

Climate 2018



5th World Conference on

CLIMATE CHANGE AND GLOBAL WARMING

May 23-24, 2018 | New York, USA

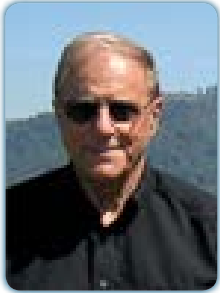
Special Session

Day 1

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Don J Easterbrook

Western Washington University, USA

Cause of the ice ages and climate change

Ice ages and other significant climate changes show excellent correlations of global temperature with sunspot activity, total solar irradiance, production of radiocarbon and beryllium isotopes in the upper atmosphere, and cosmic rays entering the atmosphere. Periods of global cooling coincided with changes in these factors during the Oort, Wolf, Maunder, Dalton, 1880–1915, and 1945–1977 Solar Minima. How are all of these factors interrelated? During the devastating cold of the little ice age from 1650 to 1700, sun spot activity on the sun virtually ceased and total solar irradiance dropped. That this was not just a coincidence, is shown by the same thing happening during each of five other cold periods. radiocarbon (¹⁴C) and beryllium (¹⁰Be) are isotopes produced in the upper atmosphere by colliding cosmic rays, so the more cosmic radiation, the greater the production of these isotopes. The amount of radiocarbon and beryllium produced can be measured and serves as an indicator of the amount of incoming cosmic radiation. Isotope measurements show that cosmic ray incidence was greater during each of the cold periods. Physicists have long known that cosmic rays passing through the atmosphere produce ions (charged particles) that serve as nuclei for condensation of water vapor. In 1997, Svensmark and Friis-Christensen published the results of experiments at the Cern nuclear laboratory showing that cosmic rays do indeed generate condensation and suggested that increased cloudiness, produced by ionization in the atmosphere by cosmic rays, causes increased reflection of incoming solar energy and results in enough cooling of the atmosphere to cause climate changes. The geologic evidence of the relationships between global temperature, sunspot activity, total solar irradiance, production of radiocarbon and beryllium isotopes in the upper atmosphere, and cosmic ray incidence, provides a satisfactory explanation for the cause of both long-term and short-term climate changes.

Biography

Don J Easterbrook is Emeritus Professor of Geology at Western Washington University. He has conducted climate research in North America, New Zealand, and Argentina, has written a dozen books, 185 professional papers, and has presented 30 papers at international meetings in 12 countries. He was Chairman of the 1977 national meeting of the Geological Society of America (GSA), President of the Quaternary Geology and Geomorphology Division of GSA, US Representative to the UN International Geological Correlation Program, and the Director of Field Excursions for the 2003 International Quaternary Congress. He has received awards for 'Distinguished service to the Geological Society of America,' 'Lifetime Achievement Award,' and Honorable mention by the American Men of Science as one of "The Most Influential Scientists in North America." He has been featured in the NY Times and has appeared on national TV network shows at MSNBC, CNN, CBS and FOX.

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Prevalence of Acute Myelogenous Leukemia (AML) in sugar creek residents

James Dahlgren and Patrick Talbot
James Dahlgren Medical, USA

A former oil refinery located immediately to the north of the community operated for about 80 years before closing in the 1980s. The plant has a documented history of benzene containing gasoline leaks dating back to its first years of operation. The gasoline produced at this refinery that was shown to have leaked into water sources and neighborhood contained 0.7–5% benzene. It is estimated that more than six million gallons of unrecovered leachate remains in the ground beneath and surrounding the plant, including the residential community of Sugar Creek. Acute myelogenous leukemia is a well-known result of benzene exposure that has occurred from low exposures from an environmental or workplace exposure. The exposure levels in this study we're derived from interviews of the residents within one mile of the abandoned refinery. All of these subjects lived in the area while the refinery was still operational and described high-level strong gasoline odor. The strong odor threshold for benzene is approximately 150ppm and a conservative gasoline vapor concentration of 150ppm was used whenever one reported smelling the odor of gasoline, which was often. There were at least 3,839 people at risk within one mile of the refinery during the relevant time frames. I received data on 12 individuals, including children, diagnosed with AML who lived within one mile of the old refinery for an average of 25.25 years. One subject's exposure began in 1949 while the average year of onset of exposure was in 1959. The expected rate in a population of 3,839 based on US national prevalence rates per 100,000 populations for all leukemia is 3.11. The rate of sub-type leukemia AML is approximately 27% of the total leukemia. Thus, the relative risk for AML is 0.837 in a normal population, and we would expect to see a rate of less than one in a population the size of Sugar Creek. In this case, there were 12 cases giving a relative risk (RR) of 14.37. A recent study found a similar significant excess of leukemia in a community exposed to a gasoline spill with very low exposures compared to the current case.

Biography

James Dahlgren is a Board-Certified Internist, retired Assistant Professor from UCLA School of Medicine. He has been in Private Practice of Internal Medicine with a sub specialty in Toxicology for over forty years. He has studied and treated thousands of patients with toxic chemical injuries including numerous victims of toxic chemical poisoning including the subjects dramatized in the Erin Brockovich movie. He has been treating and evaluating people with exposures to toxic chemicals since the 1970's.

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Adaptation assessment for silage maize production in response to climate change in a semi-arid region

Renalda El-Samra¹, Mutasem El-Fadel², Rami Zurayk², Majdi Abou Najm², Ibrahim Alameddine², Elie Bou-Zeid³, Georgiy Stenchikov⁴ and Hamza Kunhu Bangalath⁵

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The impact of climate change and adaptation strategies on silage maize (*Zea Mays* var. Oropesa) production in a semi-arid region was conducted for the past and the near future (2011-2050) under the conditions of two Representative Concentration Pathways (RCPs) (4.5 and 8.5). For this purpose, outputs from the High Resolution Atmospheric Model (HiRAM), running at 25km around the globe, were dynamically downscaled using the Weather Research and Forecasting (WRF) model at a sequential resolution of 9 and 3km. Downscaling simulations covered a baseline past dry and hot year (2008) and eight future (2011-2050) years (one year per decade per RCP) identified as the worst-case scenarios from a water resources perspective. The resulting climate change scenarios were then used as weather input to CropSyst, a soil-plant growth simulator and experimental data sampled during the 2004 to 2008 growing seasons were used to calibrate and validate the model. The potential decrease in precipitation and predicted warmer air temperatures associated with an increase in CO₂ accelerated plant phenology, reducing crop yields by an average of ~23% under RCP4.5 and ~20% under RCP8.5 in comparison with the baseline yield of 2008. The results indicate that analysis of the implications of variations in the planting date on maize production may be most useful for site-specific analyses of possible mitigation of the impacts of climate change through alteration of crop management practices. The most effective planting date is the one selected based on seasonal forecasting. The selected dates ensure the absence of frost temperatures and the occurrence of the baseline cutoff temperature of 10°C necessary for silage maize sowing. Other adaptation measures can be to adopt higher-yielding and heat resistant cultivars or sowing other plants that uses less water such as *Sorghum* and Millet and improve water conservation techniques.

Biography

Renalda El-Samra has completed her PhD in Environmental and Water Resources from the American University of Beirut. She is an Assistant Professor at Rafik Hariri University. She has over two decades of professional experience in the Environmental Sector.

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High-rise timber buildings as a climate change mitigation measure

Julie L Skullestad
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Statement of the Problem: Buildings account for a large share of the global GHG emissions. UN Habitat estimates that 3 billion people will need a new home in the next 20 years due to population growth. The climate change impact (CC) of construction and operation of buildings may triple by 2050 if business as usual is practiced meeting the demand. Extensive migration to cities combined with emission reduction targets calls for dense urban areas with high-rise buildings. This allows for efficient energy use and less transport. However, building tall comes with a “CO₂-premium”: Tall buildings of steel and concrete require stronger structures, and have greater use of materials per floor area than low buildings. It is therefore crucial to use materials with lower CC. Long-lived timber materials act as a carbon storage and require less energy in production.

Methodology: Life cycle assessment (LCA) has been utilized to compare the CC of functional equivalent load bearing structures in timber and concrete for high-rise buildings. The structures are analyzed with several LCA methodologies, covering both attributional and consequential LCA.

Conclusion & Significance: Constructing with timber has a great potential of reducing the CC of high-rise buildings, compared to concrete structures. The CO₂-premium of building height is substantially less significant for timber structures than concrete structures. Hence, the CC saving potential is increasing with building height for tall structures. The reduction potential varies with regions and production technologies for material production. However, most cases show a significant reduced CC for the timber structures. If the potential for recycling and reusing the materials after the building's life cycle is taken into account, the timber structures have an even greater advantage, as the materials can be incinerated with heat recovery to substitute other means of heat production.

Biography

Julie L Skullestad has her expertise in Life Cycle Assessment (LCA) and Sustainable Architecture and Infrastructure. She has finished her studies in Environmental Sciences and Industrial Ecology at NTNU (Norwegian University of Science and Technology) in 2016. Her research related to her Master's thesis has gained national and international attention, as she produced the first study on the climate change impact of high-rise timber buildings. The study was published in *Energy Procedia* and presented at the conference "Build Green Renovate Deep) in Tallinn in 2016. She is currently working as an Environmental Advisor in the Norwegian Company Asplan Viak, where she is advising architects, builders, municipalities and the government in emission reduction strategies, alongside participating in research and development of LCA methods and tools. She has also had several lectures and presentations in Norway related to LCA and climate friendly construction materials.

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Is climate change the Armageddon foretold to the world? A review

Gbuje Daniel Chidubem

University of Port Harcourt Teaching Hospital, Nigeria

Statement of the Problem: Climate change impact reveals how man has destroyed earth through burning of fossil fuel and depletion of natural resources? These activities may have worsened and altered the ecological biosphere by causing changes in all the climate entities. This extreme phenomenon called climate change has a negative impact on health. The aim of this paper is to encourage global and national proactive policies and strategic approaches towards tackling climate change.

Methodology: This study involved screening of articles that primarily discussed climate change and its consequences. Articles used for this research came from scientific search engines, research journals, Newspapers, TV reporting, Textbooks and international agencies' reports on climate change.

Findings: This article identified the causes of climate change and its consequences to mankind. It equally noted the evolving human attitude towards other species and to follow humans manifesting in various forms as extreme violent conflicts, negative laws that hampers the effort to mitigate its impact, as they compete for the depleting natural resources. Further, juxtaposing these thoughts with what should be our urgent action plan to mitigate or manage possible consequences of climate change effects. Though the concept of using technology through geo-engineering system to create a climatic condition conducive for human existence seems promising for future but promoting healthy lifestyles and public awareness to mitigating the climate change effect still remain a realistic approach in the interim while we encourage innovative energy efficient and renewable technology.

Conclusion & Significance: This paper is also intended to contribute to the existing knowledge on climate change while creating awareness on the need to regulate human activities to prevent the likely extinction of life form on earth while providing a collaborative ideas or solutions for developing nations specially to attain sustainable ecological development through adaption and mitigation.

Biography

Gbuje Daniel Chidubem has his major interest is the protection environment and promotion of sustainable development goals among developing nations in Africa. He works temporarily with in a Teaching Hospital in Rivers State, Nigeria for over six years as a Medical Officer. He is an Advocate for youth empowerment through education, an Environmental Activist and an Advocate of better health care delivery in Nigeria and West Africa. He has published articles, editorial and made numerous international presentations on sustainable development goals especially on health and leadership challenges. He serves on several local and national boards in Nigeria. He is an Associate Member of the World Medical Association, the Chief Volunteer Coordinator of Sure Health Organization an NGO and an official with Junior Doctors of Africa. He was an Atlas Corp Fellow for 2017 and was a delegate to the last UN climate change convention in Marrakesh Morocco.

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Identifying appropriate indicators for vulnerability to climate change

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The assessment of an area's vulnerability to climate change can contribute to improvement of planning and policy making decisions. However, the assessment can only be deemed effective if the appropriate vulnerability indicators are selected. Vulnerability to climate change is composed of three indicators: sensitivity, exposure, and adaptive capacity. In the Philippines, government institutions such as the Housing and Land Use Regulatory Board (HLURB) established a framework and methodology for conducting a vulnerability assessment as an input to mainstreaming climate change in land use planning. Part of the methodology includes a set of vulnerability indicators on which local government units can choose from. This research aims to find out which among the indicators from the HLURB's vulnerability assessment framework are accessible to Magalang, Pampanga? Most of the vulnerability indicators are shown to be not available due to the lack of data. Given this emphasis, determining the appropriate indicators within the context of a specific area is necessary before conducting vulnerability assessment to ascertain their applicability as well as their efficacy.

Biography

Alyosha Ezra Mallari is pursuing his PhD in Urban and Regional Planning at the School of Urban and Regional Planning, University of the Philippines. He has a Master's degree of Urban and Regional Planning and a Bachelor's degree in Industrial Engineering (cum laude) from the University of the Philippines. His academic and professional interests and advocacies include: land use change analysis, land use planning, geographical information systems, climate change vulnerability and risk assessment. He has presented in two international conferences held in Italy (Urban Planning and Architectural Design for Sustainable Development, 2015) and Spain (World Conference on Climate Change, 2016).

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Design of biofuel production units from *Jatropha curcas*

Mouako Djeumako Boris
University of Ngaoundéré, Cameroon

The *Jatropha curcas* has been identified as an oleaginous plant with an oil content of about 45%. Different studies have shown that a transesterification of this oil makes it possible to obtain biodiesel. The project involved the design and manufacture of an oilseed press and the design of winnowing equipment and a transesterification unit to convert *Jatropha* into biodiesel. Seeds of *Jatropha curcas* selected from the northern regions of Cameroon as part of the ESA project were distributed to farmers in Ngaoundere to popularize this plant in Adamaoua. The main long-term objective is the establishment of a biofuel pilot unit; this unit will be duplicated across Africa to contribute to bridging the energy deficit of our continent, through this renewable energy source. In the same way, it will contribute to the reforestation of the continent, especially in the arid zones. In perspective, we also plan the design and manufacture of fireplaces adapted to this fuel to offer rural women an alternative to the use of wood for cooking as is customary in Africa.

Biography

Mouako Djeumako Boris is a Technology Enthusiast, who has set himself the goal of designing and making available to African agriculture technologies adapted to the socio-technical context in order to enable farmers to increase the value chain and ensure the good health of consumers. He also conducts research in the fields of hybrid power supplies that can combine biogas with solar energy and optimize the energy efficiency of equipment and buildings.

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How did AfroGreenTech work?

Leuga Monkam Ignace Bertrand
AfroGreenTech, Cameroon

According to the light power action report published by the Africa progress panel, 620,000,000 Africans are not connected to the electricity grid. Moreover, the incomes of two-thirds of African families depend on agriculture. In most cases, it is a subsistence farming whose labor is family and is practiced with rudimentary tools. Initiatives have been put in place to organize farmers into cooperatives, but the lack of adequate monitoring leads to the ineffectiveness of this approach. Yet, with global warming, we will face two major challenges: how to lead a development in breach with the energies of fossil origin? And how can farmers be protected from the various risks associated with climate change? The answer to these two questions is found with this is technology. Therefore, in order to provide farmers with the technology needed to improve production, crop transformation and the adaptation to global warming that we have created AfroGreenTech. Here, we create a community made up of farmer organizations, trainers, innovators, insurance institutions, investors and distributors. This will boost the sector and produce a significant change.

Biography

Leuga Monkam Ignace Bertrand is the Co-founder of AfroGreenTech, a startup that is revolutionizing agriculture in Africa. He is passionate about the environment. This allowed him to pursue studies in this field. In this sense, he carried out various studies, among which: "The inventory of forest exploitation in the locality of Ngoume in the central region in Cameroon". He then carried out an environmental impact study in the locality of Lolodove in the South region of Cameroon. Subsequently, he worked on the valorization of non-hospital organic waste at the Mother and Children Center of the Chantal Biya Foundation. He also worked on the management of plastic waste in the locality of Ngaoundere.

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Climate, desertification and sustainability in the Sahara desert

Mohammed Sherzad
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The transport and deposition of sand by wind are important factors which contribute to desertification process in the Sahara desert. These regions contain more than 350 cities (Razavi, 1989). Sand encroachment and deposition in built environments cause a number of problems such as erosion of building materials, and substantial coverage and often complete burial of urban features such as buildings, transport facilities and roads, which then need continuous clearance and incur continuing costs. In addition, the coverage of vegetation and agricultural lands has led residents in some areas to abandon their houses or even entire settlements. This presents a complex problem to the architects as it demands attention not only to certain aspects of building design but also planning the settlement as a whole. However, there is evidence that specific layouts and building forms of some vernacular settlements in areas of active sand dunes, such as the region of Souf in the Algerian Sahara, have survived and mitigated the impact of sand encroachment and deposition. The destructive effects of sand deposition are more pronounced around contemporarily designed housing projects, which led many of them to be abandoned. The aims of this research were to investigate the relationship between dwelling forms and the sand depositional geometrical patterns formed around them, in particular around those located in areas of active sand dunes in hot arid lands, and to propose some possible design indicators for building forms which may mitigate the undesirable features of sand deposition around them.

Biography

Mohammed Sherzad is a Faculty Member at Department of Architectural Engineering, Ajman University. He is also Director of University Engineering Consultant Office. His reach interests are architecture in hot climate, sustainability and environmental behavior.

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Discovery: Reduction in photosynthesis correlation to atmospheric CO₂ increase

Dave White C H E

Climate Change Truth Inc., USA

Since 1950, the Amazon Rain-forest has been deforested. An average of 12 million hectare per year. This deforestation causes a minimum of 30% of the biomass to be burned. The burning of the biomass is adding billion of tons of carbon dioxide to the atmosphere. The carbon dioxide has overwhelmed the rain-forest and caused massive decay. The rain-forest has now become an oxygen sink and carbon dioxide producer. To solve these issues, the deforestation and burning needs to stop. Then after 10 years, the burning can continue 10% a year for 10 years. This will heal the amazon and bring down atmospheric carbon dioxide. After a few years the global carbon dioxide will start to decrease. After 10 years, the rain-forest will be healed. In addition, if we plant trees and shrubs worldwide, we will bring down the atmospheric carbon dioxide much faster.

Biography

Dave White C H E is a Chemical Engineer, currently working on climate change. He has 30 years' experience since graduation in 1984. Promoting responsibility to environment and health of all species. He has graduated in Chemical Engineering in 1984. During the time at Oregon State University, he has worked on a cross flow counter current scrubber for coal fired power plants. Then he moved to Hillsboro with his wife and worked in Semiconductors. In 2006, he, along with Dr. Tom Wallow produced a paper on ArF double patterning for semiconductors. This multi-patterning scheme is widely used in today's semiconductor manufacturing plants. In 2011, he started a consulting business for Semiconductors. In 2017, he has started Climate Change Truth Research Inc. His research interests are evaporation from the ocean, rain forest destruction effects and diffusion of CO₂ through the atmosphere.

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The effects of ocean circulation on formation of the great ice ages

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Global Climate for the past One Million years has proven to be remarkably symmetrical, in both its temperature variation and temporal periodicity. Geological evidence for the periodicity became evident in the 19th century and certain in the mid-20th, when seabed cores were taken from all oceans in the world. Reconstruction of oceanic water levels added to the evidence of this confirmed symmetry. In the 1950s, Oceanographer Maurice Ewing, heading Columbia University's Lamont Earth Observatory, and Geologist William Donn, used seabed core evidence to aid in developing a theory of Ice ages and their causes. Ocean circulation, particularly over the passages on either side of Bear Island, was critical. The framework they proposed underwent a number of revisions and was not well understood. The brilliant Russian research conducted at the Vostok East Antarctica Ice Station helped in clarifying everything. Their Ice Core project was designed to penetrate into Lake Vostok. This huge lake was situated 3 kilometers under the ice and the 10-year effort yielded stunning results that included exposing Milankovitch signals within the symmetrical periodicity of temperature and CO₂. A singular asymmetrical variation covering the most recent 10K years appears to disrupt the sequence, but there is a real likelihood that this pattern is not abnormal and a research proposal to resolve the discrepancy (and confirm the actual symmetry) will be offered. Magnetic effects, Piano Key evidence and Earth surface vs. core rotational aspects along with ocean currents are inclusively addressed.

Biography

Tom Wismuller forecasted weather at Amsterdam's Royal Dutch Weather Bureau after studying Meteorology at NYU and Stanford. Selected for a future executive NASA internship, he worked throughout NASA and its Directorates before, during, and after the Moon Landings. He became Administration Director of the government operations at Pratt & Whitney and held Insurance Industry Executive and Board positions. The polynomial regression mathematics, algorithms or code, he personally produced after leaving NASA, is used by almost all climate scientists on the planet for analytical and modeling. He lectures worldwide on the SCIENCE/DATA needed to understand climate. In 2008, he was highlighted in the "50th Anniversary of NASA" issue of AIAA's "Horizons" magazine. He was the meteorologist member of 2012's NASA 49 and NASA 41; Scientists, Astronauts, Engineers, and NASA Field Center Directors requesting improvements in NASA's handling of climate issues. He chaired "Water Day" in 2013 at UNESCO-IHE, the world's leading water research graduate center, and went on to chair the Oceanographic Section of the massive 2016 World Congress on Oceans in Qingdao, China.

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Coastal hazard assessment for Miami and its surrounding areas in Florida

Quang Nguyen

University of Mississippi, USA

Coastal areas are prone to many natural hazards such as extreme rainfall floods, sea level rise (SLR), and tsunami. Miami is known as the most vulnerable areas to weather related natural disaster in the United States due to its low elevation and being surrounded by ocean. The primary objective of this presentation was to present the Hydrologic Engineering Center's River Analysis System (HEC-RAS) floodplain modeling, Center for Advanced Infrastructure Technology (CAIT) SLR simulation, and CAIT tsunami simulation using high resolution laser-based digital elevation model data of the terrain and Landsat-8 imagery to evaluate the impact of extreme rainfall floods, SLR, and tsunami on Miami and its surrounding areas. The CAIT tsunami simulation methodology was motivated from the 9m tsunami wave peak height (WPH) that hit the Kesenuma Bay in Japan on March 11, 2011. The key results of the HEC-RAS floodplain modeling indicate that 409.64km², or 56.76% of the land area is inundated by floodwater. The affected population due to an extreme rainfall flood is around 1.42 million. The results of the SLR simulation show that the submerged land due to 2m SLR is 411.96km² (57.08% of the land area). The affected population from a 2m SLR is 1.43 million. Results of the tsunami simulation show that 703.05km², or 97.41% of the land area is submerged by the 9m tsunami WPH. The affected population from the 9m tsunami WPH is 2.40 million. This study indicates that floods caused by rainfall or tsunami in a short period of time affect a larger inundation area than the submerged area caused by SLR simulation for year 2100 gradual sea level rise. A resilience management plan was also recommended to protect people, infrastructure from the coastal hazards.

Biography

Quang Nguyen has completed his PhD degree in Engineering Science from the University of Mississippi in the United States and his MS degree from Hiroshima University in Japan. He has 13 years of experience in both academia and industry in the field of environmental science and engineering, emphasis in climate change, coastal hazards, and coastal floods. He has worked for 13 projects funded by prestigious sources such as the US Department of Transportation, World Bank, Asian Development Bank, and MacArthur Foundation. He has published numerous papers in journals and international conferences.

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Concerns of fairness, justice and equity to climate change

Pankaj Choudhary
University of Delhi, India

Concerns of fairness, justice and equity are not new to climate change talks. Widespread consensus among scientific community that the earth's climate is rapidly changing mainly as a result of increases in greenhouse gases caused by human activities, has forced policy makers at national and international level to adopt Paris climate change agreement. Even after this agreement came into force on Nov 4, 2016, concerns over its fairness, equity and justice continue to remain a key point of discussion among policymakers of developing countries. India's environmental minister Anil Dave recently remarked in Marrakesh that equal focus should be given to pre-2020 actions by developed countries under Kyoto protocol. In fact, in recent legal literature equity, justice and fairness are considered major legal concept in application of law. This paper is a humble attempt to analyze legislative response to Paris climate change agreement and adoption of justice and fairness in its application. It argues, among other things that subjectivity involved in the concept of climate justice and equity can be removed by adequate elaboration of ethical norms specific to climate change. Adopting a more pluralist understanding of the laws governing climate change regime can also help us to achieve equity and justice in climate change negotiations.

Biography

Pankaj Choudhary is the Students' Union Adviser of Campus Law Centre in the University of Delhi, India. He has been served as a President in PG Law Students' Union, Faculty of Law, Delhi University (2013-14) and Legal Aid Society in the Faculty of Law, Delhi University. He has attended and spoken at multiple international conferences on law, politics, science and technology, and environment laws. In November 2016, he has attended International Yoga Conference in Vietnam and in January 2017, he has attended Let's Do It Environment Conference in Tallinn, Estonia. He is also serving on many student committees, including placement Assistance Council and Maintenance committee.

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Use of bacterial consortia isolated from the rhizosphere of *Spartina sp.* to reduce the climate change impacts on salt marsh vegetation contaminated by heavy metals

Karina Paredes Páliz^{1,2}

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Ecosystems worldwide are experiencing the effects of climate change, and estuaries and salt marshes are no exceptions. Climate change can affect salt marshes in a number of ways. One of the greatest effects of climate change in salt marshes areas is the increase in the frequency of dry periods, where levels of accumulation of heavy metals reach critical values. Being highly productive, the plant community will be one of the most affected elements by these climatic shifts, both in terms of structure and dynamics, with undeniable effects on its productivity. Our aim was proposing a plant-bacteria association for phytoremediation of polluted salt marshes (Odiel, SW Spain), in order to reducing the effects of climate change associated with the accumulation of metals. For this purpose, three autochthonous bacterial strains (Gram negative *Pantoea agglomerans* RSO6 and RSO7, together with Gram positive *Bacillus aryabhattai* RSO25), were previously selected on the basis of metal resistance and biosorption, plant growth promoting properties and the capacity to form biofilms. This work advances a step forward, by using them as inoculants for the halophyte *Spartina densiflora*. All three bacteria, particularly *Pantoea* strains, promoted plant growth on polluted sediments. Moreover, they mitigated metal stress, as revealed from physiological parameters, such as, functionality of the photosynthetic apparatus (PSII) and maintenance of nutrient balance. However, whereas Gram negative strains did not significantly affect metal accumulation in plants, the Gram positive bacterium enhanced metal accumulation in roots, without further loading to shoots. Our results confirm the possibility of modulating plant growth and metal accumulation in polluted sediments upon inoculation with selected bacteria, as well as the suitability of halophyte-rhizobacteria interactions as a biotechnological tool for metal phytostabilization of salt marshes, thus preventing the risk of metal transfer to the food chain.

Biography

Karina Paredes Páliz is a Researcher from Ecuador who has taken her degree in Biology. She has a grant from the Ecuadorian Government and is currently pursuing her PhD in Molecular Biology and Biomedicine in the Department of Microbiology and Parasitology of the Faculty of Pharmacy (University of Seville). The area that focuses her research is Environmental Biotechnology, specifically the Bioremediation of heavy metals with the use of bacteria and plants. Several of her works focus in the Phytoremediation of estuaries contaminated near to the River Odiel, province of Huelva-Spain.

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Proposal for the sensitization on galamsey operation in Noyem in the Birim north district in the eastern region

Aminu Abdul Aziz

University for Development Studies, Ghana

Noyem is a community in the Birim north district of the eastern region. It shares boundaries with Akoase, Nyafoman, Nwinso and Tarkoso. The people in the community are predominantly farmers. Key among the problems confronting them in the community is the galamsey activities which is causing environmental degradation and climatic change as a result of the use of explosive chemicals for mining. The Newmont Ghana limited, is the only authorized and legally registered mining company to embark on mining activities in the district. Therefore, any other mining activity is considered illegal, which poses threats to the environment, and the existing natural resources in the community, such as trees, water bodies, etc. This has therefore caused a lot of challenges to the natives of the community, with skin diseases and outbreak of other diseases. The hygiene situation in the community is nothing good to write about due to the illegal mining activities (galamsey). The need therefore arises for the sensitization program, to create the awareness on the effect of the galamsey activities to the community. I believe, this will ensure at least 90% reduction of the illegal mining activity and the threats it poses on the natural resources and the community as a whole.

Biography

Aminu Abdul Aziz has completed his Bachelor of Art Integrated Business from the University for Development Studies with Honors in 2013 and Diploma in Management Studies 2011 and Certificate in Tally Accounting Software in 2012. He is a Member of the Young African Leadership Initiative. He has his expertise in poverty reduction and environmental protection. He has years of in experience in research, administration, accounts and insurance claims both in hospital and construction company.

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5th World Conference on

CLIMATE CHANGE AND GLOBAL WARMING

May 23-24, 2018 | New York, USA

Impacts of climate change on pastoral communities, their coping mechanism and government and partners interventions in Garissa county, Kenya

Abdullahi Yussuf Abdi
Kenyatta University, Kenya

Climate change is a long-term shift in weather conditions identified by changes in temperature, precipitation, winds, and other indicators. Changes in climate have significant impacts on the livestock production. Heat stress, droughts, and events has led to reductions in pasture and water availability hence loss of livestock productivity climate change increases the odds of worsening drought in Garissa county. There is no doubt that pastoral livelihoods are under severe threats from recurrent droughts in the ASALS in Kenya. Over the years, these pastoralists have developed mechanisms to cope with these droughts. Unfortunately, these strategies are no longer adequate as the droughts have increased in frequency and magnitude. This is in addition to other compounding political, economic and environmental threats that these pastoralists face. Other actors like the government and developmental partners have also developed and implemented interventions to help pastoralists adapt to these drought events and reduce their vulnerability. Some of these initiatives have been reactionary while some yielded unintended negative consequences that have exacerbated the vulnerability of these pastoralists. The purpose of this study was therefore to establish drought implications on livelihood and adaptation mechanisms; a case study of Garissa county. The research has three objectives; First is to identify the implications of drought on community livelihood in Garissa, secondly is to find out the role played by institutions involved in drought management, and lastly is to assess community beliefs, knowledge and attitudes to enhance adaptation mechanisms in Garissa. Selected methodologies will be used to collect data from the field which includes questionnaires and interviews. The collected data will be analyzed both qualitatively and quantitatively. The findings of this study will establish the determinants of poor drought preparedness and adaptation. Based on the findings of the study, policy recommendations will be made on to the key stakeholders of the drought sector to improve the adaptation mechanism.

Biography

Abdullahi Yussuf Abdi is pursuing his Master' degree in Environmental Studies (Climate Change and sustainability) Kenyatta University. He is an independent thinker who is passionate in working with communities to make their lives better. Currently, he is working with the county Government of Garissa, Department of Special Programs, where he participates with other relevant sectors in drafting climate change bill for county.

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5th World Conference on

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May 23-24, 2018 | New York, USA

Agriculture vulnerability under climate change

Ada Metaliu

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Farmers in Albania, in general, are smallholders with poor farming systems; with a low-level of technology and very high production costs. Adding to that, farmers now have to cope with the impacts of climate change. Based on many scientific studies, climatic conditions are likely to bring both negative and positive changes in agriculture. Our goal is to raise awareness about agriculture vulnerability in Albania. Our case study was Shkodra region which is one of the vulnerable regions to climate change in Albania. What is more, historically Shkodra have been historically affected by consequences of extreme weather events which have been intensified also as a result of the compulsory discharges of hydropower plants in the region during winter season. For this study we conducted a survey by interviewing 185 smallholders in 14 municipalities distributed around 4 different types of geographical areas (mountains, hills, fields and coast). The purpose of the survey was to collect information about farming conditions and their vulnerability level under climate change. We also had discussions with experts, in talking about evidences of climate change impacts in Albanian agriculture as well as identifying the factors which makes Albanian farmers vulnerable to climate change. A big concern for smallholders was the use of water in agriculture due to a lack of irrigation systems and a fluctuation of precipitation in the recent decades. They have experienced both positive and negative impacts from climate change in relation to food production but because of market conditions and farming systems they are not responding to such impacts. Statistical methods have been used to analyze information collected from the survey. The techniques that we have been using are mainly tabular and graphical presentations. The participatory approach is based on the perceptions and assessment of the farmers of the selected areas.

Biography

Ada Metaliu has her expertise in agrarian economy. She has been awarded with Ph.D. Scholarship in Socio-economic modelling related to climate change by IPCC and Prince Albert II of Monaco Foundation. She also received a Master degree in Business management from International Center for Advanced Mediterranean Agronomic Studies. She worked for FAO as National Consultant, Gender research assistant and translator in Albania. She became a Climate Leader in Climate Reality Project, Pittsburgh (United States) 2017. She also participated in "Climate Change Adaptation" workshop, National ECRAN Adaptation Teams Launch workshop for Balkan (step A, B1, B2) Financed by the TAIX "Technical Assistance and Information Exchange instrument of the European Commission"

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