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GLOBAL ENVIRONMENT, CLIMATE CHANGE, SMART URBANIZATION AND INTERNATIONAL ENVIRONMENTAL LAWS FOR GLOBAL SUSTAINABLE DEVELOPMENT

ŚRODOWISKO NA ŚWIECIE, ZMIANY KLIMATU, INTELIGENTNA URBANIZACJA I MIĘDZYNARODOWE PRZEPISY DOTYCZĄCE ŚRODOWISKADLA GLOBALNEGO ZRÓWNOWAŻONEGO ROZWOJU

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Abstract:

The research study entitled ‘Global Environment, Climate Change, Smart Urbanization and International Environment Laws for Global Sustainable Development’ focuses on the issues relating to the global environment, climate change, smart urbanization and the international environmental laws that determine these global indicators in achieving sustainable development goals and in trying to assess the linkages and implications of these macro variables as key determinants of the global environment and climate change. Thus, the problem associated with this research study is a global phenomenon that definitely has national, sub-national, and regional implications/ramifications across economies. These macro variables are scientific and practical determinants of the way global economies move forward and the problems encountered by various economies in the light of the global environment, climate, and rapid smart urbanization changes. Hence, the research problem which the research study focuses on is a realistic and practical one that encompasses, covers, and determines the major macro aspects of the global economies. The aspects dealt in the research study covers among others issues such as global environment, climate change, smart urbanization, and international environmental laws, IPCC, Paris Agreement on Climate Change and NDCs, promoting climate-resilient smart

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and rapid urbanization, exploration of climate change legislation, global environmental governance systems to promote peace, justice and development and in fulfillment of environmental and human rights connected with it, etc., The most important conclusions drawn from the research study is that United Nations has been playing a major role as the unique international organization which has been making all-out efforts to mitigate climate change, adopt climate-resilient measures for effective, smart and rapid urbanization in cities, reshaping these measures to attain global sustainability and Sustainable Development Goals(SDGs) and in impacting global infrastructure for global sustainable development.

Keywords: International Climate Laws, Global Environment, Smart Urbanization, Global Infrastructure, Global Eco Cities, Environmental Defender

Streszczenie:

Niniejszy artykuł koncentruje się na kwestiach związanych ze środowiskiem na świecie, zmianami klimatu, inteligentną urbanizacją i międzynarodowymi przepisami dotyczącymi ochrony środowiska, które są determinowane przez te globalne wskaźniki w dążeniu do zrównoważonego rozwoju, a także w określeniu celów rozwojowych oraz próbie oceny powiązań i implikacji tych makro-zmiennych, jako kluczowych determinantów globalnego środowiska i zmian klimatu. Problem będący przedmiotem tego artykułu jest zjawiskiem globalnym, które prowadzi do konsekwencji na poziomie krajowym i regionalnym w poszczególnych gospodarkach. Te makro-zmienne są naukowymi i praktycznymi determinantami rozwoju gospodarki światowej oraz problemów napotykanych przez gospodarki w świetle globalnego środowiska, klimatu i szybko rozwijającej się inteligentnej urbanizacji. Problem badawczy, na którym koncentruje się badanie przedstawione w artykule, jest realistyczny i praktyczny, obejmuje on i określa główne makroekonomie globalnych gospodarek. Aspekty poruszone w badaniu obejmują między innymi takie kwestie jak: środowisko globalne, zmiany klimatu, inteligentna urbanizacja i międzynarodowe przepisy dotyczące ochrony środowiska, IPCC, porozumienie paryskie w sprawie zmian klimatu i NDC, promowanie odpornej na klimat inteligentnej i szybkiej urbanizacji, badanie prawodawstwa dotyczącego zmian klimatu, globalne systemy zarządzania środowiskiem w celu promowania pokoju, sprawiedliwości i rozwoju. Najważniejsze wnioski z badania wskazują, że ONZ gra ważną rolę jako wyjątkowa organizacja międzynarodowa, która dokłada wszelkich starań, aby złagodzić zmiany klimatu, przyjmuje odporne na zmiany klimatu środki na rzecz skutecznej, inteligentnej i szybkiej urbanizacji w miastach, przekształcając te środki w celu osiągnięcia globalnego zrównoważonego rozwoju i wpływając na globalną infrastrukturę.

Slowa kluczowe: międzynarodowe przepisy klimatyczne, środowisko na świecie, inteligentna urbanizacja, globalna infrastruktura, globalne miasta ekologiczne, obrońca środowiska

Statement of the problem in general outlook and its connection with important scientific and practical tasks

The research study entitled ‘Global Environment, Climate Change, Smart Urbanization and International Environment Laws for Global Sustainable Development’ is an attempt to study the issues relating to the global environment, climate change, smart urbanization and the international environmental laws that determine these global indicators in achieving sustainable development goals and in trying to assess the linkages and implications of these macro variables as key determinants of the global environment and climate change. Thus, the problem associated with this research study is a global phenomenon that definitely has national, sub-national, and regional implications/ramifications across economies. These macro variables are scientific and practical determinants of the way global economies move forward and the problems encountered by various economies in the light of the global environment, climate, and urbanization changes. Hence, the research problem which the research study focuses on is a realistic and practical one that covers and determines the major aspects of the global economies.

Analysis of latest research where the solution of the problem was initiated

The latest and recent research studies have analyzed the issues relating to the environment, climate change and smart urbanization in megacities across the world with legal implications on the environment which is the order of the day and needs to be pondered upon and studied to frame the legal laws that can be analyzed and interpreted beyond national boundaries across the globe so that the international laws relating to climate change issues are framed and implemented optimally for the larger benefit of the global communities and in tackling these above issues.

Review of Academic Literature

The review of academic literature on the subject matter is mostly drawn from international organizations such as the United Nations Framework Convention on Climate Change(UNFCCC), UNEP, UNEA, World Global Forum, World Economic Forum Annual Meeting, Global Economic Outlook, UNEP, IPCC(Intergovernmental Panel on Climate Change), UN, Report of UN Secretary-General on the Climate Action Summit 2019, World Urban Forum on Smart Cities 2020, etc., This is due to the fact that the research study relies on international issues, the National Development Plans(NDPs) and the Nationally Determined Contributions(NDCs) which are vital aspects/issues in

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determining the changing global environment on climate change and rapid smart urbanization across various countries that is underway at present to sustain the climate action plan and its implementation. Research publications mostly from United Nations highlighting the role of United Nations in promoting a climate-resilient global environment has been relied upon because of the fact that UN is one of the unique international organization whose mandate, functions and activities transcend national boundaries. Hence, the literature on the topic has been given a global exposition/treatment since the subject of research is international/global in nature as it transcends national boundaries. Apart from this, the 'Role of Cities in a Climate-Resilient Future' by Laura Hammett, Urban Resilience Consultant, UNDP, 2020 is an academic research paper that focuses on the future role of cities to adapt to attaining a global climate-resilient environment is a unique research effort in this direction

Aims of Paper: Methods

The research study has been an intriguing and interesting one due to the fact that it touches upon the cogent global environment, climate change, rapid and smart urbanization issues. The role of the environmental defender in determining optimum climate action plans and in attaining world peace, justice, and development have also been highlighted in the research paper. The other issues covered in the research study are ICC, integrating environment with smart urbanization, environment sustainability and sustainable development goals, Paris Agreement on Climate Change etc.,

Methodology

The most important methodology developed/devised in the research study is that of the tool kit on international environment laws and climate change and its related sophisticated database maintained by the United Nations. In fact, not only these data bases but also various international and national forums have been organized by the HLPF of the UN to create awareness amongst the key stakeholders to protect the environment through smart and rapid urbanization which may be determined at international, national, sub-national and regional levels. Thus, the United Nations has successfully integrated and implemented the concept of the global environment and climate change including smart urbanization in eco-cities globally with global environmental sustainability and also in focusing and in integrating these issues with the implementation of the Global Sustainable Development Goals(GSDGs) slated by UN by the turn of 2030.

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Exposition of main material of research with complete substantiation of obtained scientific results Discussion

The research study is a unique one to the extent that the study has been successful enough to carve out the complete global environmental issues which include apart from climate action smart urbanization, developing international environmental laws that would be suitable and effective in implementation across economies as these laws are global in nature and its implications transcend national boundaries. Thus, the study has led to the integration of environment laws, climate action plan, and smart urbanization with global sustainability and the SDGs. The global environmental tool kit linking environment laws with climate action and smart urbanization is a unique research effort in this direction.

International Law and Climate Change Toolkit

In the age of rapid changing globalization and sustainable development, there is an urgent felt need to study the climate change aspects in the light of its linkages with the international law to assess its implications with climate change scenarios so that strategies could be developed to determine the SDGs to achieve them by 2030 slated by the United Nations. In fact, climate change and the related action plan is a global phenomenon and is to be adopted as a global exercise to determine the reasons in global climatic disorders in order to develop strategies to mitigate the disordered global climatic scenario. For this purpose, the International Law and Climate Change Toolkit is an effective online and open database being developed by a partnership among the UN Climate Change Secretariat, UN Environment, and the Commonwealth Secretariat working in close collaboration with partner countries, other international organizations and research institutions. The objective of the toolkit is to provide a global resource to help countries put in place the legal frameworks necessary for effective domestic implementation of the Paris Agreement and their nationally determined contributions (NDCs). The toolkit has been developed and designed for the use by national governments, international organizations and experts engaged in assisting countries to implement national climate change laws, as well as academia and research institutions that are undertaking an analysis of the growing body of climate change-related legislation throughout the world. The key features of the toolkit include functionalities to search existing climate change-related legislation and to undertake an assessment of a selected country's legislation. As the development of the toolkit progresses, and more experience with NDCs and existing climate laws is gained, the toolkit would increasingly collect documentation of successes and challenges, and make available information on

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good practices and lessons learned across the different fields of climate law-making internationally.

Development of the Toolkit

It has been decided to develop the toolkit in phases. The first phase focuses on a limited subset of general climate laws and some examples from the energy sector, which have been reflected in the current beta version of the toolkit. It is envisaged that the toolkit would broaden in scope to progressively include all other sectors that are relevant to addressing global climate change issues. In line with the global geographical scope of the toolkit, while the first phase would focus on material available in English, the goal is to expand the functionality and data in the toolkit to other official UN languages so as to have a wider global outreach. The partner organizations seek to work with international organizations, research institutions, and pilot countries interested in testing the toolkit in their domestic legislative efforts. The experience gained and the feedback will, in turn, help to ensure that the toolkit responds to the needs of countries, allow to improve and expand the toolkit, and may also inform its future “lessons learned” component.

Functionality

The toolkit provides a guided experience for users and offers a variety of functionalities under three interlinked, but independent, main components supported by a back-end climate legislation database.

1. The search function: Legislation explorer

Building on existing databases, the toolkit would provide access to climate change-related legislation, both within overarching climate change laws and sectoral legislation, from around the world. Through the search function, users will be able to search for relevant laws and provisions by way of a free text search and/or the use of a guided taxonomy including legal areas and cross-cutting categories. To enhance the relevance of the information provided by the toolkit, users will be also able to filter results by country, promulgation year of the legislation, and type of legislation.

2. The assessment component: Assessment questions, areas of improvement analysis, suggested examples

In addition to the search function, the legal assessment functionality of the toolkit provides the user with the opportunity to undertake a review of a selected country’s legislation in order to identify potential areas for improvement. This function of the toolkit is designed to help users identify priority areas for climate law review and potential

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areas of legislative or regulatory reform. After going through a set of interactive assessment questions covering a broad range of aspects related to one or more chosen broad areas of laws, users would be presented with specific aspects and issues that might require attention in climate change-related law-making at the national level. The user would be provided with suggestions pointing to relevant legislative examples from other countries. Results can further be tailored according to contextual factors relevant for the assessed country, such as type of legal system, population, GDP, emissions profile, adaptation priorities, or focus areas for mitigation (e.g. according to a country's NDC). The assessment is not intended to be prescriptive but to offer options and examples for the user to draw on.

3. Collecting experience: Lessons learned explorer

In the mid and longer-term, the first two functionalities would be complemented by options to view lessons learned and experience gained with existing climate laws. Users would be able to obtain information on how provisions from national laws are being applied and ‘what works’ in climate law in different countries around the world. It is envisaged that over time, more and more experience and lessons learned in the various thematic legal areas can be gathered and a growing community of practice be built up.

Contributing Partners

The following are the contributing partners in the preparation of the beta version of the Toolkit viz;

Food and Agriculture Organization(FAO) of the United Nations;
United Nations Conference on Trade and Development(UNCTAD);
United Nations High Commission for Refugees;
United Nations Human Settlements Program (UN-HABITAT);
Grantham Research Institute, London School of Economics;
University College London, Faculty of Laws;
School of Transnational Law, Peking University;
Legal Atlas.

The Toolkit has been designed for use by national governments, international organizations and experts engaged in assisting countries to implement national climate change laws, as well as any academia and research institutions that are undertaking an analysis of the growing body of climate change-related legislation throughout the world.

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Nationally Determined Contributions (NDCs)

The Paris Agreement and NDCs

2015 was a historic year in which 196 Parties came together under the Paris Agreement to transform their development trajectories so that they set the world on a course towards sustainable development, aiming at limiting warming to 1.5 to 2 degrees Celsius above pre-industrial levels. Through the Paris Agreement, Parties also agreed to a long-term goal for adaptation to increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production. Additionally, they agreed to work towards making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

Nationally determined contributions (NDCs) are at the heart of the Paris Agreement and the achievement of these long-term goals. NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change. The Paris Agreement (Article 4, paragraph 2) requires each Party to prepare, communicate, and maintain successive nationally determined contributions (NDCs) that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions.

The Paris Agreement requests each country to outline and communicate its post-2020 climate actions, known as their NDCs. Together, these climate actions determine whether the world achieves the long-term goals of the Paris Agreement and to reach global peaking of greenhouse gas (GHG) emissions as soon as possible and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHGs in the second half of this century. It is understood that the peaking of emissions will take longer for developing country Parties and that emission reduction is undertaken on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty, which are critical development priorities for many developing countries.

Each climate plan reflects the country's ambition for reducing emissions, taking into account its domestic circumstances and capabilities. Guidance on NDCs is currently being negotiated under the Ad Hoc Working Group on the Paris Agreement (APA).

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Promoting Climate-Smart Urbanization

The United Nations Environment Program (UNEP), the United Nations Framework Convention on Climate Change Secretariat, and the Commonwealth Secretariat, in collaboration with several United Nations entities, have developed a law and climate change toolkit to promote climate-smart urbanization.

Global heating has been described as the “defining issue of our time”. An effective response to climate change requires deliberate and sustained action from both state and non-state actors that are anchored in nationally determined contributions. Implementing these contributions requires supportive regulatory and institutional frameworks and a regular assessment of their adequacy and effectiveness.

United Nations Urban Forum in Abu Dhabi

UN-Habitat in partnership with UNEP, the United Nations Framework Convention on Climate Change Secretariat, and the Commonwealth Secretariat held a panel discussion at the World Urban Forum in Abu Dhabi on 12 February 2020 to showcase how the law and climate change toolkit works.

“The toolkit is an innovative online database designed to help countries establish legal frameworks necessary for effective domestic implementation of the Paris Agreement and their nationally determined contributions,” says María Socorro Manguiat, Senior Legal Officer in UNEP’s Law Division. (Statement by María Socorro Manguiat, Senior Legal Officer, UNEP’s Law Division).

“Urban law defines urban forms, where land, infrastructure, housing, and basic services can be built; lays out rules for planning and decision-making; and sets the context within which urban authorities, local governments, and communities are expected to fulfill their mandate and react to emerging challenges.”

UN-Habitat has led the development of the urban law module of the toolkit, which was developed in recognition of the close nexus between urbanization and climate change.

“The urban law module aims to demonstrate, in very concrete terms, how important urban planning laws and regulations are in achieving climate mitigation and adaptation objectives, and what laws and regulations you should have to make them ‘climate-smart’,” says Gianluca Crispi, Program Management Officer, Policy, Legislation and Governance Section, UN-Habitat (Statement made by Gianluca Crispi, Program Management Officer, Policy, Legislation and Governance Section, UN-Habitat).

During the Forum, UNEP presented strategies and approaches to improve urban planning and management. These included a microsimulation modeling tool to support data gathering, and air quality monitoring to make informed decisions.

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UNEP provides technical assistance to countries in the review and development of their national legislation, drawing on examples and best practices from around the world and in collaboration with other entities such as UN-Habitat.

“Urban legal frameworks play an important role in climate change mitigation and adaptation,” says Sharon Gil from UNEP’s Cities Unit. “The toolkit is an innovative and very useful instrument to help countries review their domestic legislation.” (Statement of Sharon Gil, UNEP’s Cities Unit).

Global Environmental Governance Systems

In our globalized world, environmental threats require effective responses that promote peace, justice, development, and the fulfillment of environmental and human rights. UN Environment promotes sound environmental governance, the rules, policies, and institutions that shape how humans interact with the environment. By building robust governance systems, we can safeguard the environment and human rights and work toward all the 17 UN Sustainable Development Goals.

UN helps the governments’ lay the foundations for smart environmental laws and policies that help protect the environment from degradation and fulfill environmental and human rights obligations. UN partnerships with national governments, judges, parliamentarians, enforcement officers, and other policymakers are one of the greatest objectives required during these times. Through these partnerships, people working in sectors such as agriculture, fisheries, forestry, and tourism are made aware to incorporate environmental concerns into their work.

The work includes assisting governments in obtaining environmental information for decision-making, and providing citizens with greater access to information pertaining to their environmental rights; enhancing environmental cooperation at the global and regional levels; developing and applying national and international environmental law; promoting, protecting and respecting environmental rights; and encouraging links between civil society and governments in the development and implementation of environmental policies. The common goals across international environmental agreements and support dialogues on environmental issues at the regional level are also identified. Environmental governance is a key driver for the achievement of sustainable development. The undivided nature of the environment and its inextricable links with the social and economic dimensions of sustainable development relies on good decision-making processes, effective institutions, policies, laws, standards, and norms.

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UNEP, through the environmental sub-program, together with a wide range of partners, addresses the most essential factors to achieve progress towards these objectives, i.e.:

Coherent international decision-making processes;

Adequate capacities for agreed objectives and national environmental priorities through adequate legal and institutional measures;

Integration of environmental sustainability in development at regional, sub-regional, and national levels.

Environmental Governance Sub-Programs adopted by United Nations

UNEP through the environmental governance sub-program works with governments and the relevant institutions in the UN system, as well as with MEAs, to promote more coherent, effective, and efficient decision making and action on the environment.

The Environmental Governance sub-program assists governments in obtaining environmental information for decision-making, enhancing global and regional environmental cooperation, developing and applying national and international environmental law, advancing the national and regional implementation of environmental objectives, and bridging major groups and governments in policy development and implementation processes.

UNEP supports the regional process to bring to the attention of countries global environmental issues and also supports regions to bring to the global attention of national and regional environmental issues. UNEP supports regional ministerial fora on policy dialogue and exchange and development of common regional positions. The focus also includes strengthening capacities to mainstream environmental sustainability in national sustainable development such as UNDAF, Poverty, and the Environment Initiative (PEI).

Supporting Instruments

The following supporting instruments have been adopted by United Nations viz;

- Medium-term strategy: as approved by the Governing Council at its First Universal Session, February 2013 (Governing Council decision 27/13)
- Biennial program of work and budget for 2014–2015: as approved by UNEA at its First Session, June 2014 (A revised program of work and budget for the biennium 2014-2015)
- Biennial program of work and budget for 2016–2017: as approved by UNEA at its First Session, June 2014 (Program of work and budget for the biennium 2016-2017).

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The UN works to ensure that international efforts that commensurate to meet environmental obligations are efficient and effective.

Multilateral Environmental Agreements are one of the most effective ways in which governments of the world meet environmental commitments to protecting biodiversity, safely managing chemicals and waste, sustainably managing land, and mitigating and adapting to climate change.

The UN Environment provides capacity building services, policy advice, and technical assistance to up to 196 countries through conventions that administer multiple multilateral environmental agreements, like the ‘Convention on Biological Diversity’, and the ‘Strategic Approach to International Chemicals Management’. By encouraging improved cooperation among multilateral environmental agreements efforts are being combined to increase efficiencies, and conserve the human and financial resources of implementing countries.

The enhancement of cooperation among countries to meet multilateral environmental agreements through the following:

- InforMEA to provide information from over 60 international environment agreements under dozens of conventions to 192 countries.
- Ozone Action to strengthen the capacity of governments and industries in developing countries to elaborate and enforce policies required to implement the Montreal Protocol.
- The Bamako Convention support and strengthen African nations to prohibiting the import into Africa of any hazardous (including radioactive) waste.

Bringing environmental protection nearer to the people

Environmental rights have grown more rapidly than any other human right. 155 countries have binding legal obligations to respect, protect, and fulfill the right to a healthy environment.

UN Environment supports the upholding of environmental rights through ‘The Environmental Rights Initiative’ which is a coalition of state and non-state actors united to promote, protect, and respect environmental rights.

Environmental Rule of Law

- (i) Environmental rule of law is central to sustainable development. It integrates environmental needs with the essential elements of the rule of law and provides the basis for improving environmental governance.
- (ii) It highlights environmental sustainability by connecting it with fundamental rights and obligations.

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- (iii) It reflects universal moral values and ethical norms of behavior, and it provides a foundation for environmental rights and obligations. Without environmental rule of law and the enforcement of legal rights and obligations, environmental governance may be arbitrary, that is, discretionary, subjective, and unpredictable.

In order to close existing gaps in international environmental law, the French government, in 2017, initiated a tool i.e. ‘The Global Pact for the Environment’ for the world to move towards adopting the legally binding international instrument. A Global Pact portal was developed with the aim of providing existing information and material on international environmental law in an easily accessible manner.

The UN systems build national capacities to develop and enforce laws and strengthen institutions for achieving environmental objectives. Strong environmental law is the bedrock of environmental governance and a cornerstone of the 2030 Agenda for Sustainable Development. The UN Environment is working internationally and with over 50 individual countries to ensure the progressive development of environmental law. It provides the following viz:

- expert guidance on the development of environmental legislation (wildlife, extractives, climate, crimes with serious impacts on the environment, etc.)
- legal assistance to help strengthen and streamline institutional arrangements and capacities for tackling environmental issues.
- technical and legal assistance to countries to strengthen capacities for enforcement of environmental law.
- support countries to strengthen transboundary cooperation, national capacities, awareness-raising, and communication.

UN Environment supports the implementation of the 2030 Agenda for Sustainable Development and the Rio+20 outcome document, “The future we want” by promoting effective international environmental governance, which has been a subject of discussion among member States since the establishment of UN Environment in 1972. Discussions on international environmental governance have been intertwined with those related to enhancing the effectiveness and efficiency of UN Environment governing bodies, namely the UN Environment Assembly (previously the Governing Council) and its inter-sessional subsidiary body, the Committee of Permanent Representatives, and their respective bureaus.

Paragraph 88 of “The future we want”, the outcome document adopted by world leaders at the UN Conference on Sustainable Development held in Rio de Janeiro in June 2012, represents one of the milestones efforts to enhance international environmental

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governance, including by strengthening and upgrading UN Environment. With this reinforced mandate, UN Environment aspires to provide strategic contributions to the High-level Political Forum on Sustainable Development and other relevant sustainable development governance processes.

Integrating Environmental Sustainability into the Sustainable Development Goals(SDGs)

UN Environment implements interventions that support regional and national efforts on the Sustainable Development Goals, including integrating environment into UN-DAFs and fostering coordinated decision making on the environment at the regional level, which promotes a much stronger alignment to delivering on Agenda 2030, as well as the UN reform, and taking into account the lessons learned during the implementation of the previous projects.

The United Nations support member states, UN agencies, UN Country Teams, Regional UN Development Groups, Regional Economic Commissions, Regional Forums, UN Environment staff, and other partners in implementing the environmental dimension of the Sustainable Development Goals at the global, regional and national levels, with a focus on enabling the use of environmental sustainability as an entry point to support the balanced integration of the social, economic and environmental dimensions of sustainable development.

UN Environment further promotes the engagement by national institutions of women, youth, and Indigenous People and Local Communities, including through their participation in national meetings and workshops and the provision of inputs into policies or strategies when relevant. Implementing partners and national institutions are briefed on the importance of taking into consideration gender roles and perspectives as well as the perspectives of underprivileged and vulnerable groups in deliberations and preparations of policies and plans, with a focus on the guiding principle of the 2030 Agenda in leaving no-one behind.

Creating New Community around Sustainability and Social Well-Being

At the 2020 tenth World Urban Forum, the United Nations Environment Program (UNEP) presented its new guidelines for integrated approaches for sustainable neighborhoods. Cities today are responsible for 75 percent of global energy and resource use, and some 70 percent of greenhouse gas emissions. Rapid urbanization and unsustainable practices in all sectors from transport to buildings and construction to waste management to energy will amplify the environmental impacts of cities. Most urban growth today is unplanned, fragmented and incoherent, and those cities that will see

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the biggest increase in urban population, lack urban and spatial planning capacity. This leaves gaps in environmental protection and in access to important services for many citizens. Luckily, urban communities are ready for a new style of living that is kinder to residents and the planet alike and are exploring ways to do so. The International Resource Panel report ‘Weight of Cities’ found that cities can achieve some 30 to 55 percent reduction of greenhouse gas emissions and resource use by using better spatial planning and urban design, higher sector and cross-sector efficiency, and circularity, and more sustainable lifestyles and consumption patterns.

“Encouraged by the powerful numbers of the Weight of Cities report, the UN decided to develop guidance on integrated approaches to harness the climate and resource potential and related benefits for health and well-being. Targeted at urban practitioners, the concentration was at the neighborhood level to take out some of the complexities that come with integrated approaches,” said UNEP’s Martina Otto. (Statement of Ms. Martina Otto, UNEP).

In fact, the neighborhood level is the right scale for achieving a coherent and sustainable urban piece in a reasonable time. Neighborhoods are big enough to aggregate the interrelated components present in an urban community, yet small enough to achieve results in a foreseeable time period. The size of neighborhoods allows more rapid action than city-wide policy, while still having a significant impact.

Designing zero-carbon neighborhoods to meet the Paris Agreement targets requires an understanding of how design decisions on location, movement, connections, orientation, and biodiversity make a place more or less sustainable. The neighborhood layout must be designed to influence positively the microclimate, to minimize energy use and facilitate local sourcing and the use of renewable energy. Factors such as water use and waste management need also be considered in integrated planning.

Global Eco-cities and Green Neighborhood Projects

A handful of “eco-cities” around the globe are developing demonstration green neighborhoods to showcase the latest in green technologies and practices. Canada, China, Korea, Scandinavia, the United Arab Emirates, and the United States all have transformative projects that integrate a variety of energy, water, transportation, and waste management strategies on a neighborhood scale.

In addition to these projects, strategies that address existing neighborhoods are needed. In Portland, Oregon, the EcoDistricts Initiative is developing five pilot eco-districts to build on the city’s success in the green building sector and to transfer sustainability benefits to the neighborhood scale. These efforts, along with others around the globe,

such as in Hammerby(Sweden) and Medellín(Colombia), highlight the need for a new set of partnerships and enabling tools to address sustainability at this larger level. To get to the scale required, one needs to get them out of their isolation and take them from best practice examples to mainstream and build a network of interconnected sustainable neighborhoods.

The guidelines are intended to initiate and follow a process that is engaging and inclusive, to be adapted to the local context. They can be applied in part or as a whole. Strategies comprise ways to create strategic densities, nature-based solutions and bioclimatic principles for buildings and construction, decarbonizing energy, circularity, and many more.

People are at the heart of the neighborhoods and at the heart of this process too: neighborhoods allow for community engagement and build upon the sense of community prevailing in these communities.

UN Environment and Environmental Defenders

UN Environment considers an environmental defender to be anyone who is defending environmental rights, including constitutional rights to a clean and healthy environment, when the exercise of those rights is being threatened. Environmental defenders may be operating in a personal or professional capacity. Violations of environmental rights are on the rise worldwide fueled by corruption, greater competition for natural resources, weak enforcement of environmental laws, and the irresponsible exploitation of land and other natural goods.

UN Environment aims to support the upholding of environmental rights and oppose the growing wave of physical and legal attacks against environmental defenders as well as the prevailing impunity with which these acts are being committed.

Role of UN Environment

UN Environment would:

Denounce the attacks, torture, intimidation, and murders of environmental defenders; Advocate with states and non-state actors, including business, for better protection of environmental rights and the people standing up for these rights;

Support the responsible management of natural resources;

Request government and companies' accountability for the different events where environmental defenders have been affected/murdered.

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Global Summit on SDGs for launching Global Opportunities for Sustainable Development Goals(GO4SDGs)

UNEP and the Federal Ministry of Environment, Nature Conservation and Nuclear Safety (BMU) launched Global Opportunities for Sustainable Development Goals (GO4SDGs) at the SDGs Summit in New York during September 2019. The new initiative aimed to boost the necessary efforts and solutions for the Sustainable Development Goals. It looked into to target three change-agent groups: policymakers, small to medium-size enterprises, and youth. The broad demographic-range aimed to raise ambition for building inclusive and sustainable economies at all levels.

The initiative also highlighted:

Exemplary approaches from countries and strengthen capacity for replication across regions.

Serve as a platform to facilitate dialogue and knowledge sharing for inclusive green economies.

Interweave with existing UNEP initiatives and One Planet Network programs.

Foster exchange on innovative and successful practices through newly designed regional sustainability hubs.

The launch was well attended and hosted at the Permanent Mission of Germany to the UN in New York, with the speakers deliberating how best to tackle the issue at hand. Svenja Schulze, Federal Minister for the Environment, Nature Conservation, and Nuclear Safety of Germany, highlighted the fact that only ten years remain to implement the SDGs, noting that despite progress in some areas, more action is needed, especially on climate, water and inequality. Highlighting that many effective tools, methods, and approaches already exist, she explained that the GO for SDGs initiative would focus on scaling up their use and enabling their adaptation to specific national circumstances. She announced Germany's contribution of € 7.5 million to the initiative, expressing hope that other partners would join. She called for greater efforts to promote green innovation and sustainable business models and, outlining several successful examples, expressed confidence that GO for SDGs would be fruitful.

Krista Mikkonen, Minister of the Environment and Climate Change, Finland, said her country wants to lead by example, by making Finland climate-neutral by 2035 and moving towards a circular economy. (Statement of Krista Mikkonen, Minister of the Environment and Climate Change, Finland). She highlighted that these ambitious targets need to be achieved in a socially-inclusive way. Instead of instituting a comprehensive sustainable development policy, she noted, Finland has a toolbox of policies

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tackling different issues, from plastics to waste. Mikkonen added that, under the One Planet Network, Finland has taken on responsibility for the program for sustainable building and construction.

Lucía Ruiz, Minister of Environment, Peru, highlighted the need for a grassroots, multi-stakeholder approach to SDG implementation, and for “multi-alignment” of government policies and actions. She said Peru is working to transition to a green, circular economy and has recently instituted a ban on single-use plastics. She further mentioned Peru’s recently adopted ‘National Green Growth and Competitiveness Plan’, which highlights the value of the environment and natural resources for economic growth. (Statement of Lucia Ruiz, Minister of Environment, Peru).

GO for SDGs would seek to build on UNEP’s leading knowledge and disseminate it through existing partnerships and programs such as the One Planet Network, the Partnership for Action on Green Economy (PAGE), the Green Growth Knowledge Partnership (GGKP), ITUC’s Just Transition Center, and the UNEP Finance Initiative ensuring a tailor-made and regional approach in addressing the differing needs in each global region. The initiative would also develop partnerships with organizations that work directly with businesses and the private sector to accelerate action, including the World Economic Forum.

Environment and World Peace

Environment and peace are cross-cutting issues that are intrinsic to sustainable development. While natural resources are vital to achieving sustainable development, they are also increasingly acting as drivers of fragility, conflict, and violence. The growing demand for natural resources together with environmental degradation and climate change has led to increased conflicts between countries and communities over resource access and ownership.

The United Nations Security Council met to discuss the growing new threats to world peace and security. Around 80 countries jointly agreed that the greatest impending threats to humanity could be triggered by climate change, not terrorism, nuclear war, or the conflicts around the world.

Climate change migration could be one of the most challenging issues humanity will have to deal with not in the future, but now. The threat of sea-level rise, caused by climate change, could result in a new category of environmental migrants escaping from their sinking homes to neighboring countries. The increased frequency, severity, and magnitude of extreme weather events all over the world one of the most immediate

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and visible results of climate change would likely continue to generate humanitarian crises.

Water in abundance may lead to devastating floods, while water scarcity leads to drought, both of which have significant political, social, environmental, and economic consequences. Water, if not managed effectively in a fair and inclusive manner, can act as a conflict driver. Despite the complexity of the challenges, natural resources, such as water, are also a resource for collaboration. While the past 50 years have seen around 40 violent water conflicts, some 150 water treaties were signed around the world.

An integrated approach to addressing climate change is essential to fully account for social, economic, political, and security impacts at the global level. In fact, Sustainable Development cannot be achieved without peace.

“Faith-based leaders are well-respected individuals with close community affiliations,” said Iyad Abumoghli, Principal Coordinator of the Faith for Earth Initiative. “Their legitimacy is built on their important status and their impartiality to the process”.(Statement of Iyad Abumoghli, Principal Coordinator of the Faith for Earth Initiative).

The Faith for Earth Initiative is working to establish a high-level global Interfaith Coalition to facilitate dialogue and collaboration on natural resources management, encouraging innovative approaches to finding long-lasting resolutions, Abumoghli added.

Engagement of faith-based organizations and faith leaders can be a vital tool for addressing water, peace, and security challenges. This can be achieved through mediations, dialogue, and working towards one global goal to protect the creation of God, our one and only planet.

Today, more than 80 percent of people in the world are associated with a religion or a spiritual community. However, many still lack access to even basic goods and services because of their religion, gender, origin, skin color, and so on.

In this sense, the values of peace and tolerance are critical for providing equal opportunities for sustainable livelihoods. Peaceful societies are those where everybody has the right to access the same goods and services.

Human dignity and the shared humanity of all races are foundational to peace. The concepts of redemption and forgiveness in faiths support significant post-conflict rec-

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conciliation efforts and provide resources to benefit societies' resilience. Interfaith efforts can help to resolve or to avoid disputes in the most conflict-affected regions in the world, as well as to improve the conditions of millions in civil strife.

Mobilizing partnerships is an essential means for the implementation of the 2030 Agenda. Action can only be achieved by engaging and partnering with stakeholders from all walks of life, building on cultural diversity as the fourth dimension of sustainable development. The 'Faith for Earth Initiative' is contributing to ensuring that the sound stewardship of natural resources is a fundamental human value and responsibility.

The 'World Environment Situation Room' is a dynamic knowledge platform designed to collect, process, and share satellite data and the world's best environmental science and research. The platform includes critical tools to review progress towards the achievement of the Sustainable Development Goals.

Built and maintained by UNEP, the World Environment Situation Room provides real-time open data access to policymakers and the general public, using distributed networks, cloud computing, big data, and improved search functions.

The World Environment Situation Room allows citizens to better understand and even participate in the collection of data on environmental changes. Indeed, the role of the public in "citizen science", or the crowd-sourcing of data, is one of the most cutting-edge and exciting tools emerging in the global research arena.

Intergovernmental Panel on Climate Change(IPCC): Climate Change and Land (2019)

The land is already under growing human pressure and climate change is adding to these pressures. At the same time, keeping global warming to well below 2°C can be achieved only by reducing greenhouse gas emissions from all sectors including land and food, according to the Intergovernmental Panel on Climate Change (IPCC). The report provided key scientific input into the climate and environment negotiations, such as the Conference of the Parties of the UN Convention to Combat Desertification (COP14) held in New Delhi, India in September 2019 and the UN Framework Convention on Climate Change Conference (COP25) held in Santiago, Chile, in December 2019.

United Nations Environment Program(UNEP): Global Environment Outlook (2019)

UN Environment's sixth Global Environment Outlook (2019) called on decision-makers to take immediate action to address pressing environmental issues to achieve the

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Sustainable Development Goals as well as other Internationally Agreed Environment Goals, such as the Paris Agreement. By bringing together a community of hundreds of scientists, peer reviewers and collaborating institutions and partners, the Global Environment Outlook(GEO 2019) report build on sound scientific knowledge to provide governments, local authorities, businesses and individual citizens with the information needed to guide societies to a truly sustainable world by 2050.

The Paris Agreement

Paris Agreement: Essential Elements

The Paris Agreement builds upon the Convention and for the first time brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework, and an enhanced capacity-building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.

The Climate Emergency the world currently faces requires adequate and immediate action. It is one of the most pervasive and threatening crises of our time.

The world is currently facing an existential threat and rapid prioritization of attention and action needs to be taken urgently. If we continue along our current path, scientists say that the consequences will be devastating, having implications on where we live, how we grow food, and other services vital to our well-being. A 2°C increase could mean more heatwaves, a ten-fold increase in Arctic ice-free summers, and a complete wipe-out of the world's coral reefs, home to millions of species.

The UN work on climate action cuts across the fields of science, policy, technology, and finance. It empowers countries to pursue low-emission development and boost their capacity to adapt and be resilient to climate heating. The UN is also working to implement the Paris Agreement, the world's roadmap for tackling climate change. The UN contributions include bringing science to policymakers, playing a leading role in

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transformative global partnerships, and helping dozens of countries develop national plans to cut greenhouse gas emissions. The UN equips countries to seize new investment opportunities that reduce greenhouse gas emissions from deforestation and forest degradation. It supports the development of new finance models to accelerate the transition to a green economy.

The Role of Cities in a Climate-Resilient Future

As cities took center stage at the 10th World Urban Forum in Abu Dhabi in February 2020, we must recognize the challenges they face but also seize the opportunities, including connecting sustainable cities with global action on climate change perhaps our biggest challenge for all.

During 1800, fewer than 10 percent of people lived in urban areas. Fast forward to today and half of the global population call cities home, and that is on the rise. This era of urban transition has the potential to transform countries and economies for the better, cities are dynamic centers of innovation, education, commerce, and industry. They account for more than 80 percent of today's global GDP. At the same time urbanization is also happening alongside pervasive inequality and poverty, gaps in infrastructure and services, massive human migration, and the existential threat of climate change that could literally leave millions of people underwater and push economies to a tipping point. Meanwhile, cities are producing over 70 percent of global carbon emissions.

The Challenges

With their increasing populations, outsized disaster risk profiles, and environmental footprints, cities are vulnerable to the impacts of climate change. Yet without a doubt, building efficient, low-carbon cities is essential to a sustainable future. Some cities are already leading the way, yet stubborn challenges remain. Municipal governments are faced with competing priorities. They often lack a long-term approach or the resources necessary to invest in resilience measures, effective waste management, or low-carbon, energy-efficient transport, and infrastructure.

Many plans, policies, and budgets at the local level do not account for carbon emissions or climate-related risks. Further, they are not well integrated with national priorities such as National Adaptation Plans(NAPs) or Nationally Determined Contributions(NDCs).

Despite innovations already underway, setting up systems that track carbon emissions, or show risks at the city block scale, come at a cost many cities cannot afford. This

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means cities are struggling to demonstrate need, prioritize action, and get catalytic global finance.

Finally, there are financing challenges. On one hand, in many countries the national government controls municipal finance disbursement, meaning cities have limited control over expenditures. On the other, as the global climate finance community is linked more with national governments, cities often have limited avenues to access large-scale funding.

The Opportunities

These are indeed significant challenges. But there are also immense opportunities. The four encouraging trends are:

- National governments are increasingly involving cities in policy and planning processes, including National Adaptation Plans(NAPs) and Nationally Determined Contributions(NDCs) under the Paris Agreement.
- Countries such as Bhutan, Bosnia, Herzegovina, and Uruguay are countries where more than 90 percent of people who live in cities are already prioritizing urban centers in their adaptation plans. This is helping municipal governments plan for, and fund, critical adaptation measures, while also informing national adaptation priorities.
- Governments are increasingly recognizing cities' innovation in reducing emissions and adapting to climate change.

Recent Examples of Urbanization in Cities

A couple of recent examples serve to inspire viz;(i) In Serbia in October 2019, the government showcased city efforts to build resilient, low-carbon communities as part of a national program focused on climate-smart urban development; (ii) Meanwhile, countries like Malaysia are looking to leadership from cities and seeking to integrate urban climate policy with national programs, facilitating coordinated local and national climate action.

Several platforms have grown in recent years to encourage the exchange of knowledge between cities facing similar challenges. Examples include looking to include the Global Covenant of Mayors for Climate Change and Energy and the C40 Cities Climate Leadership Group, both of which are supporting city leaders to build their skills and evaluate options.

The United Nations Development Program's 'City-to-City' Network is helping connect cities to innovations and learning tools that use a systems approach to planning, thereby integrating efforts to increase resilience, sustainability, and inclusivity.

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The Tide is Turning

While historically the bulk of international climate finance has not been dedicated to city-scale solutions, the tide is turning, as reflected in the launch of the Global Environment Facility's Sustainable Cities Impact Program. Recognizing the need for increased private investment, the Coalition for Climate Resilient Investment announced a partnership of over 30 organizations with US\$5 trillion asset value at the '2019 Global Climate Action Summit'. Led by the financial sector, this coalition seeks to integrate climate risks into decision-making for private investment, driving a shift toward a more climate-resilient economy.

The World Urban Forum sets the stage to discuss the challenges, but also to embrace solutions. It's a critical event in what the Global Commission for Adaptation has declared a "Year of Action" for a climate-resilient future. However, there are some encouraging trends and to seize the opportunities.

World Economic Forum Annual Meeting 2020 (7 January 2020)

The World Economic Forum Annual Meeting 2020 highlights the following :

- (i) To build cities fit for the future, we need to think differently
- (ii) Helping to close the global infrastructure investment gap by mobilizing the private sector
- (iii) Our ever-growing cities are responsible for the majority of carbon emissions.
- (iv) It's time to look at urban infrastructure in a new light.
- (v) With collaboration and collective vision, we can leave a legacy fit for the future. Cities account for the majority of the world's population, and most of the world's carbon emissions are most directly linked to the impacts of climate change. Tackling the crisis surrounding climate change is inextricably tied to every one of the economic, social, and environmental challenges that our planet faces. Sharing knowledge of the solutions being implemented by progressive cities, in arresting and managing their carbon emissions, offers a way forward which would benefit everyone.

The research into our carbon-dependent economy is alarming; the UN Intergovernmental Panel on Climate Change has warned that we have just 12 years to act to avoid the worst effects of climate change. Research from 100 Resilient Cities has estimated that the total area of cities is expected to double by 2070. In the developed world, much of the civil infrastructure is aging and no longer fit for purpose, while in the developing world, it is often missing entirely. The World Economic Forum has estimated that the globe will face a \$15 trillion "infrastructure gap" by 2040.

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Today we have an opportunity to look at cities in a new light, as the focus of future economic growth where the next generations will live, work, and play. Enabling our future cities to be resilient to the predicted impacts of climate change and to become carbon neutral will involve a different way of thinking. The greatest challenge we face is the need for unprecedented collaboration by all stakeholders. The creation or adaptation of the next generation of resilient, sustainable cities would involve a sea change in approach and that is our opportunity as global leaders in this space. We need to crack the opportunity to connect great solutions, collaborate across all sectors, and promote a spirit of cooperation. However, solutions do exist. We need to see the connectivity between our changing climate and those essential assets which form our urban infrastructure. Every city has assets that are contributing to carbon emissions, such as fossil fuel-dependent energy sources, poor or non-existent residential and business waste management, outdated and inefficient transportation networks, and energy-hungry utilities such as water and wastewater treatment. There are carbon-efficient sustainable solutions in development for each of these essential assets. What is missing is the connectivity between the deployment of those solutions, which is our opportunity to reinvent the sustainable city infrastructure of tomorrow.

Looking at the solutions being deployed around the globe gives a sense of hope, as with each passing day more technology and strategies are being developed and implemented.

Examples of Urbanization in Smart Cities

In London England, for instance, ultra-low emission zones have been created, over and above congestion charging which was implemented in 2003. This relatively simple change in traffic management has resulted in reduced carbon emissions, enhanced air quality, and ultimately better health for city residents.

New York will become the first US city to implement congestion pricing, charging drivers to enter Manhattan. Los Angeles launched the most aggressive US city-led sustainable transportation plan. By 2028 all new cars and all city buses are to be electric. This commitment is accompanied by a congestion strategy to address the infamous Los Angeles traffic. San Francisco is also joining many other cities in pedestrianizing key streets and zones.

In the UAE, the state-of-the-art high-speed rail company, Etihad Rail, aims to connect urban centers and reduce carbon emissions by taking cars off the road. This is an example of the importance of connected transportation modeling. Many European cities

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are further ahead of this than the US and other countries, but the learning is there and can be shared.

Looking more holistically at climate change and the opportunities to significantly reduce carbon emissions, the city of Edinburgh in the UK has completed a groundbreaking study into climate action. Edinburgh, a United Nations World Heritage Site, was built on medieval planning principles. Edinburgh City Council wants to shape their city so that it supports economic growth while prioritizing public space, public transport, and pedestrian and bike routes. This vision for a more integrated future for the city demonstrates the advantages of bringing together multi-disciplinary urban planning and design processes. Implementation of the study outcomes is all focused on creating efficient central infrastructure, improving air quality, and reducing carbon emissions.

Considering the buildings within a city, the greatest carbon emission impact is poor insulation or over-dependency on cooling. The good news is that building standards in some countries are leading the way in new build design. Scandinavian countries are implementing state-of-the-art sustainability into new building designs, which exclude all the existing aging buildings. Brazil and the State of Parana have committed to transforming all public buildings to net-zero energy, including 180 public schools, through energy-efficiency measures including producing renewable energy as an integrated approach, a great example of the commitment needed to make a difference.

Lastly, the historical foundation of any city is centered on its sources of water and power. Technologies have existed for decades to transition from fossil fuels to renewable energy. Germany has shown the way, with a commitment to renewable energy from wind for many years. Today, Germany is embarking on a significant cable connector SudLink to bring renewable energy to the population in Bavaria and Baden-Wurttemberg.

As a global community, we need to collaborate across private sectors, agencies, departments, and jurisdictions; we need to think differently and be committed to connecting the solutions. Through greater sharing of the knowledge of the current solutions our world is capable of, and by creating more connected sustainable solutions, we can leave a legacy fit for the future.

World Economic Forum: Sustainable Impact Development Forum Summit: Infrastructure will make or break our response to climate change

The public discourse and deliberations about climate change and infrastructure often treat these two issues as separate. It's time to start thinking about them as the same

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thing. Many of the solutions to the climate change crisis are about infrastructure choices, as infrastructure development can either advance our progress in addressing climate change or damage it.

Climate change activists often lose traction when they seem to be calling for individual action. Addressing climate change will take massive international action, country by country, and the tools are clear: carbon taxes to provide pricing indicators that shape behavior and physical infrastructure that facilitates and shapes behavior, in the right way.

Government leaders around the world talk about infrastructure as though it's all good and we need a lot more of it. The American automotive industry worked with the US Federal government to advance driving and succeeded through the installation of facilitating infrastructure. This legacy is part of the challenge the United States faces today.

To address climate change we will need more and better mass transit to get people out of their cars and to encourage greater population density in urban areas to reduce the distance people need to travel to work. This will require more urban infrastructure such as municipal water, urban parks and recreation, and cultural centers such as museums to improve the quality of urban life.

Energy production and consumption are, of course, central issues in the climate change discussion, but the alternatives are used as sound bites and the true underlying issue is lost. The production and consumption of energy are driven by a global infrastructure that supports it. Change the infrastructure and that will all change.

The most obvious subject, and the usual sound bite, is renewable energy: wind and solar, versus fossil fuel. This is true enough but regardless of how many solar farms are built, or rooftop panels are installed, until large nations build transmission lines to carry that power to its users and install smart grid technology to allow for distributed rooftop installations to integrate with its grids, we will never get there.

Similarly, no matter how fancy and/or inexpensive electric cars become, they will not be more than an oddity until there are high speed charging stations throughout the road systems of the most populous nations and all over every densely populated area to support their use.

Carbon capture is another area where infrastructure will make a difference, collecting CO₂ produced by industries such as manufacturing, steel production, and chemicals, including fertilizers for agricultural use, and injecting them into deep aquifers in the earth. To accomplish this at scale will require vast systems of pipelines and storage

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areas. Without carbon capture, regardless of how we produce and consume energy, we will never approach zero emissions.

The responses to climate change and the issue of infrastructure do not overlap 100 percent. In addition to carbon pricing, research and development will play a big role in addressing climate change. There are also standalone infrastructure needs like drinkable water that are separate from climate change. But the overlap is so great that it is absurd to be thinking of these issues as distinct.

Furthermore, coming to infrastructure from the perspective of climate change provides the most needed element in the infrastructure debate: a policy purpose.

Coming at the climate change discussion from the perspective of infrastructure moves the discussion away from questions of personal choice and brings into focus the fact that massive government action is required. Addressing climate change is not like getting people to stop littering. It is about a massive global government-driven modification to the way we all live. It is largely about the infrastructure we will build.

Conclusions

The most important conclusions drawn from the research study is that United Nations has been playing a major role as the unique international organization which has been making all-out efforts to mitigate climate change, adopt climate-resilient measures for effective, smart and rapid urbanization in cities, reshaping these measures to attain global sustainability and Sustainable Development Goals(SDGs) and in impacting global infrastructure for global sustainable development. Thus, the United Nations has successfully integrated and implemented the concept of the global environment and climate change including smart urbanization in eco-cities globally with global environmental sustainability and also in focusing and in integrating these issues with the implementation of the Global Sustainable Development Goals(GSDGs) slated by UN by the turn of 2030.

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