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CLIMATE CHANGE IMPACT ON INDIGENOUS PEOPLES' WATER SECURITY, LAND USE, AMONG ISSUES

AS DPI/NGO CONFERENCE HOLDS SERIES OF ROUND-TABLE DISCUSSIONS

"The climate was changing on climate change" and, with that, there was a growing appreciation that much more needed to be done, and quickly, said a panellist at a round-table discussion today, as the DPI/NGO Conference, with its focus on the impact of climate change, continued at Headquarters.

What had happened in the past year had been absolutely remarkable -- there had been reports, discussions, and headlines on the issue, including at every summit, said panellist Richard Kinley, Deputy Executive Director of the Secretariat for the United Nations Framework Convention on Climate Change. Many new truths had been learned, some of them inconvenient. There was now a solid and scientific understanding and consensus that climate change was unequivocal.

Addressing a panel entitled "The Economics and Politics of Energy and Climate Change", he said, however, that that sense of urgency still had not taken hold in intergovernmental negotiations because of fear of economic hardship. On the one side, industrialized countries feared that acting aggressively would mean losing an economic advantage. Developing countries worried that action on climate change would impact poverty eradication and economic development. However, that reluctance was based on a misconception that economic growth and climate protection were mutually exclusive. Rather, they reinforced each other.

The topics for the other round-table discussions were: "Water Security and Climate Change"; "Indigenous Peoples, Culture and Traditional Knowledge"; and "Coping with Climate Change -- Best Land Use Practices". Two more round-table sessions will be convened tomorrow morning, before the Conference concludes in the afternoon with the adoption of a declaration.

Assessing the effects of climate change on water security, including ways in which the projected increase in both droughts and floods would exacerbate existing strains between impoverished peoples and their access to water, Cecilia Ugaz, Deputy Director of the United Nations Development Programme (UNDP) Human Development Report Office, said that, by the end of today, 5,000 children will have died because of lack of access to water. The numbers associated with the water crisis were already staggering: more than 40 billion hours per year were devoted to women's collection of water; 1.1 billion people had no access to water; and 2.6 billion people were without sanitation.

During the interactive session on the impacts on indigenous peoples, the panel provided examples of local initiatives that demonstrated the indigenous peoples' commitment to defend their cultures through active participation in efforts to reduce human-induced causes of the phenomenon. In many parts of the world, the indigenous communities were among the first victims of climate changes.

One panellist, a representative of a non-governmental organization and member of the Maasai tribe in Kenya, Daniel Salau Rogei, asserted, "We are all in the same sinking ship, and it's going to

take everybody working together to scoop all the water out." Fiu Mata'ese Elisara-La'ulu, Director of Ole Siosimaga Society (OLSSI) in Samoa, said that bystanders, who knew the world was in crisis, but did nothing, were just as bad as the architects of the crisis. He urged Government leaders to ask indigenous people about the effects of climate change before taking any decisions, and tribal peoples not to act under pressure from global processes driven by big Governments.

The panel on best land use practices focused on, among other things, innovative ways to minimize and cope with the negative impacts of climate change, primarily the erratic weather patterns, which aggravated famine and mass migrations in already burdened areas. Rosiland Peterson, California President and Co-Founder of the Agriculture Defense Coalition (ADC), expressed concern about experimental weather modification programmes that were supposed to explore initiatives aimed at countering the effects of global warming, but which could, in fact, negatively impact a crop production or cause other problems.

She said that if mitigation efforts continued along those lines, particularly putting chemicals into the atmosphere that could reduce photosynthesis, growing seasons could be altered and pollinators could be affected. Another example was the use of solar panels to create conditions that extended the growth season of some crops. Similarly, she was concerned about persistent jet contrails, which science had shown could expand and spawn man-made "clouds" that trapped heat in the atmosphere. "How do you like your skies, natural or man-made?" she asked.

The Conference will reconvene at 10 a.m. Friday, 7 September.

Panel on 'Water Security and Climate Change'

Introducing the panel, moderator FIONA HARVEY, an environmental correspondent with the *Financial Times*, noted that many, many people in the world today did not have access to water or sanitation. That was a huge obstacle to development and human progress, and the problem would worsen with climate change. Hopefully, today's panellists would not only introduce some of the problems, but offer some solutions as well.

Ms. Harvey was joined by: Eleanor Jones, Managing Director, Environmental Solutions Ltd.; Cecilia Ugaz, Deputy Director, Human Development Report Office, United Nations Development Programme (UNDP); Eilon Adar, Director, Zuckerburg Institute for Water Research, Ben Gurion University; and Galen Fulford, Founding Partner, The Ecovillage Institute.

Ms. UGAZ, noting that, in the past two years, UNDP had devoted the United Nations development report to environmental issues, said that last year, the report had focused on access to water, while this year's report, to be launched in November, would be about climate change. There were two distinct aspects to the present water crisis. The first concerned water for human consumption, and the second was about water for livelihoods, which was becoming a pressing issue given the presence of climate change. In terms of water for livelihoods, 1.1 billion people around the world lacked access to water, and 2.6 billion lacked access to sanitation. The consequences of that on human development were enormous. Water for livelihood was about water as a resource for production, and involved the concept of water stress and water scarcity.

In terms of the human cost of the water crisis, she said that by the end of the day, 5,000 children would have died because of lack of access to water. At this precise moment, more than half the population of developing countries suffered illnesses owing to a lack of water and sanitation. More than 40 billion hours per year were devoted to women's collection of water. The numbers were staggering. Humanity was tolerating the crisis, and in a way that was unacceptable. The crisis was also marked by enormous inequality; it was a crisis of the poor. More than half of the 2.6 billion without sanitation lived on less than $2 per day, as did the 1.1 billion people without access to water.

In Benin, for example, nearly all of the richest population had access to water at home, but the poorest had to collect water from many different sources, including non-treated sources, so there was huge discrimination. In her country of Peru, nearly all of the rich had 100 per cent access to water; at the bottom, an "outrageous" number of hours was spent just trying to satisfy that basic need. That was

a problem, not just of Africa or Latin America, but of the developing world as a whole. Also, the poorer a population, the more it paid for water, because the main source of water was far away. So, poorer people paid up to 10 times the price as those connected to the main water supplies.

In terms of fulfilling the Millennium Development Goals on time, specifically halving by 2015 the percentage of the world's population without water and sanitation, it was very likely that the world would achieve the water target, but that was an average, which was hiding, for instance, the fact that sub-Saharan Africa would not fulfil that goal until 2042, she said. It would not likely fulfil the sanitation target until 2076. "So, we are not doing well." The investment required to fulfil the Goals was $10 billion per year. For sub-Saharan Africa, that would result in a return of $38 billion, or a $28 billion net benefit. So, in purely economic terms, investing in water made sense.

Mr. ADAR spoke about the effect of climate change on water scarcity. Water security in terms of quantity and quality posed problems for both developed and developing countries. The fact that developed countries would suffer in the future guaranteed that something would be done. He discussed the process of diverting water downstream in various countries and regions, and the correlation between relatively high temperatures and high content of carbon dioxide in the atmosphere. He also reviewed past natural climatic changes and its impact on the population globally, especially vulnerable populations, water security and land use, and his expectation that the world would become ever warmer.

As for what should be done to meet increased demand for water with better quality, he stressed the need for increased efficiency in water use, as well as the need to come up with "new water", including from desalination. It was not too late to influence the present situation and avert a catastrophe. There must be investment in education and science, in order to develop solutions that, in 25 to 30 years, could lead to providing the global population with enough water.

He said that the conventional policy of sustainable development would not enable humanity to avoid or mitigate water shortages or provide water security. The world had to produce additional water, for which he suggested "progressive development". That was a new policy for developing arid and semi-arid zones, in order to mitigate the impact of climate change on those regions. It required advanced methods of exploitation of water, which should be seen as a commodity, like oil. It was easier to come by alternative sources of water than energy, but they must be developed together; one could not be solved without the other.

Offering a perspective from the Caribbean region, Ms. JONES said that extreme events were part and parcel of the region's picture, and global warming and climate change would exacerbate some of the present challenges. Disaster management could turn talk into action. Climate change, unfortunately, "sort of floats above the heads of most persons", and must be brought down to reality. In the Caribbean, the relationship between climate change and water security reflected the varied nature of the water supply systems.

She said that abundance and scarcity played out year-round, as access to safe water eluded the populations of several Caribbean countries. There were repeated incidences of natural hazards, which wreaked havoc on surface and ground flows, and global warming and climate change were projected to exacerbate those conditions. At the same time, the issue of water supply was as much a function of governance and related factors as natural events. Budgetary diversion for response and repair, instead of for prevention, was generally the norm. There were also inappropriate and inadequate sanitation systems.

Several disaster risk management initiatives had been introduced in the region since 2001, she acknowledged, recalling the multiple strikes and multi-country impacts of 2004 and 2005. What was needed was building capacity for change. She recommended adaptation strategies, and mainstreaming development planning and maintenance of disaster risk management into the water sector. Also required was budgetary and capital expenditure. Another major challenge for the region related to watershed management. In addition, data collection should be instituted within all agencies. Finally, hazard identification and vulnerability mapping must be accompanied by the required public investment.

Mr. FULFORD said that, if the situation warmed to the 6-degree range and the world saw runaway global warming, "you could pretty much forget about water security". There was tremendous momentum driving the culture of gas emissions. History had shown, however, that the world had the ability to unite and the power to change course. For example, there had been some success in combating ozone depletion, mobilizing for space programmes, and so forth. He introduced various schemes being undertaken by The Ecovillage Institute to: establish greater water security within the changing climate; prevent water contamination; and circulate water for maximum benefit. He highlighted a number of simple systems tried around the world that did not create greenhouse gases to clean water.

He said his own community in Scotland recently slashed its "carbon footprint" by 30 per cent in a process that began with the community, rather than with the big policies. The idea that shifting to a carbon-balanced society led to great distress was a complete myth. In fact, it was a fantastic revelation and led to much contact between people and families, which "we've actually been missing out on".

When the question-and-answer session began, the panel tackled a question about whether politicians and Governments should be asked to view water security as an issue of international security. Mr. ADAR said that, in the Middle East, water was kept out of conflict. Despite the struggle, and in view of the fact that all major water resources in the region were cross-border or transboundary resources, "we do not dare to avoid or try to cut on water supply, in spite of what is going on". Many people claimed that water scarcity was a trigger for a conflict, that in semi-arid zones the need for water would encourage or trigger conflicts, but the experience in the Middle East was "so far, so good."

He added that Israel daily provided water to Gaza, and also supplied the West Bank with water. "People do not dare touch the water supply system," he continued. As for efforts involving the sharing of water resources and technologies between Israelis and Palestinians, he said he was a scientist and not a politician, but added that the only active commission left over from the Oslo accord was the Water Commission, which met on a weekly basis in the region in order to resolve the problems of water, including how to share and provide enough water to all. Israel did everything possible "not to have a thirsty neighbour".

Israel would have to get used to the idea that it would have to treat the sewage of the West Bank because the safest place to treat the water was in Israel itself, lest it risk endangering the groundwater reservoirs, he said.

Regarding governance, specifically whether an international agency should be created to look at water-related issues, Ms. UGAZ said that the United Nations was well placed to address those issues. There was the World Meteorology Organization, UNDP, and the United Nations Environment Programme (UNEP). The best thing to do was to try to coordinate better. The issue of climate change was multifaceted and required much more solid cooperation among the agencies.

In terms of the private versus the public sector, Ms. JONES said that, going forward, it was no longer prudent to separate the two. On this issue, one tended to look at the private sector as "the bad guys". However, through government policy, it was important to involve the private sector and consider ways to build effective partnerships for water management.

Mr. FULFORD added that private sector involvement was "more possible" in the realm of wastewater treatment and water recycling than in the area of potable water. On the latter side, private sector involvement was "quite dangerous".

Water partnerships between the public and private sectors was a very good idea, Ms. UGAZ asserted, although she agreed that the privatization of water in some cases had been "really terrible", such as in the Philippines, where the role of the private sector had been overstated. Private sector involvement worked when everybody was connected. Where a population was below the poverty line, thought had to be given to ways to establish partnerships; otherwise, the private sector would not take the risk, at least not from the outset.

Morning Panel Discussion on Indigenous Peoples and Traditional Knowledge

Another morning round table focused on climate change and its impact on indigenous peoples and was moderated by Lucy Mulenkei, Executive Director, Indigenous Information Network (IIN). She was joined by Fiu Mata'ese Elisara-La'ulu, Director of Ole Siosimaga Society (OLSSI); Daniel Salau Rogei, NGO Representative, Simba Maasai Outreach Organizations; Mikhail Todishev, Russian Association of Indigenous Peoples of the North; and Marcos Terena, Professor, Traditional and Spiritual Knowledge of the Indigenous Peoples.

In introductory remarks, Ms. MULENKEI said that indigenous people were among the most vulnerable people in the world. They were considered "backward" by many because they clung to their traditional cultures, institutions and practices. The information revolution had largely passed them by, especially those who lived in rural and remote areas. The challenges indigenous peoples faced were exacerbated by the effects of climate change, the destruction of their lands and the depletion of their resources. She urged the panellists to share their personal experiences about the impact on their diverse cultures and ways of life, particularly since, in many cases, they were the first victims of climate change.

Opening the round table with a brief statement from the floor, VICTORIA TAULI-CORPUZ, Chairperson of the United Nations Permanent Forum on Indigenous Issues, said that native and tribal peoples' dependence on agriculture, forests, fishing and hunting had led them to be among the first -- and loudest -- voices calling for action on climate change. They had also been at the forefront of worldwide efforts to resist massive mineral extraction from traditional lands and destruction of forests and mountain ranges. The Permanent Forum had chosen to focus on climate change at its next session, and Arctic indigenous peoples -- the first to sound the alarm about global warning -- would be among the delegations making special presentations about the impacts of climate change on their traditional cultures and livelihoods.

Mr. ELISARA'ULU, from Samoa, said that the people in his region often called the Pacific the "Liquid Continent" because, although it was home to just over 7 million inhabitants, the area covered nearly one third of the planet. It was also thought of as a "forgotten continent" because in international forums it was lumped with Asia -- as in Asia Pacific Region, and so forth. As one would expect, when development dollars were distributed, all the money went to "big Asia", not the "little Pacific". This made it very difficult to tackle development challenges, particularly as climate change began to take a greater toll on their livelihoods and sources of income.

He said that 95 per cent of the people in the Pacific region were indigenous and they were speaking out about climate change, theft of traditional knowledge and other pertinent issues -- often over the objections of many of their own Governments and leaders, who were trapped by colonial attitudes and thinking. Indeed, global warming was a critical issue for small island developing States. No one should shrug their shoulders when they heard the people of Tuvalu talking about their homeland being washed away by rising tides and higher sea levels. Tuvalu was a Member State of the United Nations, and under the Organization's Charter, deserved the same level of attention as every other Member State.

Every single Member of the United Nations had the duty to respect other Members. They were also accountable for their actions, whether it was to reduce carbon emissions and greenhouse gases, or to fully adhere to international declarations and conventions on the respect of the rights of indigenous people and the protection of biodiversity. But, sadly, that seemed not to be the case. Tuvalu and other Pacific nations were more marginalized than ever. "You see, we are forever trying to catch up with a tomorrow that has actually already passed us by. Right now we need leadership that does not exploit and does not ignore the voices of the people," he said.

Mr. ROGEI, a member of Maasai tribe in Kenya, said that his community was nomadic and largely made of farmers dependent on their traditional lands and affected by changing weather patterns. As such, they were marginalized in development -- as were most indigenous peoples -- even by their own Governments. Indigenous people were ever mindful of the environment and protection of natural and cultural diversity. The Maasai considered themselves to be part of nature and, indeed, more than

75 per cent of Kenyan wildlife species were found in Maasai territory. But the territory was under threat, from climate change, as well as from encroachment and predation by logging companies and other international business concerns that were actively wiping out natural resources and biological species.

He went on to describe, with the help of a slide presentation, the shrinking of the ice caps on Mount Kenya and Kilimanjaro. What made that phenomenon worse was that the rivers that were fed by the normal seasonal thawing of the ice were also drying up, he said. Global warming's tragic domino affect was being felt all the way down to the valleys, as pastures and farmlands struggled to support life, as they received less and less water each year.

Mr. TODISHEV said that, not unlike the situation in Africa, indigenous people in the northern regions, Siberia and the far north-east were also suffering badly from the effects of global warming. The success of those peoples, who depended on fishing, hunting and agriculture, depended on the success of their fragile environment and its resources. As bears and other wild game disappeared, so did local villages and the people that lived in them. Worse, unique indigenous cultures, traditions and languages disappeared as well.

Changes in migration and foraging patterns of reindeer herds, sparked by fluctuating weather patterns, also spelled trouble for many northern native communities. Those who depended on hunting walrus were also bearing the brunt of melting ice caps and glaciers. He urged the non-governmental organization representatives present to call on the General Assembly to adopt the Declaration on the Rights of Indigenous People by the end of the sixty-first session this year.

Mr. TERENA expressed concern that there were not many children in the room. "Where is our future," he asked, "is it out on the streets, with sunglasses, fast cars, beer and drugs?" The elders attending the DPI/NGO Conference had a duty to save the planet and secure the future for the young. They had a duty to press their Governments to do more. Governments headquartered in cities far from New York -- Tokyo, Paris, and elsewhere -- must respect the planet. "White men have power," but what were they doing with it? he asked. Governments must be held accountable.

He recalled the noble objectives and ideals that had been agreed at the "Earth Summit" in Rio some 15 years ago and urged participants to ensure that they were implemented. Civil society delegations at the Earth Summit had called for greater attention to the issue of climate change. Though it had not been a fashionable term then, he wished more people had been listening. Everything about the planet anyone wanted to know, indigenous people already knew. They should be asked, so that everyone could learn. "Indigenous people have power, too, the power of the Earth," but they needed the power of all people to stop the destruction of the planet.

Speaking from the floor on the impact of climate change on the people of First Nations, WILLIAM LITTLECHILD, a member of the Indigenous People's Forum, said that the effects of rising temperatures severely affected, among other things, transportation systems among native and tribal peoples who depended on water and ice for travel and the transport of food and other basic goods. "If the water and the tools we use are destroyed, so is our way of life," he said, adding that climate change also affected indigenous peoples' diets and health.

In the brief interactive discussion that followed, Mr. TERENA said that even in the most remote areas where people were happy with their lives, "everybody wants to come to New York". So since the City was so influential, indigenous peoples' representatives needed to sit down and talk with the Mayor about doing more to protect the environment and how to pass lessons learned on to other major cities. He added that it was difficult to convince people to "listen to the voice of the Earth", but he hoped that the participants would take what they had heard today about the sincerity and richness of indigenous cultures and traditions to the people in wider world and get them to listen and understand.

"We are all in the same sinking ship, and it's going to take everybody working together to scoop all the water out," Mr. ROGEI said, calling everyone, particularly the world's youth, to action. Mr. ELISARA'ULU said that he believed that bystanders who knew the world was in crisis but did nothing were just as bad as the architects of the crisis. He urged Government leaders to ask indigenous people about the effects of climate change before any decisions were made. At the same time, he

called on native and tribal peoples not to act -- or acquiesce -- under pressure from global processes driven by big Governments. Mr. TODISHEV agreed that indigenous people needed to raise their voices -- now more than ever, with the Declaration so close to adoption. He also called on Governments to consider providing assistance so that indigenous peoples would be able to attend more conferences like this one.

Afternoon Panel Discussion on Best Land Use Practices

Khaled Dawoud, correspondent, *Al-Jazeera*, moderated the discussion, which included the participation of Li Xiaolin, Vice-President, Chinese People's Association for Friendship with Foreign Countries (CPAFFC); Rosiland Peterson, California President and Co-Founder of the Agriculture Defense Coalition (ADC); Dickson Desponmmier, Professor of Public Health and Microbiology, Department of Environmental Heath Sciences, Mailman School of Public Health, Colombia University; and Pekka Patosaari, Director, Secretariat for the United Nations Forum on Forests.

Opening the panel, Ms. LI said that ensuring sustainable land use was critical to attainment of the Millennium Development Goals. But many countries, like China, had to feed their populations while having very little arable land. Indeed, with a population of 1.3 billion, for China, "protecting farmlands is protecting the country's lifeline". So the country was under constant pressure not only to better manage its arable land, but to also ensure its sustainable use, while maintaining steady growth. In addition, the sustainable management of the country's forests was also a major priority.

She said that farmers were the main users of the land in China, but due to a general lack of knowledge, particularly in more underdeveloped provinces, they were unaware of the tools at their disposal to increase crop growth while protecting the environment. The CPAFFC had set up an education fund, and had also enlisted the expertise of organizations and financial institutions, including United Nations agencies, Citibank, and others, to change the mindset of farmers throughout the country and to teach them how to take care of their environment and how to access information that will help them in that regard.

Taking a question from the floor, she said that, although the Government was desperately trying to deal with the terrible pollution in cities like Beijing and Shanghai, the problem was still very troubling, especially since the pollution was emanating from diverse sources. By example, she said that Beijing, a city of more than 17 million, had 1.5 million cars. Further, most big cities in China were ringed with factories and Beijing itself had literally hundreds of construction projects under way ahead of next summer's Olympic Games. She said that the Government had urged manufacturers to start building plants away from the cities and had also been urging urbanites to walk more and ride bikes. At the same time, non-governmental organizations were constantly calling on Government agencies to address air pollution and to urgently consider the health effects of China's rapid growth.

Ms. PETERSON said that she was concerned about experimental weather modification programmes that were supposed to explore initiatives aimed at countering the effects of global warming, but which could, in fact, negatively impact a crop production or cause other problems. If mitigation efforts continued along those lines, particularly putting into the atmosphere chemicals that could reduce photosynthesis, growing seasons could be altered and pollinators could be affected. Another example was the use of solar panels to create conditions that extended the growth season of some crops. Similarly, she was concerned about persistent jet contrails, which science had shown could expand and spawn man-made "clouds" that trapped heat in the atmosphere. "How do you like your skies, natural or man-made?" she asked.

She went on to say that experimental atmospheric testing programmes, jet fuel pollution, emissions from geochemical plants and other so-called "solutions" employed to address the effects of global warming could leave us with a "pea soup" of chemicals in the skies and dying trees, mould-covered buildings and contaminated water on the ground and in the oceans. It was critical for non-governmental organizations to press their local Governments to promote the use of the technologies that were already available to deal with pollution, rather than putting more contaminates in the skies and waters.

Mr. PATTOSAARI said the critical issue was changing behaviours to reduce current vulnerability to climate change factors and protect against future degradation. Sustainable forest management was critical to any plans and programmes aimed at addressing climate change. More that 1 billion people lived in or around forests and used forest resources for food, shelter and medicines. Forests also contributed to the well-being of populations living far from urban areas. Forests provided a wide range of recreational opportunities, as well as environmental services, such as protection of watersheds. He stressed that trees, soil and forests take in and store carbon and, generally speaking, young, well-managed forests were good "carbon sinks". Tropical forests were able to take in and store carbon at greater rates than boreal forests.

He said that the United Nations had been working to promote sustainable forest management for some 15 years. This year, the Forest Forum had agreed on a non-legally binding instrument on all types of forests which sets a framework for implementation of that principle in all countries. The Forum anticipated that the General Assembly would adopt the instrument during its sixty-first session. The instrument provided countries with a number of proposals intended to guide and assist the implementation of sustainable forest management, including on such issues as forest law enforcement and governance; international trade in forest products; protection of forests; and science and research.

Calling for more innovation in alternate farming and food production, Mr. DESPOMMIER said that cities and urban areas might provide ideal growing conditions in the future. His idea was that food could be raised in a safe, controlled, water-producing environment, thus reducing the susceptibility of our food supplies to natural disasters, curbing pollution and agricultural runoff, and lowering costs by drastically cutting the "farm-to plate" distance.

By example, he said that "vertical farming", in which crops were grown in tall buildings in or near urban areas, could fill the gaps in crop loss due to flooding, desertification, spoilage and pestilence. He added that communities working together on vertical farming projects could also cut down on tension and conflict in many parts of the world, since, in so many places, access to food was at the core of differences.

When the panellists began answering questions from the floor, Ms. PETERSEN said that people should not, out of fear, trade one technology for another. In other words, we already had enough products, as well as access to enough technology, to effectively address the effects of climate change. It was important to ensure that those technologies were used appropriately and with some innovation, however. On jet contrails, she told the participants that she was not suggesting that everyone stop flying. Airlines and military operators should fly their planes more responsibly, starting with reducing the amount of chemicals in the contrails.

Asked about the benefits of the Forest Forum's non-binding instrument, Mr. PATTOSAARI urged patience. The nature of the United Nations was that many mandates were given and agreements were reached, often after extremely long negotiations in the General Assembly. When instruments were approved that did not enjoy the support of the full membership, it often gave the impression that nothing had been accomplished. But the fact that 192 nations came together to talk about the issues of the world was very important. Non-binding agreements had become a major part of the effort to create and maintain global norms. They were adding to the overall process. It just took time.

Panel on 'The Economics and Politics of Energy and Climate Change'

The round table discussion was moderated by Jacqueline McGlade, Executive Director, European Environment Agency. The panellists were: Alison Sander, Globalisation Topic Advisor, Boston Consulting Group (BCG); Klaus Scheuerer, representative of the Board for Traffic & Environment, BMW Group; Barbara Bramble, Senior Advisor for International Affairs, National Wildlife Federation; John Holdren, Director, Woods Hole Institute; and Richard Kinley, Deputy Executive Director, Secretariat for the United Nations Framework Convention on Climate Change (UNFCCC).

Ms. McGLADE said there was a diversity of problems presented by climate change, and none more so than in the areas of energy, land use and agriculture. She opened the discussion by recalling a prize winner in the rural, mountainous region of the Philippines where there was no electrification -- a

man who saw the problem and created an opportunity. He built a small brick building, purchased a small hydro-electric motor generator and charged a battery. He took the battery to a house and lit a light bulb. His aspiration was that, by the time he reached age 65, he would have raised enough money to buy 150 batteries to light up many more village homes. He was 55 and in the past five years, he had managed to provide electricity in the homes of hundreds of village children.

Mr. KINLEY said that what had happened in the past year had been "absolutely remarkable" in the realm of climate change. There had been reports, discussions, and headlines, including at every summit. Many new truths had been learned, some of them inconvenient. There was now a solid and scientific understanding and consensus that climate change was unequivocal. Public consensus and concern was greatly enhanced, as people around the globe were becoming deeply and personally concerned about what was happening.

In short, "the climate was changing on climate change", he said, and with that, a growing appreciation that much more needed to be done, and quickly. In intergovernmental negotiations, however, that sense of urgency still had not taken hold to the desired extent. The reason for that hesitancy was the continuing fear of economic hardship. On the one side, industrialized countries feared that acting aggressively would mean losing an economic advantage. Developing countries had a legitimate concern that action on climate change would impact poverty eradication and economic development.

He said that those two thrusts were the reason for the "drag" in intergovernmental talks, but it was becoming increasingly understood that the reluctance was based on a misconception that economic growth and climate protection were mutually exclusive. Rather, they reinforced each other. Strong economies were better able to adapt to climate change and deal with the impacts.

Climate change was being identified as an issue of national interest, and that was driving local action, he noted. Internationally, on 24 September, the United Nations Secretary-General would host a high-level meeting on climate change, at which many world leaders would come together to try to accelerate negotiations. That would lead to the next round of talks in Bali in December. Some main elements of the Bali conference outcome could be a renewed determination by industrialized countries to continue to take the lead in responding to climate change by reducing emissions at home and supporting developing countries in that regard. The conference should also seek to further engage developing countries in action on climate change, and it should seek to significantly enhance support for adaptation elements in those countries. The meeting's outcome should also strive to enhance efforts to reduce emissions from deforestation.

Turning to the scientific realities, Mr. HOLDREN said that the human disruption of the global climate was real. There had not just been a change or warming which was uniform or benign or gradual. There had been a disruption, which was already causing significant harm, such as rising sea levels and intense tropical storms. The biggest cause was carbon dioxide, and the pace of climate change and the growth of the damage were accelerating around the world.

He said that society had only three options: mitigation; adaptation; and suffering. By maximizing the first two, it was still possible to minimize the suffering. However, achieving enough mitigation to avoid large increases in suffering would require major shifts in energy and land use practices, starting immediately.

Regarding the technological and economic realities of the problem, 80 per cent of the world's energy was supplied by burning coal, oil and natural gas and releasing 30 billion tons of carbon dioxide, he said. Developing countries would dominate the emissions after about 2020. Global investment in fossil fuel-dominated energy supply infrastructure totalled about $14 trillion, so the energy system could not be changed overnight. Deforestation also released billions of tons of carbon dioxide per year, and the forces driving deforestation were deeply embedded in economies, so that could not be changed overnight, either. Adequate mitigation required paying as much as 1 to 2 per cent of gross domestic product (GDP) to reduce emissions of carbon dioxide and other greenhouse gases. "We can afford it."

Concerning the political realities, he stressed that the industrialized countries must lead. Developing countries should be compensated for reducing deforestation. Without a formal and binding agreement in the post-Kyoto period on emissions reduction, the world could not do enough. The best basis for such an agreement in the short-term was probably reductions in emissions intensity. In the longer run, the only politically acceptable basis was "tradable per capita emissions rights", he said.

Mr. SCHEUERER spoke about how the automotive industry was willing to address the challenges of climate change. According to the report by the Intergovernmental Panel on Climate Change, cars were responsible for 7 per cent of the carbon dioxide emissions, and transportation as a whole, for 17 per cent. If climate change was understood as a worldwide problem, there needed to be burden sharing between the different sectors and a balance must be found between the ecological, economic and social aspects of the challenges.

He said that the automotive industry clearly accepted its responsibility for the environment and for society; it wanted to be part of the solution, not the problem. The industry had devised different sets of options tied to different time frames. Those included plans for safe energy, supplementing existing fuels, and substituting carbon-containing fuels. Also envisaged were increasing engine efficiency, moving towards lightweight construction of vehicles, and improving aerodynamics, among other things. Other measures included the introduction of intelligent traffic management systems to keep traffic flowing. Part of the strategy was to supplement existing fuels, perhaps by making use of a second generation of biofuels.

In that regard, it was necessary to address the limited availability of biofuels and the ethical question about the human cost of growing energy plants on lands instead of growing food. Overall, clean energy was the pathway to sustainable mobility. In the midterm, industry was interested in lighter weight construction and, in the long term, the industry envisaged a transition to hydrogen vehicles. Hydrogen vehicles were far from perfect or affordable for all, and building up the necessary infrastructure would take 15 to 20 years.

Ms. BRAMBLE touched on the spread of infectious diseases, such as malaria, around world, owing to climate change. That was an expected impact of human-induced disturbance. Also, a temperature rise of 2 to 2.5 degrees might increase the number of people at risk of hunger up to 300 million people, as there would be fewer days in the growing season. Although developing countries had done the least to cause the problem, the very poorest people would suffer the most from the adverse consequences. There was also a potential for climate change to profoundly hamper development efforts and hijack development assistance funds.

In the United States, she said that an understanding of the responsibility was starting to emerge. Her organization's initiative, "The Fair Climate Deal", sought to get people thinking about adaptation and poverty, both within and outside the United States, and to invest in energy-saving measures. Still, the United States was about 10 years behind in getting to work, but at least action was starting. Some States, about 24 plus Washington, D.C., had already put together renewable electricity standards for their own power use. Now, 656 towns and cities had signed on to their own goals to reduce their use of fossil fuels and reduce their carbon footprint. Congress was also moving forward with some major bills in the House and Senate.

Ms. SANDER said that more and more clients were looking for an integrated framework and asking how to think about the whole host of complex issues. There were not a lot of answers out there, but at least a lot of questions being asked. Previously, the focus had been on cost reduction and avoiding litigation and environmental responsibility was seen as an issue of cost. The most incredible thing, exciting in the corporate world, was that that was now viewed as an opportunity. Governments might not see it that way, but green products totalled $100 billion in sales this year. So, there was now a lot of revenue at stake, which was probably good news, as that moved the climate change issue from the back office to the front, grabbing the attention of the chief executive officers.

In the interactive discussion that followed, questions centred on how to introduce the "cap and trade" process, including at universities. Some civil society representatives wanted to know what steps could be taken to encourage Governments and the world community to work together to combat the negative impacts of climate change, rather than each trying to do it on their own. Speakers also

proposed the development of a “groundswell movement” to preserve the planet’s climate before it was too late. Still others asked about “tipping points” in the system that would serve as a call to action.

Mr. HOLDREN said there were physical tipping points in the system, such as the complete disappearance of Arctic sea ice in the summer. Another potential tipping point out there was reaching a point where Antarctic and Greenland ice disintegrated very rapidly, which could produce catastrophic rates of sea-level rise. There were several others. The chance of exceeding a threshold “taking us into a tipping point” went up rapidly, and that was precisely where the world was heading unless drastic action was taken to change course. The situation was at or very close to a political tipping point.

To another round of questions, Mr. Kinley said the solution began with individual action, then Governments, and then the international level to ensure that solutions were delivered in a coherent way. The fundamental way to make change was to elect Governments that reflected the people’s priorities, he said.

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