted the seeds for UN Environment's growing engagement with the private sector, particularly in view of the new partnerships that will develop between UN agencies, governments, the private sector and the international community, amongst others, as a result of the ideas and experiences shared. Moreover, it is this outcome and these partnerships that are nurturing the preparations now underway for the third session of the UN Environment Assembly that will take place in December 2017.



Former UNEP Executive Director, Mr. Achim Steiner, opening the Sustainable Innovation Expo 2016.



The Sustainable Innovation Expo 2016 addressed the following nine thematic events which culminated in the Business Dialogue for Environmental Sustainability:

- Achieving the 2030 Agenda for Sustainable Development through Innovative South-South Cooperation
- 2. Big Data and Innovation: Delivering Information for the SDGs' Delivery
- 3. National and City Action to Achieve Benefits from Improving Air Quality
- 4. Sustainable Energy and Technology
- Empowering Women Entrepreneurs for SDG Delivery
- 6. Less Waste, Better Environment, Healthy People

- Investing in the Global Commons: Physical Capital Depreciates, but Natural Capital Appreciates if We Manage It Well
- 8. Urban World 2030
- 9. Healthy Oceans for Sustainable and Inclusive Blue Economies
- 10. Business Dialogue for Environmental Sustainability

1. Achieving the 2030 Agenda for Sustainable Development through Innovative South-South Cooperation

Background

- There is growing evidence that developing countries are taking leadership positions with regard to building more sustainable development pathways.
- To date, over US\$5 trillion reserves are now held by developing economies, which also account for 47% of global trade, with South-South flows making up about half of this total.
- By 2020, Brazil, China and India are expected to account for more world output than Canada, France, Germany, Italy, the United Kingdom and the United States combined.

South-South Cooperation is a framework for collaboration among developing countries on sharing best practices in all areas and in all sectors. From investment in infrastructure to the sharing of technological advances, this Cooperation is now widely recognized as a key mechanism for bringing development to the 'global South'. As a result, the developing world is growing richer in individual financial strength, and its collective impact on the global economy has also increased exponentially.

A clear global mandate to support South-South Cooperation has emerged over the years as its scope has expanded beyond government-to-government exchanges to include businesses as well as civil society, academia, financial institutions and research centers, on a broad range of economic, social, environmental, health and cultural issues. Indeed, thanks to these

exchanges several countries of the 'global South' have become economic powerhouses with significant influence in their respective regions and beyond. These developing countries are now taking charge of their development, identifying problems and finding and/or adapting solutions. New political and economic alliances also reflect the dynamism and increasing influence of countries with emerging economies in the areas of industrial growth, trade, investment, and technology.

Panelists in the Expo event on South-South Cooperation highlighted the importance of partnerships through cooperation and the exchange of best practices for achieving the sustainable development goals of the 2030 Agenda.

- Given the increasing complexity of the challenges faced by the global community, cooperation and collaboration has to evolve
- The UN should take the lead to promote the South-South partnerships among Member States:
- The private sector, scientific institutions, international organizations and civil society should be encouraged to participate and contribute in building South-South partnerships.
- South-South Cooperation, which started as an expression of solidarity, has evolved



over the years into fruitful cooperation across all regions.

- South-South Cooperation remains complementary to, rather than a substitute of, the traditional North-South Cooperation.
- There needs to be a closer examination on how South-South Cooperation and Triangular Cooperation, which involves two or more developing countries in collaboration with a third party, typically a developed country government or organization, are evolving globally in delivering on the Sustainable Development Goals.
- Capacity building and knowledge/bestpractice sharing, i.e. through regional Centers of Excellence, are the most

- important elements of South-South Cooperation partnerships.
- South-South Cooperation should be in the context of the global community's collective effort and not unique to specific countries.
- Having long-term strategic objectives developed through a collaborative twoway engagement is one of the key factors that ensure the effectiveness of South-South Cooperation partnerships.
- The integration of South-South and Triangular Cooperation in international development is critical.
- The young generation should be the key actors in building innovative partnerships and as a result, the engagement of academic institutions is crucial.

MODERATOR: Dr. Desta Mebratu, Deputy Director, Regional Office for Africa, UNEP **PANELISTS/SPEAKERS:**

H.E. Mr. Anote Tong, Former President, Republic of Kiribati

Mr. Jorge Chediek, UN Special Envoy on South-South Cooperation and Director, United Nations Office for South-South Cooperation

Dr. Meshgan Al Awar, Secretary-General, Zayed International Foundation for the Environment of Dubai, United Arab Emirates

Ms. Zhang Jieqing, Deputy Director-General, China-ASEAN Centre, Ministry of Environment Protection, China

Mr. George Mwenda, Deputy Manager, Consultancy R & D and Centre of Excellence, Geothermal Development Company Kenya

2. Big Data and Innovation: Delivering Information for the SDGs' Delivery

Background

- There are actually more pieces of digital information than stars in the universe.
- Every day we create 2.5 quintillion bytes of data¹.
- 90% of the world's data today was created in just the past two years².

The Sustainable Innovation Expo event on 'big data' directly contributed to the theme of the second session of the UN Environment Assembly: Delivering on the Environmental Dimension of the 2030 Agenda for Sustainable Development. The event looked at how large data sets can be analyzed and used to reveal patterns, trends and associations. Panelists from government, business and civil society shared best practices and gave key presentations, including a global survey on 'big data' strategies for official statistics, as well as country-focused presentations that illustrated how 'big data' can be used as a complementary source of information to manage globally important issues, such as crop production.

The event strengthened the awareness among countries on the potential of 'big data' in monitoring the Sustainable Development Goals and in filling information gaps and by providing evidence on the value of investing in new data sources and technologies which aim to encourage knowledge sharing among governmental, private sector and nongovernmental stakeholders on using big data for environmental monitoring and early warning systems.

"Data matters. The quality of data matters." Mr. James Donovan, CEO ADEC Innovations

- How to make 'big data' accessible and digestible for the public sector is a challenge: credible aggregators that convert complex data for the public use are needed.
- There is a need to ensure that developing countries can also have affordable access to 'big data'.
- Global frameworks need to be established to ensure 'big data' is utilized in a positive way and for the common good.
- 'Big data' can be used by governments to make smarter decisions on allocating resources to meet the 17 Sustainable Development Goals.
- Partnerships with governments are crucial to allow the private sector to be innovative.
- The impact of new technologies for 'big data' on jobs is enormous. Artificial intelligence impacts some 30% of jobs worldwide, which will create more skilled jobs and 'big data' actually creates the platform for new jobs.

United Nations (2015) Press Kit for the Sustainable Development Summit 2015: Time for Global Action for People and Planet, UNEP

MODERATOR: Ms. Jacqueline McGlade, Director, Division of Early Warning and Assessment and Acting Chief Scientist, UNEP

PANELISTS/SPEAKERS:

- Mr. James M. Donovan, CEO, ADEC Innovations, United States
- Mr. Moritz Kraemer, Managing Director, Standard and Poor's
- Dr. Arno Scharl, Head of Department, MODUL, University of Vienna, Austria
- Mr. Louis Otieno, Director of Corporate Affairs 4Afrika, Microsoft
- Mr. Omar Maher, Business Development Manager, Advanced Analytics, ESRI
- Mr. Pali Jobo Lehohla, Chief Statistician for Statistics of South Africa
- Dr. Gilbert Saggia, Country Manager, Oracle, Kenya

3. National and City Action to Achieve Health Benefits from Improving Air Quality

Background

- Air pollution results in an estimated seven million premature deaths annually - 1/3 of deaths worldwide2
- Vehicle emissions are the main source of outdoor air pollution. The increase in vehicle emissions is mainly the result of poor fuel quality and weak vehicle regulation around the world3.
- Over half of the world's population live in countries that have lower access rates to cleaner burning fuels and over 3 billion people continue to use solid fuels and open first for cooking and heating.

Each year, some seven million people around the world die due to everyday exposure to poor air quality caused by emissions from power generation, transport, industrial furnaces, brick kilns or wild fires. This makes air pollution the single largest environmental health risk. And the poorest pay the highest toll: nearly all of the 4.3 million deaths attributable to household air pollution occur amongst people, particularly women, living in low- and middle-income countries. Climate change and related desertification, is increasing the problem of air pollution in some parts of the world through raised levels of airborne sand and dust particles.

The size of the air quality challenge requires governments and public authorities to engage even more intensively in actions to tackle air quality problems especially in cities. Much has already been achieved. Citizens are more conscious of the linkages between air quality and health and there is now global support for action to improve air quality in policymaking platforms such as the UN Environment Assembly and the World Health Assembly, the decision-making body of the World Health Organization, and in multilateral environmental agreements.

The aim of the Expo event was to present and discuss how these initiatives and policies can be scaled up to address the global air quality challenge. The session began with an overview of the current state of knowledge about air quality worldwide and the improvement to air quality envisaged within the 2030 Agenda for Sustainable Development.

During the event, UNEP also launched the Actions on Air Quality report, which describes the steps being taken in countries around the world for achieving better air quality. The report also describes the growing global change, such as improved access to cleaner cooking fuels and stoves, renewable energy and cleaner transport. However, more needs to be done in other areas to halt the increase in air pollution and the ongoing threat on human life.

WHO (2014) Public Health, Environmental and Social Determinants of Health (PHE), WHO Department of Public Health, Environmental and Social Determinants, Geneva

"The establishment and implementation of standards is the first step towards improving air quality." Mr. John Saffell, Technical Director Alphasense

³ UNEP Regional Office for North America (2016) Improving Air Quality, Accessed 22nd June 2016 http://www.rona.unep.org/regional-priorities/improving-air-quality



- Monitoring and detecting equipment of air quality needs to be affordable.
- There is urgent need to address what the private sector needs from government and international organization to drive social change.
- Need to consider what exactly the private sector needs from governments and international organizations to drive social change. Is it technology or policy?
- The impact of air pollution on health and the cost of the issues that arise in the health sector are significant and need to be addressed

- The role of partnerships in ensuring positive impacts need to be maximized.
- Rather than quick and unplanned interventions for tighter standards, a clear long-term policy is required so that businesses have the time to develop their own strategy for introducing clean technologies.

MODERATOR: Mr. Christian Friis Bach, Executive Secretary, United Nations Economic Commission for Europe

PANELLISTS/SPEAKERS:

Mr. Achim Steiner, Executive Director, UNEP

Mr. Rob de Jong, Head of the Urban Environment Unit, Division of Technology, Industry and Economics, UNEP

Mr. Jonas R. Leones, Undersecretary for the Environment and International Environmental Affairs, Department of Environmental and Natural Resources of the Republic of the Philippines

Ms. Jacqueline McGlade, Director, Division of Early Warning and Assessment and Acting Chief Scientist, UNEP

Mr. Paul Isaac Musasizi, CEO Kiira Motors Corporation, Uganda

Mr. John Saffell, Technical Director, AlphaSense, United States

Professor David Warburton, Director, Developmental Biology and Regenerative Medicine Program, Children's Hospital Los Angeles, United States

4. Sustainable Energy and Technology

Background

- Hydropower is the most important and widely used renewable energy. As of yearend 2015, it represented 16.6% of total electricity production worldwide.
- Energy production is the most dominant contributor to climate change, accounting for around 60% of total global greenhouse gas emissions.
- One in five people globally still lack access to modern energy services.
- If people worldwide switched to energyefficient light bulbs, the world would save US\$120 billion annually⁴.

The Paris Agreement on climate change (COP 21), the adoption of the 2030 Agenda for Sustainable Development and its goal on energy, and the UN General Assembly decision to declare 2014-2024 as the UN Decade of Sustainable Energy for All, provide a confluence of international frameworks to promote sustainable energy globally, and in particular in developing countries and emerging economies.

The role of technology to improve modern energy services is crucial and needs to be easily accessible. Sustainable energy will in turn enable the use of other types of technologies for development objectives, such as electrification for improved health services. While these changes imply new opportunities, they also bring challenges. Countries and sub-national actors

"When you are starting a new innovation, you have to think, can I do this for 1,000 years. If the answer is no, you don't have a sustainable business. We can't speak in terms of 10-50 years. We need to speak in terms of 1,000 years." Mr. Carl Pendragon, Co-founder and CEO, Carbon Wealth

require human and institutional capacity building, adapted infrastructure, and access to financing, as well as affordable technologies. Globally, energy is closely linked to climate change mitigation measures, and there is increasing need for adaptation measures for energy infrastructure and in energy planning.

- A milestone for sustainable energy and for sustainable development is putting a dedicated goal for energy into Agenda 2030 i.e. in Sustainable Development Goal 7.
- Sustainable energy is essential to eradicate poverty, increase food production, provide clean water, improve public health, enhance education, address climate change, create economic opportunity and empower youth and women.
- The transition to sustainable energy systems and solutions provides large opportunities for the global socioeconomic development and paves the way to achieve the goals of the 2030

⁴ United Nations (2015) Press Kit for the Sustainable Development Summit 2015: Time for Global Action for People and Planet, UNEP

- Agenda in the context of sustainable development.
- Political will is a prerequisite for developing a clear and coherent policy and legislation for shifting to the use of renewable energy.
- Knowledge and technology transfer as well as international cooperation are crucial for promoting the use of sustainable energy in developing countries.
- For the promotion of sustainable energy and climate goals, the main focus should be on policy that contributes to a good

- enabling environment for investment.
- Regional cooperation and integration are needed. The regional power pools, such as Eastern Africa and Southern Africa Power Pools, are examples of best practices for regional collaboration in energy systems;
- Renewable energy should not be limited to electrification only but should also include transport and activities like cooking.



UNEA-2 President, Mr. Edgar Gutiérrez Espeleta, attending the Sustainable Innovation Expo 2016.

MODERATOR: Dr. Juliette Biao: Director, Regional Office for Africa, UNEP **PANELISTS/SPEAKERS:**

Dr. Oyun Sanjaasuren, UNEA-1 President; Former Mongolian Minister for Environment and Green Development; and Member of Parliament of Mongolia

Mr Joanes Atela, Senior Research Fellow and Leader of the Climate Resilient Economics Programme, African Centre for Technology Studies, Kenya

Ms. Miriam Ott, Policy Adviser for International Climate Finance, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany

Dr. Jakob Granit, Deputy Director, Stockholm Environment Institute, Sweden

Ms. Laura Williamson, Communications and Outreach Manager, REN21

Mr. Carl Pendragon, Co-founder and CEO, Carbon Wealth, Sweden

Mr. David Muthike, Strategy & Business Performance Director, Kenyan Electricity Generating Company, Kenya

5. Empowering Women Entrepreneurs for SDG Delivery

Background

- In Myanmar, over 58% of the time it is the women's task to collect firewood and women spend more than 217 hours a year on this activity5.
- In many countries, women are the household energy managers and they often disproportionately bear the burden of energy poverty.
- Only some 20% of the workforce in the renewable energy sector are women.

Women disproportionately bear the burden of energy poverty. They face significant health and safety risks from household air pollution, carrying heavy fuel wood, along with a lack of household lighting. But at the same time, women can be powerful agents of change in the transition to clean energy, for instance, as sustainable energy entrepreneurs. Yet, the potential of women as entrepreneurs in sustainable energy remains under-utilized. Instead they face gender gaps in access to finance, information, technology and markets.

Panelists in the Expo event focused on women's potential to accelerate universal sustainable energy access in the context of the new UN Environment - UN Women programme entitled, Women's Entrepreneurship for Sustainable Energy, which is designed to bring a wide variety of stakeholders together in partnerships.

"We need the adaptation ansd multitasking skills of women to succeed in achieving the SDGs." Dr. Oyun Sanjaasuren, President of UNEA-1 and Member of Parliament of Mongolia

Among other things, it will also promote women's participation in policy formulation and will improve access to finance for women entrepreneurs. The programme contributes to the achievement of multiple Sustainable Development Goals, in particular Goal 13 (to take urgent action to combat climate change); Goal 7 (to ensure access to affordable, reliable, sustainable and modern energy for all); and Goal 5 (to achieve gender equality and empower all women and girls).

- The role of women entrepreneurs is indispensible as they are important agents of change in the delivery of the Sustainable Development Goals.
- Planning for a future powered by sustainable energy needs to be genderinclusive and gender-responsive so that a sustainable future becomes a reality.
- Local, national, regional and international partnerships are crucial for empowering women to deliver on sustainable development.

⁵ ENERGIA International Network on Gender and Sustainable Energy (2015) Baseline gender assessment report: Upscaling Improved Cookstove Dissemination in Myanmar, StovePlus, GERES, European Union

 Women face gender-specific vulnerabilities, barriers and challenges in their daily lives. Empowering women as leaders and agents of change will result in the positive social, economic and environmental impacts needed for delivery of the Sustainable Development Goals. Good governance, corporate responsibility, inclusiveness and a world driven by women leaders are key factors in this process.

MODERATOR: Ms. Patricia Beneke, Director and Regional Representative, Regional Office for North America, UNEP

PANELISTS/SPEAKERS:

Dr. Oyun Sanjaasuren, UNEA-1 President; Former Mongolian Minister for Environment and Green Development; and Member of Parliament of Mongolia

H.E. Mr. Ohn Win, Union Minister, Ministry of Natural Resources and Environmental Conservation, Union of the Republic of Myanmar

Mr. Cheikh Fofana, Deputy Director of Environment, Ministry of Environment and Sustainable Development, Republic of Senegal

Ms. Christine Kalui, Executive Manager African Eco-labelling Mechanism/ Eco Mark Africa Secretariat

Ms. Norine Kennedy, Vice President, Strategic International Engagement, Energy and Environment at the United States Council for International Business

Dr. Seemin Qayum, Policy Advisor, UN Women

6. Less Waste, Better Environment, Healthy People

Background

- 1.3 billion tons of food (or one third produced globally) is wasted every year6.
- Up to 60% of the rubbish that ends up in the average household bin could be recycled7.
- E-waste is responsible for 70% of all toxic chemicals in landfills^a.

With the global population expected to grow from 7.3 billion to 9 billion by 2050 and 11 billion by the end of the 21st century, urbanization trends are indicating that more than 80% of humanity will be living in cities by 2050. However, urban infrastructure has not been able to keep up with the exponential growth in population coupled with rapid lifestyle changes. For example, existing waste management systems are often overburdened with increasing quantities and the changing composition of the waste. And due to inadequate understanding and appropriate legislation, much of the hazardous waste is unscrupulously exported to developing countries.

Improper waste management impedes the provision of basic necessities for public

health, such as clean water, clean air and safe food. Untreated waste contaminates soil and water through leakage. The burning of waste significantly increases air pollution having adverse impacts to human health. Like most environmental hazards, deficiencies in waste management also disproportionately affect poorer communities more, as wastes are often dumped in land adjacent to slums, exposing waste pickers to hazardous substances.

With a preventive and precautionary approach and the application of new environmentally-sound technologies, it is possible to manage waste in a sustainable manner. The opportunities and benefits of sustainable waste management include: less environmental pollution, reduced costs in managing waste, reduced greenhouse gas emissions, and contributions to equity and poverty alleviation. Improved health, health costs avoided, water contamination prevented, and the ensuing cost of alternative water supply are also important benefits.

"Waste management services are easily affordable." Mr. David Newman, President, International Solid Waste Association

⁶ United Nations (2015) Press Kit for the Sustainable Development Summit 2015: Time for Global Action for People and Planet, UNEP

⁷ The Guides Network (2016) Recycling Facts and Figures, Accessed 20th June 2016, http://www.recycling-guide. org.uk/facts.html.

⁸ Greenpeace (2016) Where does e-waste end up? Accessed 20th June 2016 http://www.greenpeace.org/international/campaigns/toxics/electronics/the-e-waste-problem>

- Prioritization of waste management is essential to meet the goals of sustainable development, especially in the context of developing countries.
- A holistic approach on waste management is timely, whereby solid, liquid and gaseous waste are addressed in an integrated manner.
- There is a need for national level policy and legislative initiatives in transforming waste as a resource.

- Suitable waste management services are affordable and cost efficient if governments and certain large private sector corporations are made more accountable.
- Capacity building support is required for developing countries in addressing wasteenvironment-health linkages.
- There is a need for partnerships in the implementation of the waste management agenda, while highlighting the role of private sector and environmentally sound technologies.



MODERATOR: Mr. Surendra Shrestha, Director, UNEP IETC, Japan **PANELISTS/SPEAKERS:**

Dr. Oyun Sanjaasuren, UNEA-1 President, Former Mongolian Minister for Environment and Green Development, and Member of Parliament of Mongolia

Mr. Naohito Watanabe, Senior Coordinator for Global Environmental Affairs, Japan

Mr. David Newman, President, International Solid Waste Association (ISWA)

Mr. Chencho Norbu, Secretary, National Environment Commission, Bhutan

Professor Judi Wakhungu, Cabinet Secretary, Ministry of Environment, Natural Resources and Regional Development Authorities, Kenya

Mr. Hussain Khansaheb, Director of Green Development, Ministry of Climate Change and Environment, United Arab Emirates

Mr. Rolph Payet, Executive Secretary, Basel, Rotterdam and Stockholm Convention.

7. Investing in the Global Commons:Physical Capital Depreciates, but Natural Capital Appreciates if We Manage It Well

Background

- There are 8.7 million species exist on the planet with 2.2 million species dwelling in the ocean depth9.
- 13 million people in the Horn of Africa are affected by drought10.
- 90% of China's 393 million hectares of grasslands are degraded to some degree11.
- Worldwide warming of 2-3°C above pre-industrial temperatures is likely to increase the risk of extinction for 20-30% of species¹².

The adoption of the Sustainable Development Goals and the Paris Climate Agreement (COP-21) clearly recognized that the health of the planet, extending from climate to oceans, land and forests, are essential for sustainable development. For too long the Earth's unowned natural resources -the oceans, the atmosphere and the space, which are our 'global commons', have been taken for granted or pushed to their

limits. Now is the time to change course. A new conversation is needed that looks for a new way of thinking and acting which recognizes that shifting to a low-carbon and resilient trajectory is essential for prosperity within the Earth's safe limits and can provide sustainable economic growth, health, jobs and security.

Panelists in the event pointed out that to protect the 'global commons', transformational change is needed in how energy is used, cities are built and people are fed. This will require actions on multiple fronts and at all levels of society that include:

- political mobilization, innovation and bold leadership from the public and private sector alike:
- a clear vision for catalyzing and innovative private sector investment in the natural capital that sustains our global commons; and
- a better assessment of the risks from "business as usual" and all the benefits environmental, social, and economic—of changing course towards sustainability.

Mora, C., Tittensor, D.P., Adl, S., Simpson, A.G.B., Worm, B. (2011) How many species are there on Earth and in the Ocean? Department of Biology, Dalhousie University, Halifax, Nova Scotia, Canada, Department of Geography, University of Hawaii, Honolulu, Hawaii, United States of America, United Nations Environment Programme World Conservation Monitoring Centre, Cambridge, United Kingdom, Microsoft Research, Cambridge, United Kingdom

- 10 ² IFRC (2011) Drought in the Horn of Africa, Preventing the next disaster. International Federation of Red Cross and Red Crescent Societies, Geneva
- 11 3 UNEP (2011) Our Planet, The Planet We Share, United Nations Environmental Programme
- 4 Office of Assistant Director-General (Forestry Department) (2012) Wildlife in a changing climate, Food and Agricultural Organisation of the United Nations, Rome

"While we have won some battles, the war to maintain the conditions for future prosperity and well-being is still being lost. Transformational change will require actions on multiple fronts and at all levels of society. It will require political and social mobilization and bold leadership." Ms. Naoko Ishii, CEO and Chairperson, Global Environment Facility

- The urgent need to protect our 'global commons'--the natural systems that make human civilization and economic prosperity possible--does not only present challenges; it also presents opportunities. The public sector must work with the private sector to explore these opportunities because we cannot shift to a low-carbon, sustainable global economy without channeling the trillions of dollars of private sector investment.
- Many private sector companies do not define their purpose solely, or even primarily, in terms of maximizing profits.
 They play a leadership role in society and are key enablers of change to improve consumers' choices
- Scientific research plays a vital role in maintaining the 'global commons'.
 There is no doubt that climate change is underway, with negative impacts on

- global supply chains. 'Big data' can be correlated to derive more sustainable solutions. Science supported by sound data can point policy makers and business to the critical entry points and highlight weaknesses. Public policymakers can break down barriers; provide critical support, particularly in the inception phase of translating innovation into enterprise.
- Solutions 100 years ago cannot be applied today. There is a need for more public-private partnerships to highlight innovative techniques to improve sustainability. Many companies are already engaged fully and many others can be engaged. A key is to bring innovations to the point where it is clear how they can be scaled up under a viable business model. Then investments will flow freely.



MODERATOR: Mr. Scott Vaughan, President and CEO, International Institute for Sustainable Development, Canada

PANELISTS/SPEAKERS:

Mr. Achim Steiner, Executive Director, UNEP

Ms. Naoko Ishii, CEO and Chairperson, Global Environment Facility

Mr. Jesse Moore, CEO, M-KOPA Solar, Kenya

Mr. James M. Donovan, CEO ADEC Innovations, United States

Ms. Rosina Bierbaum, Chairperson Scientific and Technical Advisory Panel, Global Environment Facility

Dr. Oyun Sanjaasuren, UNEA-1 President; Former Mongolian Minister for Environment and Green Development; and Member of Parliament of Mongolia

8. Urban World 2030

Background

- 3.5 billion people live in cities today. By 2030, almost 60% of the world's population will live in urban areas.
- The world's cities occupy just 2% of the Earth's surface, but account for 75% of carbon emissions, and urban dwellers use some 75% of the planet's natural resources.
- 828 million people live in slums today, and lack access to basic services¹³.

In 2015, national governments adopted three landmark agreements to advance global sustainability - the Sendai Framework of Action; the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals; and the Paris Climate Agreement (COP-21), all of which included strong references to action at the local and sub-national levels, underlining that it is clear these historic agreements will be delivered in an increasingly urbanized world.

While cities are part of the global challenges, they are also part of the solution. Cities have increasingly demanding citizens against a backdrop of scarce natural resources. At the same time, cities are providing new opportunities through innovation, capacity building, and improved economies of scale. Urban leaders are also demonstrating ambition that often goes beyond the traditional determination at the national level.

This event exhibited successful partnerships between national and local leaders of countries that have committed to achieving the global environmental goals. The event allowed for a dialogue among environment ministers, mayors and other sub-national leaders, as well as representatives of civil society and the private sector. These examples demonstrated that multilevel partnerships help raise the ambition at all levels and enable greater speed and scale of actions.

"Cities are centres of catalytic change." Ms. Sally A. Lee, Mayor of the City of Sorsogon, Republic of the Philippines

The Urban World of 2030 must be one that is inclusive, safe, resilient and sustainable. The ability of cities to mitigate and adapt to a variety of shocks and stresses requires healthy, low-carbon, resilient and resource-efficient technologies, as well as systems providing for housing, access to basic services and key infrastructure, and other services that cities provide. To make this vision a reality, partnership on different levels of government are critical for incorporating environmental challenges into decision-making, and for better aligning policies and actions at all levels. These partnerships will also enhance and enable the needed market transformation and ultimately improve the quality of life of city dwellers.

¹³ United Nations (2015) Press Kit for the Sustainable Development Summit 2015: Time for Global Action for People and Planet, UNEP

- Innovation capacity and density of cities are allowing for new integrated solutions that provide services, such as housing, access to energy, water and mobility in a low-carbon, resource efficient and resilient manner.
- Partnership at different levels is critical to bring about catalytic change in the following ways: between the national

- and local levels of governance to ensure coherence of policies and responsibilities; between cities to share knowledge and good practices, and between cities and the private sector to assist with implementation.
- The private sector is interested in cities as many of the solutions provide new business opportunities with good returns on investment.



MODERATOR: Ms. Ligia Noronha, Director, Division of Technology, Industry and Economics, UNEP

PANELISTS/SPEAKERS:

Ms. Sally A. Lee, Mayor of the City of Sorsogon, Republic of the Philippines

Mr. Toshiyuki Yamazoe, Senior Adviser for International Business Relations, City of Toyama, Japan

Mr. Alexis Lapiz, Chief, Strategic Partnership Division, Climate Change Commission, Republic of the Philippines

Mr. Keitaro Tsuji, Deputy Director of International Strategy Division, Global Environment Bureau, Ministry of Environment, Japan

Dr. Evans Kidero, Governor of Nairobi, Kenya

Ms. Norine Kennedy, Vice President, Environment, Energy and Strategic International Engagement, United States Council for International Business

Mr. Yunus Arikan, Head of Global Policy and Advocacy, ICLEI - Local Governments for Sustainability

Mr. Alioune Badiane, Director of Programmes, UN-Habitat

9. Healthy Oceans for Sustainable and Inclusive Blue Economies

Background

- Oceans cover three-quarters of the Earth's surface, contain 97% of the Earth's water, and represent 99% of the living space on the planet by volume.
- Globally, the market value of marine and coastal resources and industries is estimated at US\$3 trillion per year, or about 5% of global GDP.
- As much as 40% of the world's oceans are heavily affected by human activities, including pollution, depleted fisheries and loss of coastal habitats.
- An estimated three-quarters of global fish stocks have either been over-exploited or are currently being exploited at their maximum capacity.
- By protecting marine and coastal biodiversity, we can support the livelihood of more than three billion people.

Healthy oceans are integral to the 2030 Agenda for Sustainable Development, as they underpin the "blue economies" sustaining human wellbeing. As we develop these "blue economies", we need to consider the delicate balance between resource use and the ecological ability of oceans to provide services. The marine environment provides humanity with a myriad of services ranging from food security, energy and climate regulation to nutrient cycling and storm protection. Used sustainably, these in turn can underpin lives, livelihoods and economies in sectors from tourism to fisheries. Yet, despite this importance, the last three to four decades have

seen increasing ocean and coastal degradation as a result of human uses and impacts, including from land-based sources, overfishing and increasingly, climate change, undermining the prospect for long-term sustainable development.

In this event panelists identified challenges and explored solutions for integrating environmental, social and economic objectives for the sustainable development of oceans and coastal areas as a basis for long- term viable and inclusive "blue economies". Among the key issues identified was a need for more effective governance frameworks linking maritime sectors, government actors and local users to deliver the 2030 Agenda on oceans and coasts. This includes fiscal innovation of ocean-based economies towards inclusive and equitable arrangements for the sharing of ocean and coastal values and benefits.

"Lack of scientific knowledge of what would happen without a Blue Economy is scary." Mr. Jan Olsson, Ambassador on Environment and Oceans, Sweden

- Despite the importance of oceans, the last decades have seen increasing ocean and coastal degradation as a result of human impacts, both from land-based sources, as well as a range of maritime activities including overfishing, mining, off-shore energy, and increasingly, climate change. The cumulative impacts of human activities represent a combined strong effect on coastal and marine ecosystems and undermine the prospect for long-term sustainable blue economies.
- Investing in healthy oceans and coastal management and governance provides good return and contributes to national economies and development. On the other hand, insufficient investment in ocean management generates environmental liabilities and costs.
- Public policy actions need to carefully account for the full value of goods and services from 'blue capital', communicate

- to the public and planners, and prepare sustainable approaches to planning coastal development (e.g. investments in mangroves is often cheaper than constructing sea defenses and provide multiple other benefits including carbon sequestration). The world has lost 50% of its mangrove forest in the last half century.
- Land-based activities impact marine resources and so policies are needed that join up land-based and sea-based activities.
- Public engagement in ocean issues will underpin public policy responses, in turn leading to new and improved systems for ocean governance that support blue economies, healthy oceans and social well-being.
- Marine investments require careful and knowledgeable planning in order to make sure that investments support sustainable development pathways, rather



than offering short-term quick wins that hamper or destroy longer-term prospects. The creation of a possible 'Blue Economy Development Framework' could facilitate the active participation of a spectrum of governments, multilateral development organizations, the private sector and civil society to ensure long-term viable "blue economies".

- The engagement of coastal communities in practical action to conserve and

manage coastal ecosystems is another essential step. Poor fishers and coastal people need support to be able to devote scarce time and resources to conservation. This can be done through incentive-based management schemes, enabling poor people to take a short-term hit to their livelihoods in order for longer-term benefits to them, local communities and (sometimes) the planet as a whole.

MODERATOR: Mr. Andrew Revkin, Science and Environmental Journalist, New York Times, United States

PANELISTS/SPEAKERS:

Mr. Achim Steiner, Executive Director, UNEP

Mr. Andrew Norton, Director, International Institute for Environment and Development

Mr. Justin Mundy, Director, International Sustainability Unit, Prince of Wales' Charitable Foundation, United Kingdom

Ms. Emmanuelle Maire, Head of Global Sustainability, Trade and Multilateral Agreements, Directorate-General for Environment, European Commission

Dr. Deon Nel, Global Conservation Director, World Wildlife Fund

Mr. Jan Olsson, Ambassador on Environment and Oceans, Ministry of the Environment and Energy, Sweden

10. Business Dialogue for Environmental Sustainability

The Business Dialogue for Environmental Sustainability reflected on the outcomes of the nine thematic panel discussions that took place in the Sustainable Innovation Expo 2016, as well as the Symposium on Mobilizing Investment for Sustainable Development. It linked leaders of the private sector with policymakers to look at the global environmental challenges, discuss innovative solutions and recommend partnerships for achieving sustainable development.

The three-hour high-profile event also provided a unique opportunity for government officials and leaders of the private sector and civil society organizations to engage on a "joint vision" that will contribute to building the foundation for policies that will define the systemic and institutional approach for engaging the business community as a long-term partner for achieving sustainable development and an inclusive green economy.

The Business Dialogue addressed concerns such as:

- How will the private sector make choices and transform business models so that the sustainability of the planet's natural resources is not comprised?
- Policy coherence and integration will necessitate a "joint vision" that is a radical transformation in how policymakers and private actors operate and prioritize issues relating to sustainable development, the use of natural resources and the protection of the environment.

"Growth is key, but not on the back of people and the planet". H.E. Ms. Amina J. Mohammed, Minister of Environment, Nigeria

The Business Dialogue consisted of three sessions of moderated panel discussions. In Session-1, the challenges and trends for achieving sustainable development were addressed and panelists deliberated the role of the private sector in achieving sustainable development. They addressed questions, such as the following:

- Why do the Sustainable Development Goals matter for businesses?
- How is the framework provided by the Goals transforming the way in which businesses shape their strategies, operations, and relationships?
- How are businesses impacted by sustainability challenges? How do we understand the links between environmental sustainability and the private sector's strategies, operations, and relationships? Where are the gaps in our knowledge, i.e. in innovation and/ or science? Competition sometimes does not allow for businesses to operate sustainably. How could this be addressed?

In Session-2, panelists discussed and identified sustainability solutions to address the challenges for achieving sustainable development and explored opportunities such as:

- How could these challenges and risks be turned into opportunities?
- How could future businesses identify opportunities in the move towards sustainable development?
- How can the public and private sectors work together so private investment enhances natural capital and respect our planetary boundaries?
- Can the private sector do it alone?

In Session-3, the Business Dialogue attempted to define the elements of the 'joint vision' that will fuel a global call for action and strengthened future collaboration/partnerships with the private sector in institutions like UN Environment which explored partnerships and responded to questions, such as:

- How can we build on these opportunities to shape collaborations/partnerships?
- What are the key elements of successful partnerships to deliver the environmental dimension of the Sustainable Development Goals?

"The opportunities are enormous on how to bring together the public-policy sector to the business sector." Mr. Daniel Calleja, Director-General of Environment, European Commission

- When considering the role of the private sector, it is important to take into account the diversity of the private sector which include:
 - Individual companies
 - Group of companies through sectoral or value-chain initiatives
 - Small and Medium Enterprises
 - Industrial Associations
 - Foundations
 - Business intermediaries/ service providers / collaborating centers
- Recall the high level of ambition which underpins the 2030 Agenda, including the Sustainable Development Goals; the Addis Ababa Action Agenda, and the Paris Climate Agreement (COP-21).
- Reinforce the fact that we need to change our narrative and deliver positive messages for partnerships in achieving the 2030 Agenda.
- Reflect on the radical changes in the way businesses operate which require the following:
 - A systemic transformation that enables addressing the complexity reflected in the 2030 Agenda;
 - A deeply transformed business strategy, managerial mindset and organizational culture;
 - A deep rethinking and redesigning of current, as well as future products and services;

- Act responsibly and to engage the entire value chain in significantly different ways and to create much more inclusive and low impact business models;
- Acknowledge the importance of small and medium enterprises when implementing the 2030 Agenda; and
- Recognize that no one can achieve this ambition in isolation and that collaboration and partnership is indispensable to achieve the 2030 Agenda.

Session-1

MODERATOR: Mr. Andrew Revkin, Science and Environmental Journalist, New York Times, United States

PANELISTS/SPEAKERS:

H.E. Ms. Amina J. Mohammed, Minister of Environment of Nigeria

Mr. Harry Verhaar, Head of Global Public and Government Affairs, Philips Lighting

Mr. Jens Holst-Nielsen, Director, International Trade and Market Development, Confederation of Danish Industry

Mr. Craig Hanson, Global Director for Food, Forests and Water, World Resource Institute

H. E. Mr. Esben Lunde Larsen, Minister for Environment and Food, Denmark

Ms. Andia Chakava, Director, Kenya Chapter New Faces, New Voices

Session-2

MODERATOR: **Mr. Scott Vaughan,** President and CEO, International Institute for Sustainable Development, Canada

PANELLISTS/SPEAKERS:

Mr. Paul Isaac Musasizi, CEO, Kiira Motors, Uganda

Dr. Jane Nyakang'o, Director, Kenya National Clear Production Centre

Ms. Sally A. Lee, Mayor of the City of Sorsogon, Republic of the Philippines

Mr. John Ahlrichs, Vice President, Planet Labs, United States

Mr. Daniel Calleja, Director-General, Directorate-General for Environment, European Commission

Session-3

MODERATOR: Ms. Ligia Noronha, Director, Division of Technology, Industry and Economics, UNEP **PANELLISTS/SPEAKERS:**

Mr. Achim Steiner, Executive Director, UNEP

H.E. Mrs. Sharon Dijksma, Minister for the Environment, the Netherlands

Mr. Carl Pendragon, Co-founder and CEO, Carbon Wealth, Sweden

Ms. Lucy Muchoki, CEO, Pan African Agribusiness and Agro Industry Consortium, Kenya

Mr. Yvo de Boer, Director-General, Global Green Growth Institute, Republic of Korea

Mr. Justin Mundy, Director, International Sustainability Unit, Prince of Wales' Charitable Foundation, United Kingdom



Conclusion

The events of the Sustainable Innovation Expo 2016 underlined that while the role of the private sector in delivering on the goals of the 2030 Agenda for Sustainable Development is clear, global public-private cooperation is an essential ingredient as the challenges are too large for any single entity. And while such collaboration is not a new concept, and examples were given during the Business Dialogue, it needs to be scaled up.

The private sector is already making a proactive effort and a strategic commitment to deliver on sustainable development in the following areas:

- The energy and transport sector, where such collaboration is providing new transport and renewable energy solutions which contribute to air quality and health improvement, as well as climate change benefits:
- The waste sector through a leading role in the waste industry in the adoption and dissemination of circular economy models, which reduce waste generation and improve health conditions;
- Through natural capital conversation initiatives, which promote innovative business models and financial mechanisms that minimize environmental degradation along the entire value chain;
- With small and medium enterprises
 through the adoption of resource-efficient
 and cleaner production practices, and
 environmental technologies, and the
 active engagement in global value chains
 providing sustainable good and services
 to the market

In all of these instances, the private sector plays a fundamental leading role in advancing the global

goals of sustainable development along with an enabling role for the achievement of certain targets and working to promote a supportive environment for stakeholders to accelerate progress in the achievement of those targets in the following areas:

- In the context of 'big data' and innovation, by facilitating access to resources and technologies that unfold the potential of 'big data' in filling information gaps and monitoring progress towards the Sustainable Development Goals;
- By strengthening the infrastructure and services required for an inclusive, safe, resilient and sustainable urban world, supported with ecological, healthy, lowcarbon, resilient and resource-efficient systems and technologies;
- By removing sources of impacts, including from land-based sources of contamination and overfishing, and enabling the sustainable development of oceans and coastal areas as basis for long-term viable and inclusive "blue economies"; and
- By providing opportunities to women entrepreneurs, who will become powerful agents of change in the transition to clean energy?

The partnerships and initiatives which were discussed in this first Business Dialogue for Environmental Sustainability have already begun to fuel a wider call for action and an inspired vision of strengthened future collaboration and partnerships with the private sector, government institutions, civil society and institutions like UN Environment.



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