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EDITORIAL

Gathering Data, Providing Theoretical Foundations and Proposing Practical Pollution Reducing Measures to Strengthen the Global Fight against a Warming Atmosphere

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An extensive and accurate knowledge of atmospheric disturbances such as turbulence, wind veering and other unexpected weather changes that are becoming frequent, violent and unpredictable, and which generate tropical cyclones and other intense weather situations is essential. Such unstable atmospheric happenings are occurring with increasing frequency [1]. They include periodic collusion of unstable air parcels, uncertain wind trajectories some of which tend to veer and assume violent tendencies, precipitation events that are becoming more erratic and rising temperatures. These atmospheric disturbances not only lead to catastrophic events, but they hamper our ability to predict with accuracy and certainty upcoming weather and climate events as well as their, magnitudes and intensities. Low predictive abilities tend to render inaccurate various simulation models that should guide aircraft dynamics, farming practices and other human endeavors upon which our survival as a society depends.

Rising atmospheric concentrations of greenhouse gas (GHGs) that trap returned solar radiation and prevent it from reaching the upper layers of the atmosphere have led to warming of the atmosphere. Carbon dioxide (CO_2), water vapour, methane, nitrous oxide and chlorofluorocarbons (CFC) are being generated through human activity and emitted into the atmosphere in higher quantities [2]. In addition, higher concentrations of airborne particles (aerosols) that eat up and thereby reduce ozone layer content in the stratosphere are being produced. Increased deforest-

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ation leads to the release of stored carbon content into the atmosphere. Frequent draining of peatland, and poor waste disposal and management systems being practised worsen these enfolding trends [2].

These harmful situations contributed to violent atmospheric weather and warming of the climate that have been highlighted in various articles presented in this journal. The reading public should therefore be awakened to the disturbing trends which if unchecked could have dire consequences for the society. Diverse harmful impacts on humanity, animals and plants in the ecosystem have been predicted. And the effects are obvious. Temperatures are rising, glacial ice is melting, and sea levels are rising as the oceans become warmer leading to floods and infrastructure damages. Precipitation is becoming unpredictable and violent with destructive power as evidenced by buildings collapsing, farms being inundated with floods, infrastructural facilities being damaged and settlements being abandoned [1,2]. Concerted and collective action is both critical and urgent. The global community is well positioned to act in a coordinated manner based on tools developed from scientific and tested measurements to avert catastrophic consequences.

An effective thrust toward drafting effective policies, designing long-lasting programs and undertaking actions that could eventually, effectively and in a sustainable manner tackle these is critical for successful resolution of these daunting atmospheric disturbances. Warming climatic situations continue to wreck destruction, damage and decimation of prized lives and precious properties. Humanity's ability to respond timely to these challenges hinges on scientific studies and publication of hard facts garnered from experiments and field measurements.

This issue of the Journal of Atmospheric Science Research contributes to the challenge by presenting a range of quality articles that broadly set out key findings of research and analytical works on a set of topics in the field of atmospheric sciences. The articles are presented logically and systematically with adequate attention to atmospheric sciences. They highlight both conceptual issues and practical insights that demonstrate the quality and breadth of scientific vigor and analytical breadth that the authors demonstrated in their publications.

Authors' presented papers provide broad insights into current global concerns but also outline critical priority areas for further research and potential development schemes that could spur industry-level ventures. In addition to the potential of an accelerated highlighting of effective solutions into environmental preservation challenges that confront the global community, these can also provide remedies for value chain downstream and upstream ventures that can be promoted at scale by innovative entrepreneurs.

Improved research in environmental conservation, climate change mitigation and adaptation strategies, waste reduction and management measures in addition to acid rain prevention approaches could also impact positively on health through improve air quality [3]. The positive health impacts would occur through minimized asthmatic conditions as well as better control of lung-impairments and heat-related illness such as exhaustion and heat stroke. Possible exposure to ultraviolet rays that lead to skin damage, skin cancer and cataracts will be minimized. Better air quality will result in lessened respiratory, eye and nasal diseases, chronic obstructive pulmonary disease (COPD), chronic bronchitis and emphysema or lung cancer. Thus in addition to environmental conservation and habitat preservation, stabilized atmospheric conditions could improve human health [3].

Research papers presented in this current journal provide renewed focus on efforts at generating evidence, factual knowledge grounded in scientific processes and refined data that enable or yield practical, innovative measures which address both short-term and long-term challenges confronting the global community. Most importantly, a broad understanding of diverse physical environment systems that influence the way we live and operate, the interlocking interactions between different populations as well as between them and the environment will be on offer. Additionally, the availability of ready and effective the scientific tools and skillset gleaned from journal articles and research papers would equip the society with the capacity to examine the suitability as well as outcomes of our mitigation and adaptations efforts. Failure to adopt and adapt will obviously imperil our existence as a global technologically capable society.

Impacts of human actions that lead to atmospheric concentrations of poisonous gases do not only threaten human health when inhaled but adversely affect society indirectly through various ways. A better assessment and understanding of the workings of atmospheric will empower the global society with the ability, skills and technology to design remedial measures that could limit global warming on a sustainable level.

In summary, it can be argued that finding long lasting solutions for the warming atmospheric conditions that imperil the global community's very existence is essential. This is particularly critical for developing countries and countries with transition economies that have fragile socio-economic systems and which can slide into deteriorating living conditions [4]. However, it must be stressed that these challenges can also threaten the fabric of developed

countries as well if not tackled effectively. Unpalatable atmospheric disturbances caused largely by atmospheric and climate warming could ultimately collapse the global economy, lead to regional conflicts over access to declining energy sources, generate public unrest due to revolts over dwindling resource supplies as well as power struggles and wars between nations over not only diminishing resource availability but access to, ownership of, and control over their use.

Conflict of Interest

There is no conflict of interest.

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