Sustainability and Climate Change

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MAIN BACKGROUND

The concern with the issue of climate change has gone through different moments since the nineteenth century, gaining increasingly global importance and relevance over time, based on new knowledge and progress made in the science and technology sector.

The eminent Swiss scientist, Svante Arrenhius, in his paper “On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground” (1896), noted the relationship between the amount of carbonic anhydride in the atmosphere and temperature increase, affirming that the burning of petroleum and coal can cause atmospheric warming.

The estimates given by Arrenhius for a doubling of the concentration of atmospheric CO2 predicted an increase in the global temperature of between 4°C and 6°C.

It is not until the 1970s when the problems related to the development model and the negative environmental and social impacts seen since the Industrial Revolution began to be evaluated.

During the World Conference on Human Development (Stockholm, 1972), the economy-society-environment relationship began to be analyzed as it was considered necessary to achieve economic growth and industrialization without harming the environment.

UNEP was then created and World Environment Day was established.

In 1982, the World Commission on Environment and Development (Brundtland Commission) was created within the UN. It submitted its report in 1987, **“Our Common Future,”** which established the relationship between the economy, society, and the environment, highlighting the need for greater global equality and the achievement of **“sustainable development.”**

The latter is defined as:

“DEVELOPMENT WHICH MEETS THE NEEDS OF THE PRESENT GENERATIONS WITHOUT COMPROMISING THE ABILITY OF THE FUTURE GENERATIONS TO MEET THEIR NEEDS.”

At the **First World Climate Conference, in 1979,** the body of knowledge already existing on the effects of human activity on the planet's climate and our ability to predict them was evaluated in more detail.

In 1985, a **scientific conference** was held in **Villach, Austria** to evaluate the role played by the increase in CO2 and other greenhouse gases on climate variations and their impacts.

It was concluded that climate warming was a practically inevitable fact and that its magnitude would depend on the policies on the use of energy and fossil fuels.

THE IPCC:
THE SCIENTIFIC RESPONSE

The UN General Assembly approved a resolution titled **“Protection of Global Climate for Present and Future Generations”** in **1988.**

This led to the creation of the **Intergovernmental Panel on Climate Change** (now known universally as the **IPCC**) by WMO and UNEP.

The primary aim of the **IPCC** is to compile information and periodically assess the “state of art” of technology and science in relation to climate change, the possible impacts from climate change, and the adaptation and mitigation options to deal with the risks and vulnerabilities derived from it.

It is also responsible for selecting and preparing the most important information for disemmination.

One of its relevant tasks is the review of technological advances and their socioeconomic impacts, determining the areas and populations most vulnerable to caused or foreseeable damage. It includes experts from all the regions of the world in its efforts, ensuring that its work is an open, transparent and objective process.

The Panel has published 5 Assessment Reports: 1990,1995, 2001, 2007 and 2014.

The last report (2014) revealed the following:

- In 2014, the C02 concentration increased to 400 ppm (40% above the pre-industrial levels in 1800).
- The surface temperature of Earth has risen by 0.8 degrees Celsius during the last 100 years.
- The largest rise has occurred in the last 35 years.
- In 2012, the use of fossil fuels accounted for 85% of global primary energy.

- The greatest damages caused by climate change result from floods, droughts, severe storms, hurricanes, meltings, rise in the average sea level, ocean acidification and warming, and intense heat waves.

- These have caused numerous human, social, and economic losses, damages to natural resources and ecosystems.

Along with the effects on the water cycle, biodiversity, agriculture, and the impacts on human and animal health, the disasters caused by extreme weather events are very important at global level and for our region.

The IPCC 2012 Special Report on managing the risks of those weather events (SREX Report) underlines the need to assess, in addition to risk, exposure and vulnerabilities.

Proper disaster risk management entails identifying processes to design, apply and assess strategies and policies aimed at enhancing human security, well-being, quality of life, resilience, and sustainable development, and minimizing economic loss.

It is worth noting that the world population is estimated at more than 7.5 billion people, of which 50.4% are men and 49.6% are women, with a total of 2.6 billion people living in poverty.

All these impacts pose serious risks for the life of present and future generations.

Dealing with them is a great challenge, entailing in-depth revision of the way we produce, consume and live, taking into account the enormous disparities, the inequality, and the huge gaps between developed and underdeveloped countries.

THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

The **United Nations Framework Convention on Climate Change** emerged during the **Second World Climate Conference, in 1990,** based on the conclusions from the **IPCC First Assessment Report.**

It was recommended that multilateral negotiations begin to create an international treaty that would regulate cooperation among countries to address possible irreversible global climate change of anthropogenic origin.

Consequently, the UN General Assembly established the **Intergovernmental Negotiating Committee**. Its proposal was concluded in May 1992.

The resulting instrument was named **“The United Nations Framework Convention on Climate Change”**. The Convention was opened for signature at the 1992 Rio de Janeiro Earth Summit, and entered into force on March 21, 1994.

The Convention defines **greenhouse gases** as those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation.

The **greenhouse gases** of interest for the Convention are basically **carbon dioxide** (CO_2), **methane** (CH_4), and **nitrous oxide** (N_2O).

It recognizes that responsibility for protecting the climate system is common to all the Parties but differentiated, meaning that developed countries should take the initiative to tackle climate change, given that these countries bear the greatest responsibility for past and present emissions.

The Convention establishes the importance of the precautionary approach, which involves taking early action to reduce emissions at their sources, such as within the energy sector, industry, transportation, agriculture, and waste management, among others.

The fundamental response strategies in the fight against climate change are **mitigation** and **adaptation**.

In 1995, the First Conference of the Parties to the Convention recognized that the emission reduction commitments were insufficient to stabilize the concentrations of greenhouse gases in the atmosphere.

The Berlin Mandate was adopted, which began a process to negotiate a protocol that would establish **quantified** anthropogenic emission limitation and reduction **commitments** for Parties to Annex I of the Convention (developed countries) after 2000.

In 1997, a **Protocol** that bears the city's name was approved in **Kyoto**, which would establish legally binding commitments for developed countries to reduce their greenhouse gas emission levels by 5.2% compared to 1990 levels, in a five-year commitment period from 2008 to 2012.

THE PARIS AGREEMENT AND THE 2030 AGENDA

On December 12, 2015, the 21st Conference of the Parties of the Framework Convention on Climate Change, meeting in Paris, adopted a new legally binding instrument – the **"Paris Agreement" –** after a laborious consensus-building process. This will enter into force in 2020. It is considered the first universal agreement to address climate change.

With the adoption of the Agreement, a work cycle that began in Durban, South Africa, in 2011 was concluded.

It was crucial that 194 countries commit to make concrete and measurable **national contributions**. The developing countries succeeded in preserving the key elements of the Principle of Common but Differentiated Responsibilities.

Emphasized was the need to increase energy efficiency and renewable energy development and integration.

The pressing need to effectively reduce emissions of greenhouse gases (mitigation), expressed in terms of annual global emissions, was highlighted. This would allow for an increase in the global average temperature well below 2°C compared to pre-industrial levels, and continued efforts to limit this temperature increase to 1.5°C.

It also recognized the urgent need for developed country Parties to enhance their financing, technology, and capacity-building support to developing country Parties.

The Paris Agreement places particular emphasis, **for the first time**, on **adaptation**, a concept mentioned in the Framework Convention without much attention until this point.

THE PARIS AGREEMENT AND THE 2030 AGENDA

In 2015, important decisions were taken on the well-being of humankind and our planet: the Agenda 2030 and the new SDGs, along with the Paris Agreement. They highlight the need to contribute to poverty eradication and to reducing risks to life for more vulnerable countries and populations.

Both documents recognize the need to evaluate how new investments are made, how the economy is structured, how energy is generated, and how natural resources are rationally used and managed.

In 2016, **Agenda 2030** and the **Sustainable Development Goals (SDGs),** which were approved by the United Nations General Assembly in its 70th session in September 2015, entered into force.

The SDGs include 17 objectives and 169 goals. The greatest challenge will be their implementation.

Agenda 2030 is considered to be the most extensive and ambitious global program adopted within the UN framework to benefit people, the planet and prosperity.

It comprises a comprehensive and indivisible approach that will require important changes to existing policies, in which sectorial approaches and minimally unified visions have prevailed.

The objective set out in the Agenda is to strengthen universal peace.

It recognizes that the **eradication of poverty** in all its forms and dimensions, including extreme poverty, is the greatest challenge the world faces and is an **essential** requirement for **sustainable development.**

The Agenda emphasizes the promotion of science and technology particularly in developing countries, innovation, technology transfer, the development of endogenous technologies, efficient and sustainable management of terrestrial and marine natural resources, new production processes and consumption habits, and the **fight against climate change,** among other aspects.

Several aspects of the **Paris Agreement** create **synergy** with **Agenda 2030 and the Sustainable Development Goals:**

- The intrinsic relationship that exists between measures, responses and consequences generated by climate change and equitable access to sustainable development and poverty eradication;

- Conserve and increase greenhouse gas sinks and reservoirs;

- Ensure the integrity of all ecosystems, including oceans, and the protection of biodiversity;

- Reaffirm the importance of education, science, public awareness and participation, as well as public access to information, and cooperation at all levels;

- Adoption of life styles and sustainable consumption and production patterns, a process which should be led by developed countries, as an important contribution to the efforts to address **climate change**.

Agenda 2030 also warns about:

“The exhaustion of natural resources and the negative effects of the environmental degradation, including desertification, drought, soil degradation, freshwater scarcity, and the loss of biodiversity, increase and exacerbate the difficulties faced by humanity”.

“Climate change is one of the greatest challenges of our time and its adverse effects reduce the capacity of all countries to achieve sustainable development.”

ENERGY

The greatest challenges with respect to greenhouse gas emissions are recognized as resulting from the use of fossil fuels.

- 77% of **oil reserves** are concentrated in **developing countries** (47% in the Middle East, **20% in Latin America,** 8% in Africa and 2% in Asia).
- 61% of the **natural gas** reserves (43% in the Middle East, 8% in Africa, 6% in Asia Pacific and **4% in Latin America**).
- 29% of **coal** (23% in Asia-Pacific, 4% in the Middle East + Africa, **2% in Latin America**).

In relation to **renewable energies,** the IPCC approved the "Special Report on Renewable Energy Sources and Climate Change Mitigation" (SRREN) in 2011.

This report gives special attention to the following energies: **solar**, **wind**, **bioenergy** obtained from the biomass**, hydroelectric, marine** and **geothermal**.

Renewable sources must accelerate people's access to energy, particularly the **1.4 billion people without electricity and the 1.3 billion people who use traditional biomass** in underdeveloped countries. The types of energy most widely adopted in recent years have been wind and solar.

Our region has **laws relating to the environment**, but there has been a recognized lack of institutional management and capacity to implement and enforce them.

In order to achieve **good environmental governance,** governmental **political will** is needed. There is also a lack of financial resources, research and scientific information, environmental education and an environmental awareness culture, with the participation of the whole society.

Science has convincingly demonstrated the influence of environmental processes on the **economy and society**, which must be **incorporated into new legislation, regulations and environmental tools.**

SOME FINAL CONSIDERATIONS

Implementing the Paris Agreement and the new Agenda 2030 requires important **transformation in how we think about and interact with the existing development model**, starting with the most developed countries and essential support to developing countries.

It is essential to foreground the role of **public policy, including economic, intersectorial, social, and local development policies.** Social policies that benefit everyone through equity, inclusiveness, and human solidarity are crucial.

There is great heterogeneity worldwide in terms of ethnicity, gender, history, culture, levels of poverty and vulnerability.

It is necessary to **prioritize women, children and youth**. Each country must establish its priorities in accordance with their needs and the complex global outlook.

It is essential that **each country is able, and has the necessary knowledge,** to undertake sustainable development, with particular emphasis on developing countries, least developed countries, and Small Island Developing States.

In 2013, the **poverty rate** in Latin America was **28.1%** of the population, while the extreme poverty rate was 11.7%.

On the other hand, our region continues being the **most unequal** region **in the world** in terms of income distribution.

However, the region has **one-third** of the planet's freshwater reserves, **12% of arable land**, **23%** of the world's **forests** and hosts **6 out of the planet's 17 most megadiverse countries**, as well as important **mining resources and 20% of world oil reserves**.

Although these resources are not evenly distributed, its general richness and economic importance set a very important course for **a true regional integration** in search of sustainable development.

It is necessary to **review current environmental legislation**, technical-productive regulations, regulations for new investments, and methodologies for physical and environmental planning, in light of adaptation and mitigation plans.

Guarantee the **energy efficiency** and the integration of **renewable energies**.

Cooperation, mainly regional, must **contribute** to formulating new economic, social and environmental **public policies**, and new **institutional and technical capacities,** which does not mean imposing any country's development system upon another.

New knowledge, good practices, and scientific and technological results must be shared**.**

To conclude, my **personal view** is that we need to urgently **modify current conceptions of the development model** and implement new working methods, following the **principles** of **integration** and **cooperation** that incorporate renewed **ethical, human, and solidarity values**.

THANK YOU VERY MUCH

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