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## Introduction

The 7<sup>th</sup> ICSD 2019 is organized by the European Center of Sustainable Development, at the Roma Eventi- Fontana di Trevi, Piazza della Pilotta, 4 Rome, Italy from:

**Wednesday 04 to Thursday 05 September, 2019**

7<sup>th</sup> ICSD2019 will be an excellent opportunity to present your projects and discuss the latest results in the field of Sustainability Science. The general aim of the conference is to promote international collaboration in Sustainability Science and related disciplines.

The Conference theme is *Creating a unified foundation for the Sustainable Development: research, practice and education*. This theme emphasizes the strong foundation that is provided by using research to inform our everyday practices, policies, and research approaches. The 2017 Conference will once again provide a forum for the sharing of ideas, presentation of research findings, and discussion of professional issues relevant to Sustainability Science.

On behalf of the Scientific Program Committee, I have great pleasure in presenting this important event of the Scientific Community.

The Conference topics are distributed in the range of the following streams within the ICSD2019 program:

- 1. Economic Sustainability:**
- 2. Environmental Sustainability:**
- 3. Socio-Cultural Sustainability:**

All abstracts were reviewed by members of the ICSD2019 Steering Committee for rating of abstract quality and presentation content.

Selected papers are also published at the European Journal of Sustainable Development.

Further details in accordance with the instructions of the ICSD2019 are provided on the [Call for Papers](#) page at: [www.ecsdev.org](http://www.ecsdev.org)

I would like to thank you for your scientific contribution to the Second International Conference on Sustainable Development and look forward to having the opportunity to showcase and disseminate your research.

Special thanks also to the organizing committee, and all the people that worked hard, to bring in light this considerable event

Yours sincerely

[Professor Gian Paolo Caselli](#)

Chair, 7<sup>th</sup> ICSD2019 Steering Committee

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# Conference Program

# 1. Will Curtains Come Down for the Sustainable Theatre – Evaluating Growth Challenges from an Island Nation

Seck Tan

## **ABSTRACT:**

Sustainable development (as defined by The Brundtland Report) points to development that meets the needs of the present without compromising the ability of future generations to meet their own. However, sustainable development denotes different perspectives to different audience; and for development to be truly sustainable, growth must be inclusive and demands equal attention to the tri-nexus of economy, society and the environment. Unfortunately, this is far from reality. In an effort to continue growing, economies pedestalize economic progress where attention is skewed towards economic performance with an intentional disregard to the environment. For the purpose of this paper, sustainable development focuses on debates between the twin-nexus of economy and the environment. This paper highlights sustainable development challenges for Singapore (an island nation). While most studies centered on Singapore's miraculous growth, few have examined the island's use of its environmental capital for economic growth. Island economies face similar development challenges like most global economies; the difference lies in their natural endowments (or the lack of). This highlights the need for policies to advance ecosystem preservation in land-scarce Singapore. With the use of a simple environmental valuation framework, it is demonstrated that the island nation has not fared too badly in protecting its environmental capital.

*Keywords: Ecosystem, Environmental Capital, Island Nation, Singapore, Sustainable Development*

**Dr. Seck Tan** is Assistant Professor at the Singapore Institute of Technology (SIT), Singapore. Seck's main research focus is on sustainable development and environmental economics. These are made with reference to environmental accounting, valuation of environmental goods and services, and resource management applied to commodity-rich economies. Seck is an applied economist with broad research interests in policy analysis and policy recommendation towards sustainable development, and evidence-based public policy formulation in relation to energy and environmental issues. He has been quoted and interviewed on mainstream media pertaining to climate change and weather issues. At SIT, he holds the role of Deputy Programme Director for Bachelor of Science (Honours) in Air Transport Management.

## 2. Are People Making Correct Choices? Quality Perceptions, Source Choices and Drinking Water Quality in Rural India

Shiuli Vanaja

### ABSTRACT:

Access to clean drinking water is a problem for people living in several developing countries of South Asia and Africa. Drinking contaminated water can cause different water-borne diseases like diarrhea imposing health costs on the concerned households. In rural areas, people make decisions about water source choices, water handling practices and home treatment techniques based on their perceptions of quality. In this paper, a panel data collected from field surveys in 30 villages of Jharkhand state in India is being used to analyze the role of quality perceptions in water source choices and home treatment techniques in relation to objective measures of water quality. We find that the use of safe water sources, water filters, and handwashing after using toilet tend to significantly improve drinking water quality at home. Perceptions of water quality based on the color and taste of water have an indirect effect on water quality via source choices. People that choose a source of water based on the color tend to end up with lower drinking water quality at home while the opposite is true for households choosing a water source based on the taste of water. We use a household and village fixed effect model of estimation and objective measure of water quality based on the presence of *E. coli* bacteria in the water.

*Keywords: Water quality, source choice, perceptions, India*

Miss. **Shiuli Vanaja** is a Ph.D student in the Dyson school of applied economics and management at Cornell University, USA. She is also part of the Tata-Cornell Institute for agriculture and nutrition, field surveys and research-based project at Cornell University. Her main research interest lies in development economics. Presently, she is working on several papers based on the economics of household water use, behavioral patterns, time use of women and associated health costs.

### 3. Novel Affordable, Reliable and Efficient Technologies to Help Addressing the Water-Energy-Food Nexus

Francesco Meneguzzo, Federica Zabini, Lorenzo Albanese, Alfonso Crisci

#### ABSTRACT:

Improving the food system sustainability and security has become an urgent global challenge. In this regard, one of the most effective routes is the shift of the human diet toward healthier and more sustainable consumption, involving in particular the prevalence of plant-based food. Controlled hydrodynamic cavitation (HC) technologies could help considerably in this transition. HC techniques are gaining increased scientific interest, and are quickly spreading across a wide range of technical fields, recently showing surprising performances with biological raw materials related to the food, agricultural and forestry sectors and resources. HC processes enjoy recognized advantages in the acceleration of the processing steps of plant-based food, the extraction of valuable bioactive compounds, the reduction and the valorization of waste streams, as well as the superior efficiency in resource use, energy consumption, process yield, and exergy balance than competing processes. Thus, HC is very promising candidate to help addressing the water-energy-food nexus, and, ultimately, sustainability. Findings obtained from direct experimental trials and recent literature concerning applications to food processing, provide a strong basis for novel investigation aimed at standardization, starting from the identification of the most suitable devices and the optimal processing parameters, eventually oriented to further spreading of HC applications.

*Keywords: affordability; food; health; hydrodynamic cavitation; process yields; sustainability; water*

**Dr. Francesco Meneguzzo** is permanent researcher at the Institute of Biometeorology, National Research Council, Florence, Italy. Physicist, he started his career as a meteorologist and climatologist, then focused on energy systems and policies, finally on technological innovation in the agro-food sector. Currently, he is Scientific head of the HCT-agrifood Lab, where he investigates about the applications of controlled hydrodynamic cavitation techniques to the processing of food and biomasses. He participated to several international and national research projects, was Grant Professor of Meteorology at the University of Pisa, Italy, lecturer at post-university Master courses, and expert member of governmental commissions. He is co-author of about 150 scientific articles, book chapters, technical reports, conference presentations, and is frequent reviewer for primary scientific journals. He was appointed as inventor in a patent concerning a novel device and related method for the production of beer.

**Dr. Federica Zabini** is permanent technician at the Institute of Biometeorology, National Research Council, Florence, Italy. As an expert in scientific communication, her research areas include science communication about climate change, energy consumption and sustainable lifestyles. She participated to the "Kyoto Observatory" project of Tuscany Region to support monitoring, reporting and management of carbon balance in Tuscany (GHG emissions and CO<sub>2</sub>-absorbing capability of the vegetation). She is part of the communication team at LaMMA - Regional Weather Service of Tuscany, Italy. Currently, she is also responsible for project development at the HCT-agrifood Lab, where she investigates about the applications of controlled hydrodynamic cavitation techniques to the processing of food and biomasses. She is co-author of few scientific articles, book chapters, technical reports, and conference presentations, and is reviewer for primary scientific journals.

**Dr. Lorenzo Albanese** is permanent researcher at the Institute of Biometeorology, National Research Council, Florence, Italy. Agronomist and enologist, he started his career as a technologist in the field of transformation of agricultural products. His scientific interests shifted towards energy systems and devices, then to technological innovation in the agro-food sector. Currently, he is head of experimental activities of the HCT-agrifood Lab, where he investigates about the applications of controlled hydrodynamic cavitation techniques to the processing of food and biomasses. He participated to several international and national research projects, and is co-author of tenths of scientific articles, book chapters, technical reports, and conference presentations. He was appointed as inventor in a patent concerning a novel device and related method for the production of beer.

**Dr. Alfonso Crisci** is permanent researcher at the Institute of Biometeorology, National Research Council, Florence, Italy. Updating own agronomic/biometeorological background, his scientific interests are now focused on data mining techniques covering different scientific fields and investigation challenges. He is currently data scientist at the HCT-agrifood Lab, where he investigates physical and chemical data workflows provided by different applications of controlled hydrodynamic cavitation concerning food and biomass processing. He participated to several international and national research projects, and is co-author of tenths of scientific articles, book chapters, technical reports, and conference presentations. As an R package developer, he follows open and reproducible scientific frameworks in code and data production.



## 4. Sustainable Land use Planning Solutions for Water Resource Management in Serbia

Jelena Živanović Miljković, Marijana Pantić, Ljubiša Bezbradica

### ABSTRACT:

The paper starts from the fact that spatial and urban planning promote sound land use planning and express interests in the sustainable development of land, water and related resources and infrastructure. The authors investigate existing of sustainable land use planning solutions for water resources management within spatial planning documents. With regard to the fact that integration of water management (i.e. drinking water management, wastewater management etc.) and land use planning is essential in achieving sustainable development, this paper (1) introduces a national framework for sustainable land use and water management in Serbia; (2) analyzes the role of land use and water related issues within the land use decision making process; and (3) discusses and outlines the sustainable land use solutions within planning documents developed for special purpose areas, with focus on effects of land use planning solution on water resource management.

*Keywords: urban and spatial planning, sustainable land use, water management, Serbia*

**Dr Jelena Živanović Miljković** holds BSc, MSc and PhD degrees in Spatial Planning from the University of Belgrade, Faculty of Geography. She works as a Research Fellow at the Institute of Architecture and Urban & Spatial Planning of Serbia. Her research interests are focused on spatial, urban and peri-urban planning, land use planning, land policy, land development, and land property rights. She is a member of the Serbian Spatial Planners Association, Engineering Chamber of Serbia and International Academic Association on Planning, Law and Property Rights (PLPR).

**Dr Marijana Pantić** holds BSc and MSc degrees awarded by the Faculty of Geography University of Belgrade and PhD degree awarded by the Technische Universität Dresden - Faculty of Environmental Sciences. Currently she works as a Research Fellow at the Institute of Architecture and Urban & Spatial Planning of Serbia. Her research interests are focused on spatial and urban planning, demography, settlement network and typology, and mountain areas. She is a part of the "Cities in the future" initiative by the Academy of Engineering Sciences of Serbia.

**Ljubiša Bezbradica** holds M.Eng. degree from University of Belgrade, Faculty of Forestry. He works as a Research Trainee at the Institute of Architecture and Urban & Spatial Planning of Serbia. His research interests are focused on protection of soil from erosion, sustainable use of water resources in spatial planning. He is a member of the Engineering Chamber of Serbia.

## 5. The Role of Geothermal Waters in Sustainable Development Application of Main North Center Algerian Hot Springs (Righa, Biban, Ksena)

Abdelkader Ait Ouali, Abderrahmane Issaadi, Abdelhakim Ayadi, Khaled Imessad

### ABSTRACT:

The study zone is one of the significant thermal waters in the north Algeria. It is characterized by a cold climate with intense rain rates 700 mm/year. The Jurassic geothermal reservoir system is exploited by artesian thermal springs and traditional wells for agricultural purposes. The main reservoir lithology characterised by calcareous formations which yield the chemical features of highly mineralized Na-Cl type representing the thermal waters. Three main Hot springs was samples collected June 2018 with a temperature average between 55 and 80° C and conductivities range from 2520 to 3766  $\mu\text{S}/\text{cm}$ . For a better application of geothermal water sites a multidisciplinary methods was adopted, geological site study, water chemistry and touristic impact for local economic development. In this study a final map was realized of geothermal potential for possible exploitation of this.

*Keywords: Biban, thermal springs, sustainable development, geothermal use, water chemistry*

**(PhD) Abdelkader Ait Ouali** Permanent researcher at CDER (Centre de Développement des Energies Renouvelables) Algiers Algeria. Third Cycle Diploma in Geology (Hydrogeology & Geothermy). Currently working under geothermal team, geothermal reservoir exploration and thermal springs chemistry investigations.

**Pr Abderrahmane Issaadi**, Hydrogeology laboratory USTHB University, USTHB, BP 32 El Alia 16111, Bab Ezzouar 16111, Algérie.

**Abdelhakim Ayadi**, CRAAG, Centre de Recherche en Astronomie Astrophysique et Géophysique, Algiers, Algeria

**Khaled Imessad**, Laboratory Head, CDER / Centre de Développement des Energies Renouvelables

## 6. Rainfall in Bangladesh: Is Rainwater Harvesting a Sustainable Approach for Governing Rainwater?

M. Rafiqul Islam

### ABSTRACT:

Global environmental change affects the intensity and frequency of rainfall that increases the necessity for sustainable management of rainwater. It is more important for rain intensive country like Bangladesh otherwise it creates further problems like water logging, flood, soil erosion, and water borne diseases. Based on the survey of 80 rainwater harvesters in the Coastal Bangladesh in 2017, this paper evaluates whether rainwater harvesting is sustainable approach to govern rainwater or not by using social and ecological performance measures of Social Ecological System (SES) of Elinor Ostrom. This study found that rainwater harvesting does not affect environment, it is an acceptable approach in family and society, help to develop biodiversity condition, create resilience to climate change impact, improve equitable access to water, efficient use of rainwater, improve women performance regarding water supply to the family, contribute in achieving sustainable development goal, and do not overharvest of rainwater that could create environmental problem. Beyond these measures, it needs rainwater harvesting controlling mechanism like formal operation rule or policy to avoid overharvesting and ensure more sustainability in governing rainwater.

*Keywords: Accountability; Biodiversity; Efficiency; Resilience; Equity; Rainwater Harvesting; Sustainable Approach; Sustainable Management of Rainwater*

**M. Rafiqul Islam** is a Ph.D. Student, Department of Economics, University of Verona, Italy where he is investigating possibility of "Rainwater Harvesting in Fighting Climatic Concerns and Women Empowerment in Bangladesh". Before of his current position, he completed MSc (Master of Science), MBA (Master of Business Administration) at Twente University, Netherlands, and Dhaka University, Bangladesh respectively. Previously, he worked as Program Organizer Officer at BRAC in Bangladesh. He has some experiences in performing job in research project in Dhaka University, Bangladesh, and University of British Columbia, Canada. Based on his experiences and study, he published two articles in 2017 and two in 2018 in internationally renowned journal. His major areas of research interests are water governance/management, sustainable development, rainwater harvesting, climate change, women empowerment, environmental conservation, community livelihoods, and Bangladesh.

## 7. Assessing the Impact of Agricultural Production and Trade on Sustainability of Water Resources: Wheat's Water Footprint and Virtual Water Transfer in Turkey

Abdullah Muratoglu

### ABSTRACT:

High demand, together with lack of effective water management policies at regional and global scale raised increasing concerns on sustainability of water resources. Water footprint (WF) method is one of the comprehensive approaches which supports water management and sustainability studies by assessing both direct and indirect ways of water consumption. Hidden links of water utilization is investigated by virtual water (VW) concept which is defined as embedded water in products, mostly due to blue and green evapotranspiration (ET). Blue WF is defined as consumption of surface and groundwater reserves; green WF is total ET from rainfall. Being responsible from 80% of global blue water withdrawal makes agriculture to be the primary sector effected from water availability. Wheat is one of the mostly harvested crops and contains large volumes of VW, globally. The main scope of this study is to assess the WF of wheat production and consumption in Turkey and to investigate the VW transfer, national water savings (NWS) and global water savings (GWS) regarding to Turkey's wheat trade. Accordingly, Turkey's WF of wheat consumption is calculated as 48 Gm<sup>3</sup>/yr in which 9 Gm<sup>3</sup> water is imported. NWS and GWS is obtained as 7.8 and 1.1 Gm<sup>3</sup>, respectively. The VWC and crop water use of wheat production in each province has been estimated and mapped. This study is expected to increase the agricultural water allocation efficiency and contribute to the sustainability of national and global water resources.

*Keywords: Water, sustainability, management, agriculture, wheat, footprint, virtual water*

**Dr. Abdullah Muratoglu** is a young scientist and Assistant Professor in Civil Engineering Department of Batman University, Turkey. His research area include the water footprint, sustainability and management of water resources and renewable energy technologies. He supervises graduate students in water footprint research (BTU-WF) and hydrokinetic turbine design (BTU-HK) groups. BTU-WF research group investigates the spatial and temporal quantification and variations of national and international water footprints, virtual water contents and the virtual water transfer behind the traded product and commodities.

## 8. A Mediterranean Green Roof - Plant Growth, Substrate Depth and Composition and Type of Installation: Process and Initial Results

Christina Marouli, Paraskevi Papadopoulou, Anastasia Misseyani, Dimitris Georgas, Pinelopi Savvidou, Maria Koutsokali

### ABSTRACT:

In the last years, scientific research examining different aspects of green roofs has proliferated since the environmental benefits of green roofs for the city and biodiversity have now been recognized. Substrate depth and composition have been identified as important parameters that influence plant growth on green roofs. Furthermore, green roofs in the Mediterranean region constitute particularly challenging environments and the selection of appropriate plants for sustainable green roofs is an issue of concern. This paper presents the methodology and initial results of a Mediterranean green roof which was organized as an educational and participatory research process, from installation to research implementation and analysis. The research investigated plant growth in relation to substrate depth, composition and type of green roof. Three green roof plots of different substrate depths, various substrate composition and different type, i.e. open extensive or modular, green roof were installed at the American College of Greece, with the same 5 plants and irrigation pattern. Measurements of plant growth and soil characteristics as well as meteorological data were regularly obtained for a period of 21 months. Initial results indicate that while 4 plant species supported our initial assumptions one plant species, *Sedum sediforme*, appears to do better in lower substrate depths.

*Keywords: Green roofs, Mediterranean, plant growth, depth, substrate composition, type of green roof*

**Dr. Christina Marouli** has an interdisciplinary background (Biochemistry, Urban and Environmental Policy, Sociology) around environmental and health issues and is now Associate Professor at Deree – The American College of Greece. She has extensive experience in environmental education / education for sustainability in Higher Education, as well as a long experience as an environmental consultant on environmental and health issues and as a monitor of European funded environmental projects. At the American College of Greece, she founded the Center of Excellence for Sustainability in 2011, which she also directed until August 2017. In 2011, she was awarded a Fulbright award, in the context of which she did research on multicultural environmental education in collaboration with a Turkish professor. Her current research interests include sustainable and smart cities; education for sustainability, active and transformative learning, esp. in higher education; environmental behaviours and social change.

**Dr. Paraskevi Papadopoulou** is Professor of Biology at Deree -The American College of Greece. She holds Biology degrees from the University of California, Los Angeles and from the University of Athens

and a PhD in Biophysics and Cell Biology from the University of Athens. She has served as Head of the department of Science, Technology and Mathematics at Deree -The American University of Greece. Her research interests are focused in the fields of Structural Biology/Molecular Biophysics and Bioinformatics, on structural and self-assembly studies of fibrous proteins, which form extracellular, proteinaceous structures of physiological importance like lepidopteran, dipteran and fish chorions. Model structures of chorion proteins and their interactions have been proposed. She has also contributed to the development of genetic testing protocols for genetic diseases such as Tuberous Sclerosis and of Neurofibromatosis type 1. Her current research engagement is on Environmental Health Issues, Sexually Transmitted Diseases, Mediterranean biodiversity and green roofs, in addition to Higher Education research and innovative ways of teaching and learning in STEM disciplines plus on big data analytics in Bioinformatics and Medicine.

**Dr. Anastasia Misseyanni** is Associate Professor of Environmental Studies at Deree - The American College of Greece (ACG). She holds a Chemistry degree from the University of Athens and graduate degrees in Biochemistry from the University of Paris 7 (DEA) and the University of Marburg (PhD). She has developed and taught a significant number of undergraduate natural science and environmental studies courses with emphasis on chemistry, biological chemistry, environmental science, ecology, water resources and methods in environmental analysis. She has research experience in the fields of protein-DNA interactions and gene expression. Her present research interests include Mediterranean biodiversity and green roofs, environmental health issues, sustainability initiatives in higher education, innovative teaching and learning strategies in STEM disciplines, active and experiential learning. She coordinated the development of the Deree Environmental Studies program and has served as its program coordinator since 2010. Since fall 2014, she serves as Head of the Department of Science and Mathematics. She has contributed to efforts and initiatives to promote sustainability at ACG.

**Dimitris Georgas**, Environmental Studies Program, Department of Science and Mathematics, Deree - The American College of Greece

**Pinelopi Savvidou**, Environmental Studies Program, Deree - The American College of Greece

**Maria Koutsokali**, Science and Mathematics Department, Deree - The American College of Greece

## 9. Safeguarding Wild Plant Genetic Resources of Georgia within the Millennium Seed Bank Partnership

Tsira Pantsulaia-Mikatadze, Sandro Kolbaia, Ana Gogoladze

### ABSTRACT:

Working group of the Department of Plant Conservation of the National Botanical Garden of Georgia (NBGG) have been participating in the global Millennium Seed Bank Partnership, led by the Royal Botanic Gardens, Kew since 2005. During the 2005-2018 period, within the scope of MSB-1 and MSB-2, seeds and herbarium samples of more than 1750 plant species and interspecific taxa, belonging to 107 families and 483 genera (more than 41% of Georgia's flora) - 348 endemics of Caucasus and 151 endemics of Georgia, have been secured in the Georgian National Seed Bank (GNSB). Seed Bank data are managed in BRAHMS (Department of Plant Sciences of Oxford University). The collection of wild plant species is accompanied by the comprehensive database of geographical, botanical and habitat information. Later phase involves laboratory treatment and germination/viability testing (at least 500 seeds per species) and the long-term deposition and storage (under -20°C temperature) at the National Seed Bank of Georgia. The duplicates of seed collection and herbarium vouchers are stored at the Millennium Seed Bank of Royal Botanic Gardens, Kew, UK. Germination capacity and viability of collections in GNSB is determined before cold storage of seeds, while at the MSB already banked seeds are tested.

*Keywords: Seed bank, ex-situ conservation, plant diversity, botanical garden, genetic resources*

**Dr. Tsira Pantsulaia-Mikatadze** is the head of the Department of Plant Conservation of the National Botanical Garden of Georgia, Tbilisi, Georgia. Head of National Seed Bank of Georgia. Project manager of "Global Tree Seed Bank Project (Garfield Weston Foundation, UK, 2015-2019)", "Ex-situ and in-situ conservation of *Prunus microcarpa* a threatened species in eastern Georgia (BGCI, UK, 2017-19)", "Saving the Flora of the Caucasus (Royal Botanical Gardens Kew Grants, 2011-20)", "Enhancing Rural Caucasian Community Livelihood through Fruit and Nut Conservation (Darwin Initiative, UK, 2018-21)". Previous projects: "In-situ and ex-situ conservation action for the Georgian almond (*Amygdalus georgica*) (BGCI, UK, 2014-16)", "Collection of Crop Wild Relatives in Georgia by the National Botanical Garden (NBGG) (Global Crop Diversity Trust, Germany, 2014-16)", "Collection of seeds of native plant species from Georgian flora for ex-situ conservations at the Institute of Botany, Georgia and the Millennium Seed Bank (Royal Botanic Gardens (Kew) Grants UK # 4714 P 4/6, 2005-10)", "Sustainable Use & Conservation of Medicinal plant Resources in the Republic of Georgia (CRDF (U.S.A. Civilian Research & Development Foundation, USA, 2004-06))" etc.

**MSc Sandro Kolbaia** is the research assistant at the Department of Plant Conservation of the National Botanical Garden of Georgia, Tbilisi, Georgia. Project participant of "Global Tree Seed Bank Project (Garfield Weston Foundation, UK, 2015-2019)", "Ex-situ and in-situ conservation of *Prunus microcarpa* a threatened species in eastern Georgia (BGCI, UK, 2017-19)", "Saving the Flora of the Caucasus (Royal Botanical Gardens Kew Grants, 2011-20)", "Enhancing Rural Caucasian Community Livelihood through Fruit and Nut Conservation (Darwin Initiative, UK, 2018-21)". Works alongside at the Species Conservation Group NACRES as a habitat and flora specialist in scope of developing the Emerald Network in Georgia. Acquired Bachelor of Ecology from Iliia State University (2010-14) and Master of Plant Sciences from the University of Bonn (2015-18).

**Ana Gogoladze** is the research assistant at the Department of Plant Conservation of the National Botanical Garden of Georgia, Tbilisi, Georgia. Project participant of "Global Tree Seed Bank Project (Garfield Weston Foundation, UK, 2015-2019)", "Ex-situ and in-situ conservation of *Prunus microcarpa* a threatened species in eastern Georgia (BGCI, UK, 2017-19)", "Saving the Flora of the Caucasus (Royal Botanical Gardens Kew Grants, 2011-20)", "Enhancing Rural Caucasian Community Livelihood through Fruit and Nut Conservation (Darwin Initiative, UK, 2018-21)". PhD candidate at the Faculty of Natural Sciences of Ilia State University. Acquired Bachelor of Biology and Medicine from Tbilisi State University (1996-2000) and Master of Botany from Tbilisi State University (2000-2002).



## 10. Experimental Study of Mofs for the Removal of Siloxanes in Biogas Purification Processes

Sandra Pioquinto García, Nancy Elizabeth Dávila, José Rodríguez Mirasol, Norma Tiempos Flores, Sylvain Giraudet, Margarita Loredó Cancino, Eduardo Soto Regalado

### ABSTRACT:

The use of biogas that comes from landfills (LF) and wastewater treatment plants (WWTP), is an alternative that provides electricity to thousands of people, in addition to helping mitigate climate change by avoiding fuel consumption fossils for the generation of energy. Unfortunately in Mexico, one of the greatest challenges in the use of biogas is the costly investment in the biogas purification system that remove silicon contaminants called siloxanes. The present work shows the results obtained during the experimentation of a batch system to study the behavior of two metal-organic frameworks called MOF-Zn22 and MOF-Zn44 to adsorb the most common siloxane in biogas from LF and WWTP, octamethylcyclotetrasiloxane (D4). According to the results, the adsorption capacity of the MOF-Zn22 and MOF-Zn44 were 3.02 mg/g and 3.35 mg/g, respectively. It is presented an analysis of the main characteristics that provide the adsorption capacity of the MOFs tested.

*Keywords: biogas, purification, siloxane, adsorption, removal, MOFs*

**M.Sc. Sandra Pioquinto García** is a doctor student in sustainable processes of Universidad Autónoma de Nuevo León, México. She has experience in the areas of adsorption processes, renewable energies and synthesis of mesoporous adsorbent materials. She is a woman who enjoys working as a team, so she has participated in the edition of book chapters and organization of scientific conferences about climate change, renewable energy and green chemistry.

**Nancy Elizabeth Dávila**, Ph.D, Faculty of Chemical Science, Universidad Autónoma de Nuevo León, México.  
**José Rodríguez Mirasol**, Ph.D, Universidad de Málaga, Málaga, España.

**Norma Tiempos Flores**, M. Sc, Faculty of Chemical Science, Universidad Autónoma de Nuevo León, México.  
**Sylvain Giraudet**, Ph.D, École Nationale Supérieure de Chimie de Rennes, Rennes, France.

**Margarita Loredó Cancino**, Ph.D, Faculty of Chemical Science, Universidad Autónoma de Nuevo León, México.

**Eduardo Soto Regalado**, Ph.D, Faculty of Chemical Science, Universidad Autónoma de Nuevo León, México.

## 11. Factors Affecting Adoption of Sustainable Soil Management Practices Among Fluted Pumpkin Vegetable Producers in Ikorodu, Lagos State

Omowumi Ayodele Olowa

### ABSTRACT:

Proper soil management is germane to sustainable vegetable production. The greatest threat to sustainable agricultural productivity is the declining soil productivity. The reason for this declining soil productivity might not be unconnected with the soil management practices by farmers. This study attempt to isolate factors that are contributing to vegetable farmers' adoption of soil management practices. Primary data were collected from randomly selected 120 fluted pumpkin vegetable farmers, adopting pre-tested semi-structured interview schedule in Ikorodu Local Government Area. This predicated on the facts that Ikorodu environment seems to be well adapted for fluted pumpkin production as many hectares of land are cultivated to fluted pumpkin by hundreds of small holders. probit regression model was used to isolate factors affecting the adoption of sustainable soil management technology. Overall, the model predicted 85.76% of the sample correctly. The findings of the study revealed that number of economically active family members, household head education, livestock holding, membership in farmer's group and credit availability affects positively whereas, age of household head affects negatively in the adoption of sustainable soil management technology. A unit increased in economically active family members, years of education and livestock standard unit would increase the probability of adoption of technology by 21.3, 5.8 and 7.6% respectively. Likewise, if farmers were made member in the groups and credit made available, the probability of adoption of technology would increase by 46.2 and 46.3% respectively. But a unit increased in the age of household head would decrease the level of adoption by 1.4% indicating old aged farmers do not adopt innovative technologies in agriculture.

*Keywords: Lagos, adoption, probit, sustainable soil management, vegetable, fluted pumpkin*

**Dr. (Mrs) O. A. Olowa**, a Nigerian of Ogun State origin, holds a PhD in Agricultural Economics from the University of Ibadan, Nigeria having also bagged a Master and BSc in the same field from the same university. She has many journal publications and conferences paper to her credit. She is a senior Lecturer in the Department of Agricultural Education.

## 12. Analysis of the Effects of Direct Payment Subsidies for Environmentally-Friendly Agriculture on Income of Rice Farmers in Shiga, Japan

Danielle Katrina Mallari Santos, Koji Shimada

### ABSTRACT:

This study will determine the economic effects of direct payment subsidies for Environmentally-Friendly Agriculture on income of rice farmers in Shiga Prefecture, Japan. It will specifically aim to: (1) analyze the effect of reduced chemical and fertilizer use on income and (2) come up with policy recommendation related to the implementation of direct payment subsidy. Environmentally-friendly agriculture has been promoted for over two decades as a response to the environmental challenges brought by climate change and biological loss. The Japanese government has endeavored to seek appropriate policies which reflect various environmentally-friendly farming practices such as organic farming and reduction of chemicals and fertilizers. The agro-environmental policy in Shiga is one of the earliest and most advanced in Japan. It aims to promote environmentally-friendly agriculture among farmers and to engage various stakeholders to protect the environment using the “Kodawari” slogan for Lake Biwa conservation and eco-farming. Rice as a staple food in Japan, this study will seek to address the notion that output and income of rice farmers receiving direct payment subsidies for agricultural inputs has not increased as evidenced by the study conducted by Kim (2014). In addition, chemical input is higher in Japan than most developed countries, this study will also aim to disprove the findings from the study conducted by Masuda (2016) that the current level of direct payment subsidy has only resulted to economic disadvantages in output for smaller environmental advantages. This study will contribute to the literature by analyzing an unexplored mandate of the direct payment scheme, particularly on the reduced use of chemicals and fertilizers, by explicitly determining the economic effects of the said program on income to determine how the gains from environmentally-friendly agriculture influence farmer’s decision to produce.

*Keywords: rice, direct payment subsidy, environmentally-friendly agriculture, income*

**Danielle Katrina Mallari Santos** was born on June 02, 1994 and is the eldest child born to Danilo Marcelino Santos and Imelda Mallari Santos. Commonly called as Kat by her friends and classmates, she finished her tertiary education at the University of the Philippines, where she also graduated cum laude. Currently, she is a first year master’s student at Ritsumeikan University, taking up Master’s in Economic Development. Her research interests include agricultural policies on farm mechanization, rural development, and sustainable development in the agricultural sector.

**Koji Shimada**, Ph.D., is a professor at Ritsumeikan University. He finished his undergraduate and graduate studies at Kyoto University. Prior to joining Ritsumeikan University in 2003, he had worked for the Ministry of the Environment. He has also held committee positions on various projects regarding the energy and environmental sector. Having such expertise in environmental economics and environmental engineering, he won an award from the Environmental Systems Committee of the Japan Society of Civil Engineering in 2007.

### 13. Drivers of Land Embodied in International Trade of Rice: The Italian Case Study

Dario Caro, Fabio Sporchia

**ABSTRACT:**

In the last years, a significant increase of imports of Rice from Cambodia and Myanmar into the European Union has been recorded. In particular, Italian farmers were badly affected by the imports of rice from these two Asiatic countries. Indeed, the European Commission in 2019 has therefore decided to re-introduce specific import duties. In turn, such exported rice corresponds to large quantities of land that are driven by consumption of Asiatic rice in Italy. In this study, we estimate the Virtual Land Trade associated with rice trade between Cambodia and Myanmar to Italy. Our analysis combines physical import data and associated land information. The analysis shows the pro-and-con of these debated trade connections also revealing the effect of replacing the Asiatic import demand with domestic production of rice in Italy in terms of land use. The study is relevant in understanding whether patterns of rice consumption, production and trade represent an efficient, and logical, allocation of natural resources.

*Keywords: Virtual land trade; food; consumer awareness; land footprint; agricultural impact; rice; international trade*

**Dr. Dario Caro** is a tenure-track researcher in the Department of Environmental Science at the Aarhus University. He is the co-leader of the Strategic Growth Area "Resource flows in a circular economy" and member of the Advances in Cleaner Production Network. His research focuses on coupling human and natural systems and sustainable systems analysis including energy policy; waste management; pollution and natural resources embodied in international trade and the complex interactions of agriculture/livestock, climate change and global ecology.

**Fabio Sporchia** was born in 1993. He got his bachelor's degree in biological sciences at University of Milan in 2015. Currently, he is working on his master's degree thesis in ecotoxicology and environmental sustainability at Aarhus University thanks to the Erasmus for traineeship scholarship he was granted by Siena University, where he is currently enrolled. His main interests include food sustainability, GHGs emissions, SDGs and environmental sustainability in general.

## 14. Daily Habits and Energy Consumption: Go to Bed Earlier for Environmental Protection

Shigeru Matsumoto

### **ABSTRACT:**

The reduction of energy consumption in the residential sector is crucial for the mitigation of global warming and thus many researchers have investigated the determinants of household energy consumption from various aspects. However, the impact of time allocation on the energy consumption has not yet examined in previous studies. The main reason for the research delay is the lack of the survey that simultaneously examined time allocation and energy consumption. We conducted an original survey of 547 Japanese households in order to examine whether time allocation affects the household electricity consumption. We divided the time of 2 successive days into 192 time slots and asked the households to choose the behavior of each slot from 20 types of actions prepared. At the same time, we collected socioeconomic and electricity consumption information. After controlling various factors that affect household electricity consumption, we examined whether time allocation determines electricity consumption. Our empirical result reveals that although the husband's bedtime does not affect the electricity consumption, the wife's bedtime affects it. This result suggests that understanding daily habits of people is necessary for proposing effective energy conservation measures.

*Keywords: Household Electricity Use, Micro Data, Time Use*

**Dr. Shigeru Matsumoto** is Professor, Aoyama Gakuin University, Japan. He studied on Heiwa Nakajima Foundation Scholarship at North Carolina State University, USA, where he earned his Ph.D. in economics. He also holds his Masters of Environmental Science from Tsukuba University, Japan. His research interest lies in the applied welfare economics, with particular focus on consumer behavior analysis. Major works include "Environmental Subsidies as a Policy Instrument: How did they work in the Japanese market?" (Routledge, Taylor & Francis Group) and "Consumer Perception of Food Attributes" (CRC press) (Editorial book). He published more than 30 articles in English peer-reviewed journals. He is the board member of Society for Environmental Economics and Policy Studies of Japan and a co-editor of International Journal of Economic Policy Studies.

## 15. Energy Savings Due to the Replacement of Fluorescent Lamps with LEDs in Classrooms

Thaiane Cristina Stahnke Manorov, Lucas Niehuns Antunes, Enedir Ghisi

### ABSTRACT:

This work aims to evaluate the potential for energy savings that the replacement of fluorescent lamps with LEDs can provide. The study was carried out in the classrooms of the Federal University of Santa Catarina. It was found that 65% of the classrooms had adequate illuminance levels for classes during the daytime period, but none of the classrooms had adequate illuminance for the night period. Due to the need to improve lighting levels and decrease energy consumption, a new lighting system was assessed. Computer simulations were performed using Dialux. Energy savings up to 45% would be obtained with the new lighting system. The payback was estimated as 8.6 years, less than the lifespan of the system which is approximately ten years. This makes the LED system feasible both technically and economically.

*Keywords: Energy efficiency, lighting, LED, Dialux*

**Thaiane Cristina Stahnke Manorov** is a civil engineering student at the Federal University of Santa Catarina. **Lucas Niehuns Antunes** is a civil engineer who obtained his degree from the Federal University of Santa Catarina in 2018. He is currently a Master's student at the Federal University of Santa Catarina.

**Dr. Enedir Ghisi** obtained his PhD in Civil Engineering from the University of Leeds, in the UK, in 2002. He is currently a professor in the Department of Civil Engineering at the Federal University of Santa Catarina, located in Florianópolis, southern Brazil. So far, he has published 10 book chapters, 107 conference articles and 88 journal articles. He has concluded the supervision of 7 PhD and 26 master's students. Currently, he supervises 6 PhD and 6 master's students. His research topics are thermal performance of buildings, energy efficiency, lighting, sustainability, life cycle assessment, water consumption, greywater reuse and rainwater harvesting in buildings.

## 16. Impact of the Renewable Energy Development in Lithuania'S Energy Economy

Rita Bužinskienė

### ABSTRACT:

Renewable energy plays substantial role in energy economy and it is the major source for the economic development of any country. This paper investigates the energy development from renewable energy sources theoretic framework and uses annual data of 2006 – 2016 to measure energy development in Lithuanian's energy sector. The research methods used in the paper include the collection of primary and secondary information sources and quantitative data, which are then used for comparative analysis. Assessing the development of renewable energy in the energy sector are used various economic indicators. The impact of renewable energy sources in the energy sector are determine by using linear regression model. The purpose – evaluation of the impact of development renewable energy sources in the energy sector. This paper is characterized by scientific novelty as it involves a very scarce research problem in Lithuanian's energy sector, assessing the development of the impact from renewable energy sources. Renewable energy sources have a multiplier effect in spurring the economy and the development of not only the energy sector but also all the supporting activities related to such industry. Impact of the development of renewable energy is one of the factors that develop the quality of technology innovation development.

*Keywords: Renewable energy sources, development, innovation, effect of renewable energy, energy sector*

**Dr. Rita Bužinskienė** is associate professor of Siauliai State College, Lithuania. As a researcher, she published more than 15 scientific articles in various scientific publications and databases of scientific information. She has read presentations at International Conferences in Latvia, Turkey, Belarus and others countries. At 2013 years she trained at Anadolu universities, in Turkey. Since 2000 she has experience in finance and accounting. Research direction: investigates of the use of renewable energy sources; development of the energy independence strategy; impact of knowledge generating investment on GDP growth; determination of the value of intangible assets in the companies; evaluation of structure of financial and non-financial information of intangible assets and etc.

## 17. Electricity Access Thresholds for Meeting Non-Energy SDG Targets

Robert Brecha

### ABSTRACT:

Access to sufficient amounts of energy is a prerequisite for development of human well-being. Analysis presented in this paper shows that multiple sustainable development targets are linked to per capita access to electricity in particular and demonstrate a threshold behavior below which sustainable development targets have not been met historically. The present work relates to the broad literature on the Sustainable Development Goals (SDGs), recognizing the interconnectedness of energy access (SDG7) and other development goals. Although targets are provided for each of the 17 goals, not all targets are quantified, leaving room for ambiguity in fulfilling, for example, the goal of “ensuring access to affordable, reliable, sustainable and modern energy for all.” The focus of this work is an extension of our finding that a per capita societal electricity consumption thresholds of about 400kWh is strongly related to meeting outcomes for health indicators related specifically to SDG targets. In this contribution we further examine this quantitative relationship between electricity access as correlated with education, sanitation, food security and health outcomes, posing the question in the form, “Below what minimum societal per capita access to electricity is a country very unlikely to meet SDG targets?”

*Keywords: Electricity access; energy; SDG; health; education; sanitation; food security*

**Dr. Robert Brecha** is visiting scientist at the Berlin think tank Climate Analytics, supported by a EU Marie Skłodowska Curie Fellowship. Since 1993 he has been at the University of Dayton (Ohio, USA) where he is Professor of Physics and of Renewable and Clean Energy Program, and was founding coordinator of the Sustainability, Energy and the Environment (SEE) initiative from 2007 - 2015. From 2006-2017 he was a regular visiting scientist at the Potsdam Institute for Climate Impact Research (PIK) in Germany, including one year as a Fulbright Fellow (2010-2011). From January - December 2018 he was a visiting scientist at Climate Analytics as and from June -December 2018 served as Acting Head of Energy System Modeling. His research publications focus on energy efficiency in buildings, climate change mitigation strategies, and energy needs for sustainable development.



## 18. Integrating Energy Markets in the Wider Europe - The Eastern Dimension

Afroditi Semkou, Elias Andreadis, Elias Kolovos

### ABSTRACT:

This paper is to examine the extent of integration between the regional energy markets of the Member States of the European Union and the countries of the wider Europe with special attention to the Eastern Partnership. Therefore, whether the aforementioned energy markets are in a position to conform to the *acquis communautaire* and ensure the security of energy supply to the EU in affordable prices. We will record what needs to be done for the integration of these regional energy markets with the EU common market and specifically: (a) the legal framework of the Eastern European non-EU regional energy markets, from the perspective of energy, trade and free competition. The impediments integration is facing and under which circumstances can it be achieved. (B) The required infrastructure and connectivity networks necessary to be completed in order to allow the utilization of the energy reserves in the third countries and the network connection of these third countries with the EU. The designated Trans European Network Strategy regarding the sectors of electricity, natural gas, oil and the Projects of Common Interest currently being constructed in Eastern Europe. (C) The promotion of investments that needs to be carried out in the wider European countries in order to ensure security of energy supply of the EU in the long term. The various forms of cooperation agreements between Georgia, Moldova, Ukraine, Armenia, Belarus and Azerbaijan with the EU and their contribution to the promotion of energy investments and the interconnection of cooperation agreements with the Energy Community.

*Keywords: EU, Eastern Europe, Free Trade Agreements, Infrastructure, TEN – E, PCI, Promotion of Investments*

**Afroditi Semkou** is an Attorney-at-Law and a PhD Candidate, who studied law in the Aristotle University of Thessaloniki, then acquired an LL.M from the International Hellenic University, School of Business Administration and Legal Studies, in the field of Transnational and European Commercial Law, Mediation, Arbitration and Energy Law and is now a PHD Candidate of the Aristotle University Thessaloniki, School of Law, Measures distorting competition in the energy sector". Afroditi Semkou has worked as an academic assistant of the Aristotle University of Thessaloniki, specifically assisting the MSc Law & Engineering for Energy. She has published a Comment on C-429/2014 European Court of Justice Case, titled as Damages due to passenger delay in the context of carriage by airplane, Monthly Legal Magazine on Applications of Civil & Civil Procedural Law, Publication 10/2016, p. 888-896, Publication: Nomiki Bibliothiki and she has participated in (1) 2nd Energy Union Future Leaders Academy, hosted by the Greek Energy Forum and in (2) Energy Conference "Renewable Energy Sources & Markets of South-East Europe", hosted by the International Hellenic University with the participation of the National Regulatory Authority for Energy, Presentation Title: Recent Developments in Empowering Consumers within the markets of South-East Europe: from end-user to prosumer.

**Elias Andreadis** is an Attorney-at-Law and a PhD Candidate, who studied law in the Aristotle University of Thessaloniki, School of Law then acquired an LL.M from the Aristotle University of Thessaloniki,

School of Law, Field of International Law and is now a PHD Candidate of the Aristotle University Thessaloniki, School of Law, on the topic «Contracting for international energy infrastructure projects». Elias is working for the UNCHR in Thessaloniki, Greece and has been the coach of The third globally awarded team of the Aristotle University of Thessaloniki in the 9th Frankfurt Investment Arbitration Moot Court - March 2015.

**Elias Kolovos** is an Attorney-at-Law and a PhD Candidate, who studied law in the Aristotle University of Thessaloniki, School of Law then acquired an LL.M from the Democritus University of Thrace, School of Law, Field of International Law and is now a PHD Candidate of the Aristotle University Thessaloniki, School of Law, on the topic Protection and expropriation measures regarding foreign investment in Free Trade Agreements.

## 19. Waste to Energy Financial Model Design Based on Resident Participation

Farizal, Nadya Amalin, Amar Rachman

### ABSTRACT:

This study designed a financial model for utilizing municipal solid waste (MSW) to generate energy based on resident participation. This effort is crucial since in many cases a government has some competing programs to be funded on its limited money. This makes a public project does not receipt enough funding to run the best option available or even the project sometime has not funded at all. On the other side, regulation and social responsibility factors inhibit private sector to invest their money on it. Based on willingness to pay research conducted at the City of Depok, it was shown that the residents are willing to spend their money to get a better MSW treatment through funding a Sustainable Modular Landfill Gas Plant project. A financial model developed for the project showed that the project is feasible. The project gave a positive net present value and internal rate of return greater than the average Indonesian bank interest rate; that is 13.87% for no electricity discounts scenario and 13.73% for electricity discount scenario. Further analysis showed that the minimum number of resident to participate on the project are 7% and 51% of the total Depok household, respectively.

*Keywords: Financial model, waste to energy, landfill gas plant project, net present value, internal rate of return*

**Farizal**, PhD is Lector (comparable to Assistant Professor) at Department of Industrial Engineering, Universitas Indonesia, Indonesia. His research is on renewable energy planning and optimization. He has developed a model to select suitable energy sources among available renewable energy sources using quantitative and qualitative methods, conducted energy demand forecast and oil consumption forecast. Currently, his focus is on municipal solid waste (MSW) to energy. He has conducted a complete research on MSW utilization started from MSW potency research, MSW plant location determination, MSW collection routing determination, MSW plant financial model, and MSW plant business model. Currently, he also serves as editorial board of Makara Journal of Technology (MJT).

**Nadya Amalin** was a former master student of Department of Industrial Engineering, Universitas Indonesia who conducted resident based financial model under Farizal, PhD supervision. She completed her bachelor degree from department of Chemical Engineering, University of Diponegoro, Indonesia. She is currently works as consultant at Veda Praxis.

**Ir. Amar Rachman**, MEIM is former Lektor Kepala (comparable to Associate Professor) of Department of Industrial Engineering, Universitas Indonesia. He completed his Master from KU Leuven, Belgium. His research focuses on optimization and modeling. He served as Co-Supervisor of Ms. Amalin master thesis research.

## 20. Intricate Analysis of Potential Materials for Sustainable Product Development

Sachin Kumar, Anchit Goel, Gaurav Kumar Singh

### ABSTRACT:

Raw materials are scarce and are exponentially depleting. Material usage and product disposal both lead to improvidence of raw ingredients for products. We use materials for manufacturing new products while simultaneously throwing away used non-biodegradable products which pollute the environment. The world of designing and manufacturing needs to use new material(s) which can be selected using the methodology proposed in the research text. To select the best material for a product, its environmental impact, cost and properties that decide the quality of a product are plotted in a 3 dimensional space. Now the threshold limit of quality defining properties is obtained through experimentation. Cutoff cost is decided through market research and then environmental impact is minimized. The material beyond the cutoff planes is rejected and the best among the remaining materials is selected. The product developed using this method for material selection will contain the negative environmental impact during manufacture, use and expenditure of used products and thus helping sustainable development.

*Keywords: Sustainability, Life Cycle Analysis, Material selection, Cost optimization, Environmental Repercussion, Mechanical properties*

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**Mr. Anchit Goel** is an undergraduate student of Department of Civil Engineering, National Institute of Technology Karnataka, India. Executive Member of Indian Society for Technical Education, NITK. Student Member of American Society of Civil Engineers NITK Chapter. Research student in seismic retrofitting methods, sustainable and environment friendly construction techniques.

**Mr. Gaurav Kumar Singh** is an undergraduate student of Department of Mechanical Engineering, National Institute of Technology Karnataka, India. Active pursuer in the field of eco friendly product development, its cost efficiency and mechanical properties of materials.

## 21. Environmental Sustainability at the Olympic Games: Comparing Rio 2016 and Tokyo 2020

Kathryn Rowberg, Meg Rincker

### ABSTRACT:

The modern Olympic Games have evolved from events fostering international peace and goodwill to showcases of athleticism and commercialism. More recently sustainability became a pillar of the Game site selection process. This paper focuses on two Olympic Games: Rio 2016 (completed) and Tokyo 2020 (upcoming). The goals of Sustainability Plans and pre-game reports for the two Olympic sites are analyzed using weighted summation method of Multi-attribute Value theory and the framework of environmental, economic and social-cultural sustainability, with emphasis on environmental sustainability. Post-game analysis and legacy stories are reviewed for Rio 2016. Application of legacy stories to future Olympics sites is examined. Last, Rio 2016 and Tokyo 2020, in terms of actual and anticipated success in sustainability initiatives, are compared for the impact these two Games may have on future Olympic Game sites.

*Keywords: Sustainable development, environmental sustainability, Olympics, Rio 2016, Tokyo 2020*

**Kathryn Rowberg** is an Associate Professor of chemistry at Purdue University Northwest. She earned a BA and PhD in chemistry and a Juris Doctorate. She is a member of the Indiana Bar Association and was awarded the Kohlhoff Award for Excellence in Environmental Law. At Purdue University Northwest, her research groups have worked on diverse projects: monitoring residual herbicide in caves, identifying persistent organic pollutants in sediments, quantifying microplastics in regional waterways, modelling estrogenic activity in compounds, and predicting aquatic phototoxicity in emerging pollutants using computational methods. Professor Rowberg spent two years as a Fulbright Fellow in Addis Ababa, Ethiopia, teaching and directing research for a master's student and one semester as a Fulbright Fellow in Iceland teaching and working on their environmental chemistry curriculum.

**Professor Meg Rincker**, Purdue University Northwest, Hammond Indiana USA Meg Rincker earned her PhD in political science from Washington University in Missouri. She currently is Professor of Political Science at Purdue University Northwest. Rincker taught International Organizations/Model United Nations for eight years and her students are participants at the regional Model United Nations conference. Her research publications include health politics, public policy, gender and multi-level governance.

## 22. Climate Justice: Analyzing the Contours, Understanding the Philosophy and Voicing the South Asian Perspective

Ajeeth Srinivas K., Aba

### ABSTRACT:

For an extensive time, the concept of climate change has been considered to be one that is purely physical, and concerning only the environment. Therefore, the introduction of the conceptual pillars of the term climate justice stand justified. Climate justice intends to call upon the issues created by climate change to be included within the nuances of an ethical and socio-political issue. This paper begins by exploring the contours of climate justice and addresses the definition, need and methodological interpretation that this term implies on an international perspective. The paper then looks at the jurisprudential, ethical and philosophical connotations of climate justice by delving into the very idea of justice and the implications that it holds, and further adjudicates the debate between mitigation and adaptation. Further by critiquing the existing treatises on the same, this paper establishes the importance of the 13th Sustainable Development Goal. The paper then funnels in on a comparative and independent analysis of the South Asian demographic by studying the status quo of India, Pakistan, Sri Lanka and Bangladesh. In conclusion, the paper attempts to investigate plausible mechanisms such as the utilization of regional and sub-regional bodies, creation of triangular partnerships, and ascertain the success rate of burden-sharing mechanisms and a monitoring authority.

*Keywords: Climate Justice, International Treatises, South Asia, Sustainable Development, Plausible Mechanism, Environmental Sustainability.*

**Mr. Ajeeth Srinivas K.** is a 4th semester BBA LLB (Hons.) student at School of Law, CHRIST (Deemed To Be University), Bengaluru. International Law, Environmental law, Refugee Law, International Trade, Jurisprudence are a few of his areas of interest. He has researched extensively in the areas of international and environmental laws and also has publications to his credit in these areas. He has proved his mettle by way of Debates, Moots and Model United Nations Conferences. As a key member of the School of Law Model United Nations Committee, he has taken on the task of furthering the reception to international law and discourse and discussion associated with its nuances. He has also been a member of various social service organizations that aim towards achieving the target of education for children from all sections of the society. An advocate for multiple environmental movements and rights, Ajeeth Srinivas. K looks to resolving the issue of lacunae in environmental legislation and the need for sustainability tied in with the equitable distribution of resources on an international scale.

**Ms. Aba** is a 4th Semester BBA LLB (Hons.) student at School of Law, CHRIST (Deemed to be University), Bengaluru. Human Rights, Sustainability and Constitutional Jurisprudence are some of her major strengths. As an avid reader, Aba is an intellectual who takes great interest in the power of intersection of the law, and various other fields. With the pen being her prowess, she lets herself delve into various writing tasks, and has allowed her work to be published by some prestigious platforms. She has taken it upon herself to further the cause of literary and journalism works by serving on the core-committee at the Literary and Debating Society at School of Law, CHRIST. Further, as a part of various NGO programs, she has helped create a path to making the lives of children in her home state better in whatsoever way possible. An advocate for multiple causes, such as improving legislations on mental health disabilities and animal rights, she is an aspirant whose goals are set at standardizing the political, legal and social scenario in her homeland.

## 23. International Mechanism of the Environmental Information Access and Cooperation Framework for Climate Change Protection

Viktor Ladychenko, Olha Melnychuk, Olena Yara, Julia Kanaryk

### ABSTRACT:

Climate change and global warming are challenging for humanity. International cooperation and the formation of joint approaches to solving global challenges are of paramount importance for sustainable development. Like many countries in the region, Ukraine threatens to increase the number of natural disasters, floods in the Carpathians, transformation southern region steppe into the desert, flooding coastal parts and a shortage of drinking water in the central and eastern regions. Thus, this study explores the international mechanism of the environmental information access as a complex multi-level system, which determines various types of international cooperation. Environmental information access is of great practical importance both for humanity as a whole and for further reformation of the legislation of individual countries in order to ensure sustainable development, as well as to improve the practical activities of civil society. The findings show the need for people's lifestyle changes, their environmental education and work. We therefore propose the international mechanism of the environmental information access as cooperation framework which enables companies and business communities more effectively and creatively solve economic and social problems.

*Keywords: Environmental information, information human rights, sustainable development, EU environmental policy*

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**Olha Melnychuk**, Doctor of Law, Associate Professor Olha Melnychuk is Dean of the Faculty of Management and Law of Vinnitsa National Agrarian University (Ukraine). In 2018 passed probation in European universities in Slovakia, Austria and Hungary on the theme "Modern teaching methods and innovative technologies in higher education: European experience and leading trends."

**PhD. Olena Yara** is Dean the Faculty of Law of the National University of Life and Environmental Sciences of Ukraine, professor of the Department of Administrative and Financial Law of the National University of Life and Environmental Sciences of Ukraine.

**PhD. Julia Kanaryk** is associate professor of the Department of Civil and Commercial Law of the National University of Life and Environmental Sciences of Ukraine. Research studies are devoted to the actual problems of legal regulation of production and sale of agricultural products.

## 24. Criticality and LCA – Building Comparison Values to Show the Impact of Criticality on LCA

Björn Koch, Fernando Peñaherrera, Alexandra Pehlken

### ABSTRACT:

Including criticality into Life Cycle Assessment (LCA) has been challenging to achieve but desirable to accomplish. In this article, we present a new approach for the evaluation of resource consumption of products by building comparison values based on Life Cycle Impact Assessment (LCIA) combined with weighted criticality values to show the direct impacts of criticality on LCA results. For this purpose, we develop an impact indicator based on the Abiotic Depletion Potential (ADP) of natural resources and the two main parameters defined by the EU to determine the criticality of a material - the economic importance and the supply risk - to build the Criticality Weighted Abiotic Depletion Potentials (CWADPs), one for each parameter. These indicators allow identifying and measuring the impacts of criticality when comparing the results of resource depletion using the ADP methodology and the results that incorporate criticality. Comparing the CWADPs to the corresponding EU criticality values and its thresholds show the equivalent criticality of the assessed product. This information reflects the impacts of criticality on LCA and assesses the total resource consumption of critical materials in a system.

*Keywords: Criticality, LCA, Resources, Materials*

**Björn Koch** has studied communications engineering and philosophy at RWTH Aachen University, Germany. He has been working as a research scientist on various projects in the field of sustainability at COAST, the Centre for Environment and Sustainability, and the Cascade Use group at Oldenburg University since 2011. His research focuses on ethical aspects in sustainability as well as on indicators and ethics in criticality of materials. In 2018 he was awarded with a research grant by the International Round Table on Critical Materials (IRTC) for his paper on indicator choices for criticality assessment.

**Fernando Peñaherrera** is born in Quito, Ecuador. His post-graduate studies were performed at the University of Oldenburg, Germany, in the Postgraduate Programme Renewable Energies. He has worked for both public and private sectors in the fields of renewable energy and energy efficiency. Starting with research and academic activities, he later went to work in the private sector developing engineering projects in the areas of renewable energy and energy efficiency. For his master thesis, he analyzed the demands of services of Energy Efficiency for the industrial sector of the State of São Paulo, in a cooperation project between the GIZ and SENAI-SP. He participated in consultancy for developing a strategic roadmap for the integration of renewable energies in India, as part of the "Indo - German Energy Program - Green Energy Corridors". Fernando is working as Research Scientist for CvO University since October 2016.



**Dr.-Ing. Alexandra Pehlken** (OFFIS) studied Mining and Mineral processing at RWTH Aachen University in Aachen, Germany. She performed her doctorate degree at the Mining Faculty in 2002. Her expertise lies in the secondary resource management and the cascade using of materials with its impact on the life cycle performance. While being an expert in recycling, she is also involved in renewable energies. Succeeding her doctorate degree she was granted a scholarship from Germany to work for two years (2004-2005) at Materials Technology Laboratory (MTL) NRCan in Ottawa, Canada. From March 2014 until September 2019 she was head of the research group Cascade Use at Carl von Ossietzky University, Germany. Since June 2019 she is a member of the Energy division at OFFIS. Her current research focus lies on assessment of sustainable resource management. Since 2018 Alexandra is external evaluator for the EU Horizon 2020 research program. With her research on sustainable car parts decision making she won the Raw Material Efficiency Award 2018 from the German Government BMWi.

## 25. Toward LCA-Lite: a Simplified Tool to Easily Apply LCA Logic at the Early Design Stage of Building in Australia

Toktam B. Tabrizi, Arianna Brambilla

### **ABSTRACT:**

Life Cycle Assessment (LCA), developed over 30 years ago, has been helpful in addressing a growing concern about the direct and indirect environmental impact of buildings over their lifetime. However, lack of reliable, available, comparable and consistent information on the life cycle environmental performance of buildings makes it very difficult for architects and engineers to apply this method in the early stages of building design when the most important decisions in relation to a building's environmental impact are made. The LCA quantification method with need of employing complex tools and an enormous amount of data is unfeasible for small or individual building projects. This study is the first step toward the development of a tool that allows designers to employ LCA in the early design phase, through a simplification of the conventional LCA process. It aims to allow building designers to more easily apply the logic of LCA by minimising data requirements and identifying the most effective parameters that promise to make the most difference. A knowledge-based system is employed that contains specific knowledge in the form of rules (based on the results of previous LCA studies in Australia) that enable the system to generate outputs based on the user's inputs.

*Keywords:*

**Toktam B. Tabrizi** is a PhD Candidate at the Faculty of Architecture, Design and Planning at the University of Sydney. My research focuses on minimising the environmental impacts associated with the life cycle of buildings. I am currently investigating strategies to simplify the LCA methodology and to enable designers to identify effective variables that contribute to the environmental performance of a building when selecting materials at the early design stage. I was a lecturer at IAUM until 2013 and have worked as a registered Architect (2nd Rank, Design & Supervision) in Iran and also was the co-founder of the ASRA architecture company. I tutor at the University of Sydney in the Architectural Science program.

**Dr Arianna Brambilla** is a building engineer and an architect. She holds a PhD in Building Physics and Systems from Politecnico di Milano (IT), done in conjunction with the Aalborg University (DK). Her project was focused on building strategies to enhance resilience to climate change and users interaction with the building automation system applied to very efficient model homes. Before joining the University of Sydney she was doing a post-doc at the École Polytechnique fédérale del Lausanne (EPFL, CH), where she was engaged in a project aimed at developing a low-carbon outstanding building. Her research interests relate to the perceived and subjective thermal comfort in relation to the objective environmental comfort, hygrothermal performance of building components and materials, low-carbon design strategies and thermal energy storage.

## 26. “Build Back Better” Approach to Disaster Recovery: Research Trends since 2006

Glenn Fernandez, Iftekhar Ahmed

### ABSTRACT:

The “build back better” (BBB) approach to disaster recovery was first introduced in 2006 by the United Nations Secretary-General’s Special Envoy for Tsunami Recovery, former US President William Clinton. In 2015, BBB became the second half of Priority 4 of the Sendai Framework for Disaster Risk Reduction 2015-2030, in recognition of its widespread use and adoption among disaster risk management practitioners, policy-makers, and researchers. This paper aims to summarize the significant advances related to BBB research in the past 13 years, and is expected to provide an overview of where the BBB concept and the related policy and practice are heading in the coming years. Themes identified from existing research include: the development of a BBB framework and of indicators; the spread of BBB research worldwide; practical examples of how to apply BBB principles; policies, legislation, and governance for supporting BBB; role of different stakeholders and actors; and capacity building for BBB. In theory, BBB is a desirable goal, but numerous experiences have proved that it is quite challenging to implement in practice. Additional research on BBB is needed to contribute to its successful implementation.

*Keywords: Sendai Framework; Priority 4; reconstruction; theory vs. practice*

**Dr. Glenn Fernandez** is an Associate Professor at the Institute for Disaster Management and Reconstruction (IDMR), Sichuan University - Hong Kong Polytechnic University. He is an Integrated Research on Disaster Risk Program (IRDR) Young Scientist, a Japan Foundation Asia Center Fellow, and a grantee of the Takagi Fund for Citizen Science. He previously worked as a researcher at the Asian Disaster Preparedness Center (ADPC) in Bangkok, Thailand and at the Graduate School of Global Environmental Studies (GSGES), Kyoto University in Japan. He was a Visiting Professor at the Department of Sociology of Mindanao State University - Iligan Institute of Technology. He is a Licensed Environmental Planner and a Certified Internal Auditor in the Philippines. Dr. Fernandez is a Section Editor of the Progress in Disaster Science Journal.

**Dr. Iftekhar Ahmed** is a Senior Lecturer in the School of Architecture and Built Environment and the Program Convenor of the Master of Disaster Resilience and Sustainable Development, University of Newcastle, Australia. He teaches courses on social and policy aspects of disaster risk reduction, research in the built environment and construction ecology. His research focuses on resilient and sustainable post-disaster housing systems, disaster risk reduction, climate change adaptation and urbanization in the Asia-Pacific region. In the past he has worked as a project manager at the Asian Disaster Preparedness Center (ADPC), Thailand and as a shelter specialist at the United Nations Development Program (UNDP), Bangladesh. He has also served widely as a consultant for several international agencies, particularly in the disaster risk reduction field. He has written several books and professional reports and has many peer-reviewed publications to his credit. Dr. Ahmed is a Section Editor of the Progress in Disaster Science Journal.

## 27. A Political Economy Analysis of Public Spending Distribution for Disaster Risk Reduction in Bangladesh

Shafiqul Islam

### ABSTRACT:

Bangladesh is one of the countries most vulnerable to climate related disasters such as flood and cyclone. Based on the semi-structured in-depth interviews of 38 stakeholders and literature review, this study examined the public spending distribution process in DRR. This paper demonstrates how the processes of political economy- enclosure, exclusion, encroachment, and entrenchment occurs in the Disaster Risk Reduction(DRR) efforts of Department of Disaster Management (DDM) such as distribution of flood centres, cyclone centres and 40 days employment generation programs. Enclosure refers to when DRR projects allocated to less vulnerable areas or expand the roles of influencing actors into the public sphere. Exclusion refers to when DRR projects limit affected-people's access to resources or marginalize particular stakeholders in decision-making activities. Encroachment refers to when allocation of DRR projects and selection of location and issues degrade the environmental affect or contribute to other forms of disaster risk. Entrenchment refers to when DRR projects aggravate the disempowerment of common people worsen the concentrations of wealth and income inequality within a community. This research explored that exclusionary forms of fund distribution of DRR exist at both the national and local scales. DRR related allocations have encroached through the low land areas development project without consulting local needs. Most severely, DRR related unequal allocations have entrenched social class trapping the backward communities vulnerable to climate related disasters. Influencing practitioners of DRR need to take necessary actions to eliminate the potential risks from the processes of enclosure, exclusion, encroachment, and entrenchment happens in project fund allocations.

*Keywords: Bangladesh, Disaster Risk Reduction, Public Fund Distribution, Political Economy*

**Shafiqul Islam**, PhD candidate, School of Environment and Science, Griffith University, Australia. He is a professional bureaucrat of Bangladesh and has been working for 13 years in district and sub-district under various ministries. His working experiences are relevant to diverse issues including disaster and climate change related project implementations expertise on both qualitative and quantitative research.

## 28. Disaster Adaptation Mechanism and Disaster Prevention Adaptation Planning Strategies for Industrial Parks

Jen-te Pai, Shin-En Pai

### ABSTRACT:

The impact of climate change has intensified in recent years, causing Taiwan to face higher frequency and serious natural disasters. Therefore, it is imperative for industrial parks manufacturers to promote adaptation policies in response to climate change. On the other hand, with the rise of the international anti-terrorism situation, once a terrorist attack occurs, it will attract domestic and international media attention, especially the strategic and economic status of the Science Park. Thus, it is necessary to formulate adaptation and mitigation strategies under climate change and social economic disasters. After reviewed the literatures about climate change, urban disaster prevention, vulnerability assessment, and risk communication, the study selected 62 industrial parks compiled by the Industrial Bureau of the Ministry of Economic Affairs of Taiwan as the research object. This study explored the vulnerability and disaster prevention and disaster relief functional assessment of these industrial parks facing of natural and socio-economic disasters. Furthermore, this study explored planned adaptation of industrial parks management section and autonomous adaptation of corporate institutions in the park. The conclusion of this study is that Taiwan industrial parks with a higher vulnerability to natural and socio-economic disasters should employ positive adaptive behaviours.

*Keywords: Adaptive Behaviours, Analytic network process, Vulnerability, Industrial Parks*

**Dr. Jen-te Pai** is a professor of Land Economics department of NCCU (National Cheng Chi University), also served as vice dean of social science college and chief of National Land research center in National Chengchi University. He also serves as the vice president of Taiwan Institute of Urban Planning and Local Development Institute in Taiwan. His research interest is primarily in urban and regional planning, transportation and land-use planning, disaster prevention planning, and also industrial innovation and spatial development analysis. He has co-edited "Spatial Planning and Sustainable Development - Approaches for achieving sustainable urban form in Asian cities" and published with Springer. He is responsive for the industry-university cooperation forum of SPSP society, and has been awarded 2016 best urban planning academic prize of Taiwan Institute of Urban Planning and 2017 best land economics contribution prize of Ministry of interior affairs of Taiwan.

**Shin-En Pai** specialises in urban study. He is a master student in the Department of Urban Planning of National Cheng Kung University. He received Bachelor's degree in the Department of Environmental and Cultural Resources, National Tsing Hua University from 2014 to 2018. He has internship experience in planning consultants company during his undergraduate studies. His research interests include Urban Planning, Smart City and Sustainable City.

## 29. Urban Shape and Social Inclusion. A Discussion around the Right to the City

Manuela De Vincenzi

### ABSTRACT:

The proposed topic concerns, in general, the decision-making process in urban planning in relation to its ideological implications, freedom of choice and the fight against urban poverty. In particular, this study focuses on ideal urban model design, and its subsequent export to different contexts, as a measure of development and reduction of economic and social inequality and marginalization of a certain part of the population. The case studies presented will be the following: the leisure city project "Tróia, garden-city" (1970) and the social housing project "Zona J" (1980). Even though they had different purposes (one was meant to be a middle class and touristic neighborhood, while the other was thought to be a neighborhood for poor people), both have the same formal project design. On one hand, Tróia continues representing a modern and quality touristic destination, "Zona J", on the other hand, has become the emblem of degradation. What was initially meant to be a requalification and urban integration project has eventually become a further element of stigmatization. Through comparison between original intentions, what was actually built and their effective use of spaces, we tried to answer the questions that underlie this work: are there universally valid solutions? What makes the same project a reference work in a given context and the emblem of environmental and social degradation in another? Who are the individuals who take these decisions?

*Keywords: Shape; Identity; Right to the City; Urban design*

**Dr. Manuela De Vincenzi** received a Ph.D. in Urban Studies at the Nova University of Lisbon where collaborates with the research group "Cities, Transport and Globalization". Currently she investigates on urban shape and its social impact. In particular, her research interests concerns: identity and representation of space, ideology and the right to the city. Among the main publications: "The Role of Shape: Experiences and Meanings in the Contemporary City" (2016) in *Drafts From Sociology of Design. Introduction to Discussion*. Cracovia:Oficina Wydawnicza AFM, ISBN 978-83-65208-55-2; "O Projeto Urbano entre Ideologia e Usos Quotidianos. Alguns Casos em Europa" (2016), Portugal, Território e Territórios, in [http://aps.pt/ix\\_congresso/actas/actas](http://aps.pt/ix_congresso/actas/actas) ; "Vernissage" (2012) in *NB\_I Linguaggi della Comunicazione*. Bologna: Fausto Lupetti, n°2 anno IV luglio 2012, EAN 978-88-97686-35-4.

## 30. The Struggle for Better Sustainability Awareness in Urban Development in Lodz, Poland

Renata Mikielawicz

### ABSTRACT:

Lodz is a post industrial city in Poland with a multicultural past of a mono-functional textile industry city, unique urban structure resulting from 19<sup>th</sup>-century rapid growth and difficult present time, in which the city confront the problems of identity loss and the challenges of contemporary world. Sustainability based in the urban planning law presents important issue, necessary to be dealt with in urban development. Some lately introduced Lodz urban plans and such activities as a participatory budgeting, together with a growing public sensitivity to the problems of the city identity and exceptional past form interesting study of the change in the public sustainability awareness and enable to formulate conclusions for the general procedures in urban planning. Compared with the general ecological design theories as f. ex. cradle-to-cradle approach, show various drawbacks in the way of thinking about space, by planners and users alike. Especially the holistic approach to the design maintain a feature hardly used in an appropriate way. The understanding of the basic notions of ecology and sustainability confronted with real dealings in a city build a study of continuous change in the sustainability awareness in postindustrial society which could help to make out general rules of practice implementation.

*Keywords: Sustainability, public awareness, public participation, urban development, urban design, urban strategy*

**Dr inz. arch. Renata Mikielawicz** is Assistant Professor of Institute of Architecture and Urban Planning, Lodz University of Technology, Poland. Architect and designer of numerous public and residential buildings, Head of the Unit of Rural Design and Bioclimatic Architecture from 1989 concentrates her research work on urban planning and ecology, especially on the problems of fringe areas of the cities and the planning criterions, with special interest in the issues of the ecological philosophy and its implications on the urban and architectural procedures. Dr Mikielawicz is the author of various articles in polish and international publications. Involved actively in international higher education schools cooperation – since 2003 regular visiting lecturer in the Hochschule Mainz, Germany; for twenty-two subsequent years organizer of international student workshop on steel frame constructions in TUL, Lodz.

## 31. Urban Form and Productivity in Mexico 1990-2015

Jorge Montejano, Camilo Caudillo, Paavo Monkkonen, Erick Guerra

### ABSTRACT:

Worldwide, urban policies are encouraging more compact development in cities arguing environmental sustainability and higher economic productivity. However, there is limited evidence for the relationship between urban form and economic productivity outside of high-income countries. While we know that workers in larger cities are more productive, existing empirical evidence on the relationship between compactness and productivity is only from high-income countries, with a productive service sector. Given that the economic base of many cities in Latin America consists of land-intensive manufacturing activities, policies promoting urban compactness have potential negative impacts on economic growth by restraining expansion. Therefore, in this paper we explore the relationship in time between urban form / urban structure and economic productivity in Mexico, by testing the hypothesis that growing in a compact way is positively associated with greater productivity. That hypothesis is rejected because several measures of urban sprawl are positively correlated with higher levels of economic productivity. As the principal findings are counterintuitive, they raise questions about what is the accepted knowledge of urban growth.

*Keywords: Urban Form; Productivity; Mexico*

**Dr. Jorge Montejano**, is Fulltime Professor at Centro de Investigación en Geografía y Geomática “Ing. Jorge L. Tamayo”, A.C. (CentroGeo) in México City, where he teaches courses in urban studies. He has published articles on land-use travel behavior, urban structure, urban growth, social housing and the impact of technology on the built environment. He is member of the National Research System in México (S.N.I.); member of the Mexican Academy of Urbanists (AMU), and member of the Network of Studies in Urban Form (REFU). His work has been published in journals such as *Urban Studies*, *Urbs*, and *Economía, Sociedad y Territorio*, among others. He studied Architecture at the Universidad Iberoamericana in México City, and completed a PhD in Urbanism at the Universitat Politècnica de Catalunya, in Barcelona, Spain.

**Mtro. Camilo Caudillo**, completed a Master in Geomatics at the Centro de Investigación en Geografía y Geomática “Ing. Jorge L. Tamayo”, A.C. (CentroGeo) and a Master in Population Studies at the Latin-American Social Sciences Faculty (FLACSO-México). Currently, he is Associate Professor and a doctoral student in Geomatics at CentroGeo, where he teaches Spatial Analysis and Spatial Statistics. His research interests are urban geography, residential segregation, spatial econometrics, detection of spatial and spatiotemporal patterns, and public safety. He has coauthored articles and book chapters related to geospatial technologies in prestigious publishers and journals like Springer and *Urban Studies*.



**Paavo Monkkonen**, Ph.D., is Associate Professor of Urban Planning at the UCLA Luskin School of Public Affairs. He studies the way housing policies shape urban development and segregation in cities around the world. More specifically, he researches housing finance policy, land use regulations, socioeconomic segregation, land titling programs, household formation, and property taxation. His work has been published in academic journals such as the *Journal of the American Planning Association*, the *International Journal of Urban and Regional Research*, the *Journal of Urban Economics*, *Regional Science and Urban Economics*, *Urban Studies*, and the *Journal of Peasant Studies*. Dr. Monkkonen completed a Master of Public Policy at the School of Public Affairs at the University of California, Los Angeles, and a PhD in City and Regional Planning at the University of California, Berkeley. He was previously Assistant Professor of Urban Planning at the University of Hong Kong.

**Erick Guerra**, Ph.D., is Assistant Professor in City and Regional Planning at University of Pennsylvania, where he teaches courses in transportation planning and quantitative planning methods. He has published recent articles on suburban transit investments in Mexico City, self-reported happiness and travel behavior, the relationship between land use and car-ownership and driving rates, and the role of land use in promoting high ridership and cost-effective transit service. His current work focuses on land use and transportation in Mexico City and Indonesia, public transport policy, land use and traffic safety, and contemporary planning for self-driving vehicles. As a practicing researcher and consultant, Erick has worked on a diverse range of planning-related topics, including housing investment and financial remittances in Sub-Saharan Africa; informal transportation in medium-sized Indonesian cities; and cross-border planning on the Island of Ireland. Erick holds a Ph.D. in City and Regional Planning from the University of California Berkeley, a Master's in Urban Planning from Harvard University, and a BA in Fine Arts and French from the University of Pennsylvania.

## 32. The Impact of Building Regulation Contravention on Rapid Urbanisation: Case of Kano Metropolis

Sani Khalil Ibrahim

### ABSTRACT:

An increasingly urbanizing world has made building regulation central to the organized development of cities world-wide. It is noted that half of the world's population is now living in cities. The world urban population is expected to increase by 84% by 2050, from 3.4 billion in 2009 to 6.3 billion and will happen in developing countries. Also projected in the next 20 years, over 95% of this population growth will occur in urban areas. Kano is among the fast urbanizing cities in the West African sub region. This paper focuses on the implication of building regulation contravention in Kano metropolis and its impact on the sustainability in mixed land-use areas. It identifies and documents the key drivers of contravention. The findings are expected to create the platform for developing a conceptual framework that might improve compliance to sustainable development regulation regime in Kano metropolis. The significance of the findings is expected to form the foundation towards development compliance procedures for a more sustainable urbanization process in the sub-region. Like Kano, Cities play vital role globally and nationally, as economic, social, cultural and political centers. To successfully achieve this, urbanization should sustainably be driven. Data was collected through Visual survey, interview and questionnaires and subjected to descriptive analysis. Preliminary findings indicate negative perception of current building approval and enforcement procedures in Kano.

*Keywords: Building Regulations, Contraventions, Sustainable Development, Compliance Procedures and Enforcement*

**Dr. Sani Khalil Ibrahim**, Senior Lecturer and Head of Department, Department of Architecture, Faculty of Earth and Environmental Sciences, Bayero University Kano. Obtained both B.Sc Aand M.Sc from Ahmadu Bello University, Zaria 1984 and 1986 respectively while the PhD was in 2013. Earlier worked with the Planning Authority and rose to level of Director before joining the University. Areas of interest are Sustainability, Urbanisation, Education and Construction.

### 33. The Role of Legal and Social Policies in Attaining Sustainable Urban Development in India

Manohar Samal

**ABSTRACT:**

This paper intends to explicate the present framework of legal and social policies in India, which govern urban development. The research is directed towards contemplating the progress of sustainable urbanism in India in achieving the goals of the 2030 Agenda of Sustainable Development. Overcrowding, rise in the number of informal settlers and unplanned development are the most prominent multi-faceted issues that India faces in the present day. A comprehensive analysis of urban development policies, environmental legislation, property laws and information laws have been discussed in order to exhibit the lacunae in the legal system which has slowed down the process of sustainable urban development in India. It is not only the policies, but also an array of problems that, have affected urban development in metropolitan cities, semi-urban regions and transitioning rural areas rendering them to be unsustainable. Therefore, this paper envisages and suggests solutions in tackling problems in legal and social policies that would make sustainable urbanism conducive and successful in India. An attempt has also been made to display how completely sustainable urban spaces would look in India. Analytical, Comparative and Doctrinal methods of research have been utilized to conduct the research.

*Keywords: Development, Local Self Government, Policies, Sustainable, India*

**Mr. Manohar Samal** is a 4th year Bachelor of Legal Science & Bachelor of Law (5 year integrated law course) Student at the Vivekanand Education Society's College of Law, Chembur, Affiliated by Mumbai University, Mumbai, Maharashtra, India. He also pursues professional training in western classical piano music and has completed VII music grades by the distance learning examinations system of Trinity College of Music, London.

## 34. Urban Environmental Governance within the Broader Sustainable Development Concept: Cross-National Comparative Case Studies of Nottingham City and Shanghai

Nguyen Que Huong Le

### ABSTRACT:

The paper is based on my doctoral study about urban sustainability governance. Through the lens of multilevel governance, policy network, and policy transfer, this paper presents a cross-national comparative case study of Nottingham City (UK) and Shanghai (China). The research seeks to understand (1) how different actors in Nottingham and Shanghai perceive the sustainable development concept; (2) the challenges and opportunities for urban environmental governance in their contemporary contexts; (3) how environmental concerns are considered in their urban development agendas; (4) and the mobility of resources and policy initiatives to support their environmental governance. It is challenging to compare presumably 'incomparable' cities, but the study, therefore, produces meaningful methodological contributions to the arena of urban comparative research. The fieldwork was conducted in Nottingham and Shanghai where I observed public events and conducted in-depth interviews with a wide range of actors. Preliminary findings show certain dilemmas between environmental protection measures, or more broadly sustainability policy agendas, and inequity with underlying economic-political implications in urban settings. Those dilemmas, therefore, reversely challenge the localisation practice of the sustainable development concept itself.

*Keywords: sustainable development; urban comparative case study; environmental governance; multilevel governance; policy network; policy transfer*

**Nguyen Que Huong Le** is a PhD candidate in the School of Sociology and Social Policy at the University of Nottingham. Her PhD study is situated within the Policy and Governance theme of the Leverhulme Project 'Sustaining Urban Habitats'. She read her Master of Laws in Environmental Law at the University of Nottingham and has worked as a city official at the Climate Change Bureau of Ho Chi Minh City before starting the PhD study. Her areas of research interest include sustainability governance, environmental politics, development studies, and human geography.

## 35. Flexible Public Spaces through Spatial Urban Interventions, Towards Resilient Cities

Ahmed Khaled Ahmed Elewa

### ABSTRACT:

Cities have become the dominant type of human settlements, currently more than half of the planet population are living in cities. Thus, cities have to be developed not only in terms of sustainability. Cities face more challenges regarding the dealing with sudden disasters, whether they were for natural causes or terrorism attacks, in addition to the fact that climate change is responsible of new phenomena of natural disasters, such as tsunamis. The study argues that spatial urban interventions in public spaces under specific criteria can reshape them into flexible spaces that have the potentials to be adapted with sudden disasters. The study has a theoretical methodology investigates the relations that link flexible public spaces and the achievement of urban resilience. As well as the study has a practical perspective through the analyzing of selected cases that showed how spatial urban interventions in public spaces can contribute efficiently in reshaping these spaces to be both flexible and vibrant. The findings clarified that flexible public spaces act as safety valves for our cities during disasters, meanwhile in peace time they act as vibrant and sustainable spaces that deliver multi socio-economic and environmental functions.

*Keywords: Public spaces- Spatial urban interventions- Resilient Cities*

**Dr. Ahmed Khaled Ahmed Elewa** is associate professor of City planning and Architecture design, Helwan University, Cairo, Egypt, and a member of the editorial board of journal of Urban Island Studies ([www.urbanislandstudies.org](http://www.urbanislandstudies.org)). His research deals with urban studies, regarding how to achieve a better quality of urban life in cities and other forms of urban communities, particularly urban poverty areas (this include slums and other forms of informal urbanisation) in developing and emerging countries, as well other related issues that have nexus to the quality of urban life such as the globalisation process, and how to cope with its physical urban changes, socio-economic and environmental effects on the urban life. In addition to urban development issues such as dealing with urban poverty areas through contemporary upgrading approaches and the possibility of achieving sustainable urbanism under special conditions. During the last six years he participates in 16 conferences in Italy, Germany, Finland, Austria, Netherlands, Denmark, Turkey, Serbia, Albania and Egypt.

## 36. The Regional Development Assessment of Social Resilience Based on Quantifiable Analyses Apply to Guangfu Village

Chao Tung Wu, Yang Ting Shen

### ABSTRACT:

This research aims to analyze an organization's social impact under Social Resilience issue (Herb, 2005) by developing the regional development assessment based on ESG and SROI standards. In addition, the assessment is also related with Sustainable Development Goal No.11 (Sustainable cities and communities). The application context is using our regional development assessment to evaluate how an organization can interfere when a community suffers external disturbances. This content could be established a sustainable management to arrange concrete consequences from various aspects of perspectives. It is observed that the assessment indicates that how to evaluate social impact of organizations in the community and scientifically quantitate value for Social Resilience. The framework based on ESG consisting of Environment, Social, and Governance, and SROI called Social Return on Investment. This estimate proceeds that testing a non-governmental organization (NGO) or a non-profit organization (NPO) interfering with the regions results in how much their influence is and how large a range of their influence is. The assessment was applied to analyze the region—Guangfu Village in Taichung City, Taiwan. The evaluation was not really phenomenal on the appearance under ESG and SROI standards. According to this study, the consequences from the assessment are described as below.

*Keywords: Social Resilience; ESG; SROI; Sustainable Development Goal*

**Chao Tung Wu** is Postgraduate of Architecture School, University of Feng Chia, Taiwan. One of members of Sync Lab. Mr. Wu researches on the regional development of Social Resilience for his thesis. Particularly, he participated in: Taiwan Youth Climate Stocktaking 2018, The Conference of Architectural Institute of Taiwan 2018, Redesigning Bornean Crafts 2018, Redesigning Craftsmanship Workshop 2018, and Borneo Laboratory in Taiwan 2017. Especially, some of these experiences had maintained a relationship with Borneo Art Collective, a local organization, which engages in retaining the development of local distinct craft industry in Sarawak. It was inspiring to him and progressed in his studies to explore the issues including urban regeneration, social responsibility, sustainable development goals, etc. It is clear that he concentrates on some fields associated with the regional development forward an explicit direction. Moreover, this master degree student will establish a platform of the versatile database in the period of MSc in order to assist to solve social problems in the regions swiftly via the visual information and the analytical mechanism.

**Assoc. Prof. Yang Ting Shen** is Associate Professor of Architecture School, University of Feng Chia, Taiwan. Head of Sync Lab where scopes Building Information Modeling, Human-Computer Interaction, Brain-Computer Interface, Parametric Design, Digital Fabrication, Data Visualization as described in the following link: [https://fcusynclab.wixsite.com/synclab?fbclid=IwAR1PylzJF\\_5nWZjKuLR0DtZz76a9PGhcm1JilGUTKdCvJounea0\\_XUtWCtg](https://fcusynclab.wixsite.com/synclab?fbclid=IwAR1PylzJF_5nWZjKuLR0DtZz76a9PGhcm1JilGUTKdCvJounea0_XUtWCtg). He currently also leads a research team of Education Promotion Division that studies Building Information Modeling, and Director of Master Program in Creative Design in Feng Chia University. Assoc. Prof. Shen has also been involved in Digital Fabrication and he obtained many prizes in Taiwan and other countries. He has extensive experience working with corporates and governments such as Taichung World Flora Exposition 2018 displayed many kind of interactive installation art.

## 37. Quantifying the Environmental and Economic Performance of Remote Communities

Jamie E. Filer, Steven J. Schuldt

### ABSTRACT:

Remote communities such as oil production sites, post-disaster housing camps, and military forward operating bases (FOB) are often detached from established infrastructure grids, requiring a constant resupply of resources. In one instance, a 600-person FOB requires 22 trucks per day to deliver necessary fuel and water and remove generated wastes. This logistical burden generates negative environmental impacts and increases operational costs. To minimize these consequences, construction planners can implement sustainability measures such as renewable energy systems, improved waste management practices, and energy-efficient equipment. However, integration of such upgrades can increase construction costs, presenting the need for a tool that identifies tradeoffs among conflicting criteria. To assist planners in these efforts, this paper presents the development of a novel remote site sustainability assessment model capable of quantifying the environmental and economic performance of a set of infrastructure alternatives. Through field data and literature estimates, a hypothetical FOB is designed and evaluated to demonstrate the model's distinctive capability to accurately and efficiently assess construction alternatives. The proposed model will enable construction planners to maximize the sustainability of remote communities, creating sites that are more self-sufficient and produce less environmental impacts.

*Keywords: Sustainability, infrastructure, remote communities*

**Captain Jamie E. Filer**, USAF, is a graduate student in the Engineering Management program at the Air Force Institute of Technology (AFIT), Wright-Patterson AFB, OH. Her research focus is on energy sustainability and resiliency for deployed bases through the use of optimization methodology. Prior to entering graduate school, Captain Filer spent 4 years working as an Air Force civil engineer at Dover Air Force Base, Delaware. She earned a Bachelor of Science degree in Mechanical Engineering from the University of Pittsburgh, Pennsylvania.

**Major Steven J. Schuldt**, Ph.D., P.E., USAF, is Assistant Professor of Engineering Management and Engineering Management Research Lead, Department of Systems Engineering and Management, Air Force Institute of Technology (AFIT), Wright-Patterson AFB, OH. In this capacity, he directs the construction management curriculum, organization and research agenda of the AFIT Graduate Engineering Management program with 20 students per year. In total, Major Schuldt has 12 years of civil engineering experience, including year-long deployments to Kabul, Afghanistan and Kunsan Air Base, Republic of Korea. Major Schuldt earned Bachelor of Science and Doctor of Philosophy degrees in Civil Engineering from the University of Illinois at Urbana-Champaign.

## 38. Cooperation Between a Port and Local Community in Light of Sustainable Development

Boris Marzi, Klavdij Logožar

### ABSTRACT:

Ports represent the starting and ending point of maritime transport. Representing the meeting points of cargo exchange between maritime and other means of transport, they are an indispensable part of transport-logistic chain. Port also have an important role in development of the surrounding/hosting area from economic, social and environmental aspect. In order to operate successfully, a port must work and act in accordance with sustainability - environmentally, economically and socially responsible. The article presents a case study of sustainable coexistence between an economic subject - cargo port and its natural and social surrounding. Examples of port process and operations improvements in light of sustainable development and harmony with local community will be presented.

*Keywords: Port system, local community, sustainable development*

**Boris Marzi**, M.Sc. is doctoral student at University of Maribor, Faculty of Economics and Business, Slovenia where he is preparing a doctoral thesis on environmental impacts of port activities and the reverse logistics processes in ports.

**Dr. Klavdij Logožar** is Associate Professor at University of Maribor, Faculty of Economics and Business, Slovenia. His research interests focus on logistics and supply chain management.



## 39. The Effects of Tourism on Traditional Craftsmanship for the Sustainable Development of Historic Environments

Özlem Karakul

### ABSTRACT:

Improving the quality of life and creating various economic benefits, conservation of cultural heritage can contribute to sustainable development as a concept having environmental, economic and socio-cultural aspects. Intangible cultural heritage as the chief reason of cultural diversity particularly guarantee sustainable development. In recent years, together with the increase in the concern about local ways of life, festivities, has motivated the conservation of intangible cultural heritage specifically, and contributed to the continuity of the implementation of traditional craftsmanship as a domain of intangible cultural heritage and guaranteed the sustainable development. The conservation of traditional craftsmanship necessitates providing the transmission of knowledge between master and apprentice and the continuity of practice. Through 20th century, rapidly changing life conditions, the demand for traditional craftsmanship has noticeably decreased causing the decrease in the number of practitioner craftsmen. It needs to regenerate the organic relationships of crafts with the changing life conditions for their conservation. Tourism can be a motivating force to regenerate interrelations with the increasing demand of tourists for traditional crafts. This paper aims to present the effects of tourism on crafts and discuss specific conservation approach focusing on the sustainable development of historic environments.

*Keywords: Traditional craftsmanship, tourism, conservation, historic environments, sustainable development*

**Dr. Özlem Karakul** is an Associate Professor in Faculty of Fine Arts in Selçuk University in Konya; teaches on interior design, conservation of historic settlements, restoration and reuse of traditional buildings. She received B.Arch(1998), M.Sc. in Restoration (2002) and a PhD in Restoration (2011) in Department of Architecture from Middle East Technical University, Turkey. She completed a postdoctoral research about the traditional craftsmen of Anatolia in Department of Architecture in Middle East Technical University in February 2017. Her post-doctoral project was granted an Ankara Research Award given by VEKAM. Her main research interests are relations of tangible and intangible cultural heritage, holistic conservation of historic environments, traditional craftsmanship in vernacular architecture of Anatolia and new buildings in historic settings.

## 40. Conditions for Sustainability in Indonesia's Regional Development: An Application of Qualitative Comparative Analysis

Akhmad Fauzi

### **ABSTRACT:**

Sustainable development has been the main agenda for Indonesia's development, both at national and regional levels. Along with Laws on national development plan and regional development that mandate sustainable development framework, the government has also issued President regulation number 59/2017 on implementation of sustainable development goal. The issuance of these recent regulatory frameworks indicating that the sustainable development should be taken seriously in the development processes. Nevertheless, there are several factors that affecting the achievement of sustainable development. These include economics, social, environmental, as well as institutional factors. This paper investigates how these factors contribute to the achievement of sustainability at the regional level. Using the recently popular approach known as Qualitative Comparative Analysis or QCA, the paper seeks to find conditions or combination of conditions that influence the outcome of sustainability. Both multi value QCA (mvQVA) and fuzzy set QCA (fsQCA) were used to assess the sustainability at regional level. Lessons learned could be drawn for this analysis to formulate policy and recommendation for the betterment of pursuing sustainable development both at national and regional levels.

*Keywords: Sustainable development, Qualitative Comparative Analysis, conditions for sustainability, policy formulation*

**Dr. Akhmad Fauzi** is Professor and head of graduate program of regional and rural development Bogor Agricultural University, Indonesia. He received his Ph.D in Economics from Department of Economics, Simon Fraser University, British Columbia, Canada. His Master degree on resource and environmental economics was obtained from the University of Guelph, Ontario, Canada and his bachelor degree from IPB. He has been actively involved in international research in partnership with USAID, AusAid, ADB, the World Bank, Packard Foundation, The Nature Conservancy, WWF, and European Union. At national level, Akhmad Fauzi is also actively involved as consultant for ministry of environment, National planning agency (Bappenas), Ministry of Fisheries and Ocean, Ministry of Public Works, Ministry of Research and Technology and many others. He has published many books in Indonesian to be used as university textbooks and various research papers in various journals.

## 41. Social Enterprising Observance among B40 Urban Women for Socioeconomic Sustainability

Rohaiza Rokis

### ABSTRACT:

This article explores the enterprising capabilities of economically challenged women in urban city of Kuala Lumpur, Malaysia. The research assumed the entrepreneurial awareness and entrepreneurial intention are good predictors for women to be socioeconomically sustainable. Samples were selected among the B40 women in Kuala Lumpur, Malaysia. B40 group refers to the “bottom 40 per cent” members of population, with a monthly income of RM 3,855 and below (USD945 and below). A total of 404 B40 urban women were drawn from a clustered random sample of four so-called “poor” municipal residents in Kuala Lumpur. Their levels of entrepreneurial awareness and intention were studied by a questionnaire survey, which is administered by the Statistical Package for the Social Sciences (SPSS) Version 22. The data was analysed using descriptive statistics, ANOVA and Pearson’s Correlation. As found, there was a significant relationship between their levels entrepreneurial awareness and entrepreneurial intention with being socioeconomically sustainable. Four important predictors were deduced: 1) upholding the economic justice for B40 urban women; 2) reducing urban poverty concentration among women; 3) innovating new working avenues for women homemakers in informal work sector; and 4) enhancing moral responsibility towards sustaining the natural environment. Based on this empirical outcomes, the research also recommends for suitable approach of social entrepreneurship among women of different ethnic groups through collective efforts. Significantly, it will contribute in the pursuit of community development and national unity.

*Keywords: B40 women, Entrepreneurial awareness, Entrepreneurial intention, Malaysia, Social enterprising, Sustainability, Urban poverty*

**Dr. Rohaiza Rokis** teaches Sociology, and currently an Associate Professor at the Department of Sociology and Anthropology, International Islamic University Malaysia. She specializes in women and work, and has special interests in gender at work and social entrepreneurship. Her current research project is on ethnic profiling of social entrepreneurship among B40 Malaysian urban women, in which she received a national research grant from the Malaysian Ministry of Education. She is also currently working on a textbook on gender inequality and stratification, which soon will be published by the International Institute of Islamic Thought (IIIT).

## 42. Sustainable Development and Quality of Life in the City on the Example of Research in Poland and Ukraine

Hubert Kotarski

### ABSTRACT:

The issue of sustainable development in connection with the quality of life of residents is one of the key problems of modern cities. Poland and Ukraine are the two closest neighbors. Rzeszów and Lviv are two university cities that are also partner cities. The main objective of the study was to get to know the opinions of students of the University of Rzeszów and the University of I. Franki in Lviv on selected topics related to the quality of life in Rzeszów and Lviv, as well as life and professional aspirations of students in Poland and Ukraine. The aim of the study was both cognitive and practical, that is, on the one hand, the focus was on obtaining information on specific topics related to various aspects of the quality of life in the city and the aspirations of young people, on the other hand, an attempt will be made to obtain information, which may prove to be useful for the authorities of both universities and cities in the context of using the considerable potential of the young inhabitants of these cities.

*Keywords: Sustainable development, quality of life, students, Poland, Ukraine*

**Hubert Kotarski** - doctor of humanities in the field of sociology, academic teacher, he works at the Institute of Sociology at the University of Rzeszów. He conducts research in the field of city sociology, youth sociology and culture, as well as regional diversity of human, social and cultural capital. He published several books, including *Human Capital and Social Capital, and the development of the Podkarpackie Province* (2013), *the Capital of Podkarpace yesterday and today. Sociological studies on social aspects of transformations in Rzeszów in 1989-2009* (2013 in co-authorship), *Rzeszow Social Diagnosis 2015* (2016 in co-authorship), *Rzeszowska Social Diagnosis 2017* (co-authorship 2018), as well as many articles, reports, strategies and analyzes. Participant of over a dozen foreign and domestic scientific conferences, workshops and seminars devoted to socio-economic issues.

## 43. Healthier and Safer Nightlife in Portugal Central Cities An Ecological Public Health Approach

João Redondo, Fernando Mendes, Diana Vilela Breda

### ABSTRACT:

Recreational nightlife plays an important role in young people lives, but it's associated with risk factors in multiple areas. The causes of disruption of healthy lifestyle habits, associated with recreational settings, have underlying a multiplicity of risk factors. Aiming to contribute to prevent risk factors and promote protective factors and community resilience, the Centre for Prevention and Treatment of Psychological Trauma (Coimbra Hospital and University Center - CHUC) and the European Institute of Studies on Prevention (IREFREA Portugal) are investing since 2014, in partnership with other organizations (Health, Education, Security Forces, Municipality, and others sectors), in a project associated with recreational contexts and night recreation (since 2018 under the Portugal 2020 programme). From an ecological public health and networking perspective, it focuses on prevention of interpersonal violence (including violence in intimate relationships), alcohol and illicit drugs consumption and road accidents. It covers 23 municipalities in the central region of Portugal ([www.noitesaudavel.pt](http://www.noitesaudavel.pt)). Assess data that already exists, search for new evidences, (re)define indicators, ascertaining pilot-experiences successfully implemented, implementing new strategies, analyzing the phenomenon in other national cities (also in the world), disseminate the results, represents some of the strategies in our project.

*Keywords: Nightlife, risk factors, ecological public health perspective*

**Dr. João Redondo**, Psychiatrist, since 1990, working in CHUC. Family Therapist (1992) and Supervisor of the Portuguese Society of Family Therapy (2002), and Psychodrama Director (1989). Since 2000 mainly focused in the prevention/intervention and implementation of networking on interpersonal violence and concomitantly in the study of the impact of traumatic experience in mental health. Co-founder of multidisciplinary/multisectoral networks: "Violence: Information, Research, Intervention" (2002) and "School Network Against Violence" (2007). Executive coordinator of the Agency for the Prevention of Trauma and Human Rights Violation (2014). Co-founder of the project "Healthy Night of the Cities of the Centre of Portugal" (integrates the scientific coordination of the project). Advisor of the National Program for Mental Health - PNSM (Directorate-General of Health - Ministry of Health), in areas of family violence, human trafficking and refugees. Participates in the international workgroup of the Radicalisation Awareness Network. Member of the Centre Regional Council of the Portuguese Order of Physicians (2014-2016 / 2017-2019). Integrated a Commission appointed by the Ministry of Health for support of victims of fires that devastated Portugal (2017). Was part of the Technical Commission for Monitoring Mental Health Reform (PNSM 2007-2016). Author and co-author of several publications

**Fernando Mendes**, Clinical Psychologist. President of IREFREA Portugal. Coordinator and Responsible for the National Preventions Campaigns of I.P.D.T, under the Primary Prevention of Drug Addiction

between 1999 and 2005. Participation in several national and international research and prevention networks. Training and capacity as “group leader” gained in the Course: “Families Strengthening Program” at Princeton - USA - 2005. IREFREA. Researcher since 1997, in projects related to family and recreational contexts, involving European partners funded by the European Commission, financed by DGSanco between 2005/2018, involving European countries under recreational cultures. Consult [www.irefrea.org](http://www.irefrea.org) . /[www.irefrea.eu](http://www.irefrea.eu). Participation in the European Project “Democracies, Cities and Drugs II” (Agreement number: 2007306) between 2009 and 2011, responsible for the Evaluation of the whole project. Coordination the organization of national and international scientific meetings to not only facilitate information sharing, discussion and consensus among institutions that are pursuing Peer Education and other Youth Health Promotion Strategies, but also to develop a national and international network of partners in Peer Education, from Portugal, Cape Verde, Brazil and other Portuguese spoken countries. Author and co-author of several publications. Responsible for the implementation of school programs and training for professionals in night life contexts.

**Dr. Diana Vilela Breda** is Healthcare Manager at Coimbra Hospital and University Center (CHUC). Currently she is the Director of International Relations at CHUC and member of the Board of the Research and Development Unit. Diana is also the Focal Point of Coimbra Health at the M8 Alliance of Academic Health Centers, Universities and National Academies - a network of 25 leading institutions focusing on improving Global Health. She was also, in 2018, the Executive Director of the World Health Summit Regional Meeting, responsible for the scientific program of this summit that focused on ways of translating innovation into action in low/middle income countries. Scientific Coordination of the Project “Healthy Nightlife of the Cities of the Portugal’s Central Region”. Coordinator of the European Reference Networks (ERNs) at CHUC (European Commission program of virtual networks involving healthcare providers across Europe; member of 10 ERN and highest number of national reference centres). Member of the Scientific Comitee of the 3rd ERN Meeting, to be held in Paris next May.

## 44. A Framework for Architecture Theory and Practices Research

Fathi Bashir

### ABSTRACT:

This article is a documentation of the current design research in the master of architecture studio at Wollega University, Ethiopia. The goal of the study is the creation and advancement of knowledge about design. Recently the increasing concern with the outcomes of the conventional design approach has led to growing desire among the students for evaluation of existing design work and learning from the failure. That the inadequate understanding of design problems leads frequently to design failure, as Friedman (2000:20) says, suggests that design outcomes evaluation can be achieved by assessment of the architects' understanding of design problems. The assumption is that architects' understanding of design problems can be evaluated by examining the way data is collected and analyzed, and by assessment of how data is used in developing the knowledge base of the design process. The students used questionnaires in order to survey the architects' views and to discover how the inadequate engagement of design knowledge has impacted decision-making and may have led to design failure. In this article initial findings of the survey are analyzed and documented; and, the way the insight drawn from the inquiry into design outcomes is expected to be used in design theory creation and testing is discussed.

*Keywords: design outcomes, failure, evaluation, questionnaire, analyze*

**Fathi Bashir** (Ph.D), is Professor of The Master program in advanced architecture design, at Wollega University. The first batch graduated in 2016, and now 4 batches are progressing. During his three years services at Wollega University, the professor has introduced a revised M.Sc. Program in 2017 and a new Ph.D program in architecture is due to begin next semester. The professor has initiated and coordinated academic cooperation programs between Wollega University and several international universities in Poland and in Italy. The professor writes and publishes articles in academic journals on regular basis, the most recent articles include: "Reflection on architecture design education: the return of rationalism in the studio" published 2014, "The design process system a methodology of design research" published 2017. Professor Bashier has also authored several books in English and in Arabic, all are available on line. He has attended and presented research papers in seminars and international conferences in many countries, the last attended the WACUMS 2017 in Prague, Czech Republic, and The conference on Ethiopian Studies, 2018 at Mekelle University. Today presentation is entitled "Analytic design theory" introduces an experimental research proposed to be carried out concurrently in Wollega University, and Politecnico di Torino, Italy. Hopefully some more universities in Ethiopia may join.

## 45. The Influence of Flexibility Principle on the Sustainability of Interior Design (Case Study - Smart Home Technology in Iraq)

Ibtisam Al Khafaji, Raz Kamaran

### ABSTRACT:

The recent decade has witnessed a rapid evolution of technology which paved the way for smart interior design solutions, and stimulated the environment for designers studying the effect of integrating smart solutions into aspects of flexible and sustainable interior design. Flexible Architecture became more widespread in the late 1960s, while "Sustainable Architecture" was more common from 1987. In recent years both terms are used almost to the same extent in literature. In general, one of the most important ways to achieve sustainability is to develop the space flexibility to ensure more efficient use of space (adaptable buildings are likely to use the same amount of space and materials more efficiently, on average, over their entire life). In this research we will explain how flexible space can improve sustainability of interior design by using smart technology (case study -houses in Iraq). A literature review in the disciplines of Interior Design efficiency, Smart Home Technology and Interior design sustainability practices provides an analysis of flexibility as an enabler of sustainability in smart homes. Building systems that utilize smart interior design solutions optimize lifestyle comfort and flexibility, raise energy efficiency, and reducing costs that lead to achieving a more sustainable interior design.

*Keywords: Flexibility, Sustainability, Smart Technology, Smart Interior Design, Smart Homes*

**Ibtisam Al Khafaji**, Born in Iraq 1972. Academic Qualification: 1- B.S.C. degree In architecture Engineering - University of Technology -Iraq 1995; 2- Master of Science in Architectural Engineering ,University of Technology- Iraq 1999; 3- Ph.D.in architecture, spatial planning (towards a living city ,study of spatial generativeliving geometry of old center of Baghdad -Al Rusafa). Univ ersità degli studi Mediterrania Di Reggio Calabria-2013. Job title: 1- Functions: architect, lecturer and scientific researcher. Employer: Ministry of Higher education and scientificresearch /Iraq from 1995-2013; 2- Functions: scientific researcher , architect. Employer: -United Nations office for Project services /united Nations Development Programme (sustainable human development /Project LIB/00/001 (rehabilitation ofthe old city of Ghadames -Libya 1999-2001; 3: Functions: teacher of Arabic language ,society and culture 2014-2017. Employer: scuola superiore per Mediatori linguistici (Don Domenico Calarco), Catona, Reggio Calabria /Italy. 4- Functions : architect , lecturer and scientific researcher. Al-ISRAA UNIVERSITY COLLEGE / Baghdad -2017-2019. Personal skills: 25 years of active and creative work as architect , lecturer and scientific researcher inside and outside Iraq in Architecture and Urban design.

**Raz Kamaran**, Student of master degree in architecture, University of Sulaimani, department of architecture, Iraq



## 46. Importance of Porch in Mediterranean Architecture

Turgay Salihođlu

### ABSTRACT:

With the Industrial Revolution, human beings have faced ecological problems. Due to this reason, the term "Sustainable Architecture" came into a question in the architectural field. In 1987 the United Nations Environmental Commission re-defined this term. Also in 1992, the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil adopted some principles. When we look at the principles of "Sustainable Architecture", we can briefly refer to these principles as "Natural Air Conditioning" or "Thermal Comfort". Despite of this process, many architects still produce projects under the name of an `Modern Architecture` without considering the life cultural life style and climatic features of Mediterranean region. In fact, in the past rural houses and urban dwellings, on the line of official buildings is an open laboratory. When the laboratory is examined in Cyprus, "Porch Plan" dwellings, which are reached as a result of the experiences in the Rural Housing Houses, are started to be made in the cities. This development stemming from climatic characteristics is observed in the British Administration, Government Offices and Bureaucrats and Officers' homes which dominated the island of Cyprus in 1878-1960. These architectural porches were also seen in the houses of Cyprus Mines Cooperation employees, which started its activities in 1914 due to the rich copper deposits in the Lefke region.

*Keywords: Environment. Solar Radiation. Sustainable Architecture. Thermal Comfort. Porch*

**Associate.Prof.Dr.Turgay Salihođlu** was born 1959 in Cyprus. Graduated from Gazi University, Ankara, Turkey from the Department of Architecture. After practicing as an architect he joined the Near East University where he got his PhD and continued as a teaching staff. His main interest is the building materials and thermal comfort the traditional construction in semiarid climates.

## 47. Developing a Collective Awareness Platform for Urban Sustainability Challenges: Case Study of the POWER Project

Mathias Becker, Jasminko Novak, Kalina Drenska, Theo Fernandes

### ABSTRACT:

In this paper we describe the socio-technical approach developed in the POWER project extending traditional forms of citizen engagement for local sustainability challenges with a collective awareness platform in order to increase public awareness, knowledge and engagement. We show how a citizen-centered design and implementation process integrating different technological enablers such as gamification, real-time open data integration or knowledge visualization results in a platform for sustainability issues that can drive collective awareness and collaborative knowledge sharing. Against the background of four different pilot cities with distinct water-related sustainability challenges, we present the implementation of the local platforms and how these have been effectively used by almost 1.000 active users, supporting an innovative engagement model that employed collaborative open innovation in online and offline settings for citizen-driven solution development to local sustainability challenges. We present the results from three series of citizen workshops where 150 participants provided valuable feedback, which was integrated in the further platform improvement. The evaluation confirmed its usability, enabling platform uptake among the target groups and its social impact by increasing awareness and knowledge. Finally, we derive a set of implications for similar initiatives addressing sustainability challenges helping them to overcome common barriers to participation and engagement.

*Keywords: citizen engagement, digital citizenship, sustainable urbanism, education, governance sustainability, gamification, water conservation, disaster risk reduction*

**Mathias Becker** is a senior researcher at the European Institute for Participatory Media. He studied Information Systems for Business Administration at the University of Applied Sciences in Stuttgart and Cultural Sciences at the Leuphana University of Lüneburg. Mathias Becker has worked for several years as a Software Engineer in the field of large-scale J2EE projects. He continued his career as Management Consultant working for Siemens Business Solutions GmbH and Atos AG in large-scale IT projects for the Public Sector before he started to work at the EIPCM. Mathias Becker has extensive expertise in requirement analysis and his main thematic focus lies in IT solutions for the Public Sector as well as in participatory systems for social innovations and environmental sustainability.

- Prof. Dr. Jasminko Novak**, European Institute for Participatory e. V. Pariser Platz 6, 10117 Berlin, Germany. University of Applied Sciences Stralsund, IACS-Institute for Applied Computer Science, Zur Schwedenschanze 15, 18435 Stralsund, Germany. Prof. Novak is also Professor of Information Systems at the University of Applied Sciences Stralsund. He was also Guest Lecturer at various European universities (University of Zurich, University of Applied Sciences in Basel). Prof. Novak is an internationally acknowledged expert with 12 years of scientific and professional experience in user-centred design and evaluation of socio-technical systems, human-computer interaction, knowledge visualisation and participatory media. He has extensive experience in the participation in and leadership of large-scale research projects (EU-IST, German Federal Ministry of Education and Research) as well as in innovation management and the transfer of research results to business exploitation. Prof. Novak was advising the EU DG-INFSO as member of Expert Groups on User-centric Media, Future Internet and Social Networks. He also advises companies and public institutions in IT, media, financial services, culture and creative industries.
- Kalina Drenska**, European Institute for Participatory e. V., Pariser Platz 6, 10117 Berlin, Germany. Kalina Drenska is a community manager at the European Institute for Participatory Media e. V. She holds a MA degree in Media and political communications from the Free University in Berlin. During her studies she has strongly focused on topics connected to digital communication, online participation and the societal effects of the implementation of new communication technologies and tools. Before joining the EIPCM, she has worked as a community and communication manager for diverse organisations in non-governmental and private contexts.
- Theo Fernandes**, Aggregate Formula, Lda, Rua Borges Carneiro 34 Rc, Lisboa, 1200-619, Portugal. Senior Consultant with 17 years of professional experience focused in the area of Information Systems applied to the environment sector. During his career has accumulated several complementary views on the theme of Water Resources, Water Services, GIS and Environmental Functional Analysis either as area coordinator in public authorities, as part of the team of ministerial offices or as independent consultant. In the last 10 years Theo has coordinated some of the national flagship projects for the Portuguese Government on the areas of water services, water resources and environmental licensing. As a functional analysis consultant of web projects, Theo worked for several Google Offices in Europe and is the first inventor for a specific patent (US US8160980) regarding "Information systems based on time, space and relevance". Since 2003, Theo is an invited lecturer at the Faculty of Science and Technology, New University of Lisbon, lecturing subjects of Information Decision Support systems, Hydraulics and Hydrology.

## 48. Diachronic Analysis of Florianópolis Urban Morphology and Their Impact on Urban Mobility

Caroline Cardoso Machado, Lucas Heiki Matsunaga, Ingrid Luiza Neto, Hartmut Günther

### ABSTRACT:

The capital city of Florianópolis is an island located in the south of Brazil. Its occupation was influenced by a variety of political and historical facts during the Brazilian colonial period. This study aims to analyze the urban evolution of the city from 1819 to 2018 through the theory of social logic of space versus urban mobility. The diachronic analysis allows the evaluation of the evolutionary process of the cities and their diverse interconnections that constitute and qualify the main structuring networks using axial maps. During this temporal frame, it observed that there was a small growth of the system in the first two periods analyzed, marked by a compact occupation in a short area. First, in 1950's, a large increase in the system's area and segments may be observed, due to the growth of the urban occupation patch and the population increase in the municipality. Second, particularly in 1957, the city experienced huge growth, increasing the values of the variables of synergy, intelligibility, although this growth was not realized in a sustainable way. Therefore, there have already reports of overload of some urban transport systems that are associated with a high population increase and private car fleet.

*Keywords: Urban mobility, Florianópolis, Theory of social logic of space, Sustainability, Axial maps*

**Caroline Cardoso Machado**, Architect and Urbanist by FAU - UNB. Master's degree in Environmental Psychology, at the University of Brasília in the Graduate Program in Environmental Psychology with the guidance of Prof. Dr. Hartmut Günther in the area of crime and public safety. Member of the Environmental Psychology Laboratory, where multidisciplinary and cross-cultural research is carried out through the projects Healthy Urban Mobility and Placemaking with Elderly. Has practical experience in the area of Architecture and Urbanism, acting as subjects: Environmental Crime, Sustainability, Environmental Psychology, Urban Production Process, Urban Mobility and Post-occupation Analysis.

**Lucas Heiki Matsunaga**, Research Student at Tohoku University, Japan. Psychologist by the Institute of Psychology at the University of Brasilia, Brazil. Member of the Environmental Psychology Laboratory and the Social Psychology Laboratory of the University of Brasilia, where multidisciplinary and cross-cultural researches are carried out through different research projects. Has practical experience in the areas of Criminology, Psychology and Urbanism.

**Ingrid Luiza Neto**, Graduated in Psychology and Pedagogy, with master's and doctorate in Social Psychology (UnB). Member of the Laboratory of Environmental Psychology and of the Research Group on Behavior in Transportation and New Technologies (UnB). Coordinator of the Laboratory of Traffic Psychology - LaPsiTrans (UDF). Research Assistant in the Healthy Urban Mobility research project.

**Hartmut Günther**, Studied Psychology at the universities of Hamburg, Germany (1966-67) and Marburg, Germany (1967-68) and holds a degree in Psychology from Albion College, Michigan, USA (1969). Has a master's degree in experimental psychology (AEC) from Western Michigan University (1970) and a Ph.D. in Social Psychology from the University of California at Davis (1975). Professor emeritus of the University of Brasilia, he currently works as a senior collaborator and coordinator of the Laboratory of Environmental Psychology. Also, conducts research in the field of environmental psychology, especially on urban quality of life and traffic psychology.

## 49. Empowerment Strategy of Village Enterprises Unit to Improve Capacity and Their Performances in Sumedang Regency

Akadun, Hidayat, Lalas Sulastri

### **ABSTRACT:**

The measurement of Village Enterprises Unit (VEU) performance was difficult because VEU was categorized as Medium, Small and Micro Enterprises (MSMEs). One of the characteristics of MSMEs was the absence of financial statements so that performance was difficult to measure. The VEU classification was very strategic in order to develop the capacity and performance of VEU. This study aims to develop a VEU empowerment strategy to increase capacity and performance in Sumedang Regency. The study used data collection techniques in-depth interviews, observations, and documentation. Triangulation as data analysis, data processing procedures included display data, data reduction, and drawing conclusions. The results showed that VEU performance was influenced by the legality and regulation of VEU governance; manager of entrepreneurial and dedication; mastered accounting and ICT; creating strong leadership; the type of VEU business to fulfill community needs; VEU governance of transparent, accountable, participatory, effective, efficient, and healthy (high liquidity, high profitability, high solvency). The VEU empowerment strategy is carried out by benchmarking, the internal quality assurance system, accreditation, the evaluation of outstanding VEU Managers, and VEU Achievement.

*Keywords: Governance, performance, healthy, quality assurance, accreditation*

**Akadun** was a doctor of social sciences in the field of study in Administrative Sciences from Padjadjaran University, Bandung. Akadun was also the Chair of the Eleven April College of Administrative Sciences Sumedang. Akadun has published 4 book titles in the field of Public Administration and Research Methods. In addition, Akadun has published articles in several national and international journals, including in international conference proceedings. Akadun has also been the principal researcher in a number of studies in his institution.

**Hidayat** was a doctor who graduated from Padjadjaran University and served as Director of the Postgraduate Program at the University of Nurtanio Bandung. Besides publishing articles in several articles, Hidayat also became a consultant in government activities both in the ministry and in the regional government.

**Lalas Sulastri** was a master of public administration graduating from STIA Eleven April Sumedang. Lalas Sulastri served as Head of Research and Community Service Technical Unit for STIA Eleven April Sumedang. Lalas Sulastri has successfully published articles in several national journals and received grants from the Ministry of Research and Technology and Higher Education.

## 50. Water challenges and Urban Sustainable Development in Changing Climate: Economic Growth Agenda for Global South

Tabassam Raza, Frederika Rentoy, Nisar Ahmed, Thess Khaz Raza

### ABSTRACT:

Access to safe clean water and sanitation were pressing concerns for survivors after super Typhoon Haiyan devastated central Philippines in November 2013. Essentially, water problems in the cities of Global South especially in Southeast Asian Archipelagos (Philippines, Indonesia, and Malaysia) plus Myanmar and Thailand are viewed as the consequence of uncontrolled rapid urban development and Climate Change (CC) variations. These facts emphasized the link between water insecurity and its negative economic impact. Thus, an equal and inclusive agenda is developed without which universal access to drinking water, sanitation, and hygiene is not possible. It comprises of conducting gender-sensitive strategic planning workshops and strategic spatial analysis using Geographic Information Systems. It was implemented to Quezon City (QC), Philippines as pilot. The output is an action plan defining 15 Programs, Projects and Activities (PPAs) as solutions for water challenges across five development sectors (Social, Economic, Environmental, Land Use/Infrastructure, and Institutional) in the Philippines context. The appropriate implementation of these PPAs will ensure QC's sustainable development, CC-resiliency, and its contribution to the country's economic growth. The framework used is flexible and can be fashioned for the other cities in Global South countries and other regions.

*Keywords: Sustainable Development, Climate Change, Inclusive, Economic, Action Plan*

**Dr. Tabassam Raza** is Associate Dean of Graduate School of Business (GSB) and Director of Disaster Risk (DR) Management Unit, GSB, Philippines School of Business Administration (PSBA), Manila Philippines. He is also Technical Advisor of Quezon City Government, DR Reduction Management Office. Dr. Raza has multidisciplinary academic and professional expertise i.e., Risk Sensitive Urban Land Use and Sustainable Development Planning; Climate Change (CC) Adaptation and DR Financing (Ph.D. and MA in Urban and Regional Planning, University of the Philippines, Diliman (UP-D)); Disaster Economics, Institutional setup and Policy Design (Doctor in Business Administration DBA, PSBA); Knowledge Support System in Investigating Environmental Hazard Prone Areas (MS Geology, UP-D); Analyzing and Mitigating Hazard Prone Areas (M.Sc. and B.Sc. Applied Geology, University of the Punjab, Pakistan), and Civil Engineering (BSCE, UP-D). Dr. Raza has local and international progressive experience of more than 20 years. He has served on various positions including among others Government Adviser, Senior Director, Associate Dean, DRM and ICT Projects Expert, and Technical Director. In addition, he had worked for multilateral organizations such as ADB, WB, UNISDR, UNDP, DKKV-FFO Germany, JICA and EU-DIPECHO funded projects. He has proven to have versatility, intellectual leadership, and strategic skills.

**Ms. Frederika Rentoy**, heads the Environmental Protection and Waste Management Department (EPWMD), Quezon City Government, whose main task is to carry out a comprehensive environmental

program anchored on the City's vision of becoming a Low-Carbon and Sustainable City. Specifically, she supervises the implementation of an efficient Solid Waste Management System and enforces regulations on water and air pollution as well as the City's Ordinances on environmental protection while taking into consideration the global challenge of addressing the impacts of climate change. Before, she was the Executive Director, Task Force Clean & Green, Quezon City Government, 1999-2002. The EPWMD under her Stewardship was awarded with 2015 LGU Eco Champion, under the National LGU Eco Champions Project of Green Convergence and Kagawaran ng Kapaligiran at Lakas Yaman; 2014 National and Regional Environmental Compliance Audit (ECA) Award of the DILG, for the government's level of compliance to the six key legal provisions of Republic Act 9003 or the Ecological Solid Waste Management Act of 2000.

**Mr. Nisar Ahmed** is the Coordinator of the Project Implementation Unit, Provincial Disaster Management Authority (PDMA), Pakistan. He is a Disaster Risk Management and Disaster Risk Reduction expert. He joined the PDMA, Government of the Punjab in 2010 after a rigorous selection procedure. In 2016, he was assigned the responsibility for the initiation and implementation of two integral international projects: Disaster and Climate Resilience Improvement Project (DCRIP) and Flood Emergency Reconstruction & Resilience Project (FERRP) funded by World Bank and Asian Development Bank (ADB) respectively. Mr. Ahmed is a committed professional, and a permanent officer of this organization with 9 years + diversified experience and vast practical institutional knowledge in the field of Disaster Risk Reduction (DRR), Disaster Risk Management (DRM) and Multi-Hazard Vulnerability and Risk Assessment (MHVRA). He also represented the PDMA, Government of the Punjab at various National and International forums.

**Ms. Thess Khaz Raza** works for the Environmental Protection and Waste Management Department, Quezon City Government, as a Environmental Management Specialist II. She is experienced in local strategic urban planning, involved in both decision-making and project target-setting. She is currently focused on Quezon City Local Climate Change Action Plan 2017 - 2027, Urban Biodiversity Program for Quezon City, Sustainable Transportation, and Green Public Procurement for Quezon City. She has also done a series of consultancy services, conducted and attended seminars, workshops, and speaking engagements relative to Climate Change, Disaster Risk Reduction and Urban and Regional Planning, such as Comprehensive Development Planning Workshop for the Municipality of Taal, Batangas; Comprehensive Land Use Planning Workshop, for the Municipality of Dinalupihan, Bataan; Comprehensive Development Planning Workshop for the Municipality of Plaridel, Quezon Province; and Workshop on the Local Climate Change Adaptation and Mitigation Plan (LCCAP) for Quezon City.

## 51. How Teaching Affects Student Attitudes Towards the Environment and Sustainability in Higher Education: An Instructors' Perspective

Anastasia Misseyani, Christina Marouli, Paraskevi Papadopoulou

### ABSTRACT:

In the rapidly changing, 21st century globalized world, with increasing environmental pressures and challenges, education for the environment and sustainability is a priority at all levels -from kindergarten to higher education-. It is the education that will help create environmentally aware and socially responsible individuals, capable of addressing existing and future environmental challenges. Courses and degree programs on the environment and/or sustainability are now an essential component of the curriculum of all Higher Education Institutions with a sustainability vision. But, does teaching about the environment and sustainability lead to a change in student attitudes? What teaching and learning methods seem to have a more significant effect on attitudes and behaviors and what are the challenges for instructors? In this study, instructors reflect on which educational methods seem most effective in promoting change in student attitudes and behaviors towards the environment and sustainability. This reflection is based on instructor experiences from selected courses or course activities (learning objects) and it focuses on the goals, teaching methods and effect on student learning and attitudes; changes in student attitudes in the course of the last years are also discussed. Suggestions are offered and implications for higher education institutions are outlined.

*Keywords: education for the environment, education for sustainability, higher education, student attitudes, student behaviors, active learning, emotional engagement*

**Dr. Anastasia Misseyani** is Associate Professor of Environmental Studies at Deree - The American College of Greece (ACG). She holds a Chemistry degree from the University of Athens and graduate degrees in Biochemistry from the University of Paris 7 (DEA) and the University of Marburg (PhD). She has developed and taught a significant number of undergraduate natural science and environmental studies courses with emphasis on chemistry, biological chemistry, environmental science, ecology, water resources and methods in environmental analysis. She has research experience in the fields of protein-DNA interactions and gene expression. Her present research interests include Mediterranean biodiversity and green roofs, environmental health issues, sustainability initiatives in higher education, innovative teaching and learning strategies in STEM disciplines, active and experiential learning. She coordinated the development of the Deree Environmental Studies program and has served as its program coordinator since 2010. Since fall 2014, she serves as Head of the Department of Science and Mathematics. She has contributed to efforts and initiatives to promote sustainability at ACG.

**Dr. Christina Marouli** has an interdisciplinary background (Biochemistry, Urban and Environmental Policy, Sociology) around environmental and health issues and is now Associate Professor at Deree - The American College of Greece. She has extensive experience in environmental education / education



for sustainability in Higher Education, as well as a long experience as an environmental consultant on environmental and health issues and as a monitor of European funded environmental projects. At the American College of Greece, she founded the Center of Excellence for Sustainability in 2011, which she also directed until August 2017. In 2011, she was awarded a Fulbright award, in the context of which she did research on multicultural environmental education in collaboration with a Turkish professor. Her current research interests include sustainable and smart cities; education for sustainability, active and transformative learning, esp. in higher education; environmental behaviours and social change.

**Dr. Paraskevi Papadopoulou** is Professor of Biology at Deree -The American College of Greece. She holds Biology degrees from the University of California, Los Angeles and from the University of Athens and a PhD in Biophysics and Cell Biology from the University of Athens. She has served as Head of the department of Science, Technology and Mathematics at Deree -The American University of Greece. Her research interests are focused in the fields of Structural Biology/Molecular Biophysics and Bioinformatics, on structural and self-assembly studies of fibrous proteins, which form extracellular, proteinaceous structures of physiological importance like lepidopteran, dipteran and fish chorions. Model structures of chorion proteins and their interactions have been proposed. She has also contributed to the development of genetic testing protocols for genetic diseases such as Tuberous Sclerosis and of Neurofibromatosis type 1. Her current research engagement is on Environmental Health Issues, Sexually Transmitted Diseases, Mediterranean biodiversity and green roofs, in addition to Higher Education research and innovative ways of teaching and learning in STEM disciplines plus on big data analytics in Bioinformatics and Medicine.

## 52. Sustaining Healthcare: Bridging Education with Biomedical and Healthcare Challenges

Paraskevi Papadopoulou, Anastasia Misseyanni, Christina Marouli

### ABSTRACT:

Major advances and breakthroughs in Medicine and Healthcare are transforming our world. How will we manage to tackle our disease burden to improve our day-to-day well-being especially in developed countries the global population of people over 80 will more than triple by 2050 and in the less developed ones the youth profile will escalate? Will Europeans as an example, find ways to balance budgets and restrain spending and come up with a sustainable survival strategy for Europe's healthcare systems? This paper addresses a number of challenging questions and offers "smart" solutions and a framework on how to develop and sustain new models of care and improve the public services profile with the vision to become globally leading healthcare institutions mainly in Europe and particularly in Greece. The nature of programs in biomedical and healthcare sciences, the kind of educators and healthcare professionals and how to technologically and practically support such programs is considered. How to connect Biomedical programs with Medical Centers and what kind of student internships can be developed is discussed. What it means to have patient-centered medical centers which abide by strict European and international guidelines and certifications and how to provide top quality medical services is also examined.

*Keywords: Digital Healthcare, Biomedical Programs, Patient-centered care, Sustainable development*

**Dr. Paraskevi Papadopoulou** is Professor of Biology at Deree-The American College of Greece. She holds Biology degrees from the University of California, Los Angeles and from the University of Athens and a PhD in Biophysics and Cell Biology from the University of Athens. She has served as Head of the department of Science, Technology and Mathematics at Deree -The American University of Greece. Her research interests are focused in the fields of Structural Biology/Molecular Biophysics and Bioinformatics, on structural and self-assembly studies of fibrous proteins, which form extracellular, proteinaceous structures of physiological importance like lepidopteran, dipteran and fish chorions. Model structures of chorion proteins and their interactions have been proposed. She has also contributed to the development of genetic testing protocols for genetic diseases such as Tuberous Sclerosis and of Neurofibromatosis type 1. Her current research engagement is on Environmental Health Issues, Sexually Transmitted Diseases, Mediterranean biodiversity and green roofs, in addition to Higher Education research and innovative ways of teaching and learning in STEM disciplines plus on big data analytics in Bioinformatics and Medicine.

**Dr. Anastasia Misseyanni** is Associate Professor of Environmental Studies at Deree - The American College of Greece (ACG). She holds a Chemistry degree from the University of Athens and graduate

degrees in Biochemistry from the University of Paris 7 (DEA) and the University of Marburg (PhD). She has developed and taught a significant number of undergraduate natural science and environmental studies courses with emphasis on chemistry, biological chemistry, environmental science, ecology, water resources and methods in environmental analysis. She has research experience in the fields of protein-DNA interactions and gene expression. Her present research interests include Mediterranean biodiversity and green roofs, environmental health issues, sustainability initiatives in higher education, innovative teaching and learning strategies in STEM disciplines, active and experiential learning. She coordinated the development of the Deree Environmental Studies program and has served as its program coordinator since 2010. Since fall 2014, she serves as Head of the Department of Science and Mathematics. She has contributed to efforts and initiatives to promote sustainability at ACG.

**Dr. Christina Marouli** has an interdisciplinary background (Biochemistry, Urban and Environmental Policy, Sociology) around environmental and health issues and is now Associate Professor at Deree - The American College of Greece. She has extensive experience in environmental education / education for sustainability in Higher Education, as well as a long experience as an environmental consultant on environmental and health issues and as a monitor of European funded environmental projects. At the American College of Greece, she founded the Center of Excellence for Sustainability in 2011, which she also directed until August 2017. In 2011, she was awarded a Fulbright award, in the context of which she did research on multicultural environmental education in collaboration with a Turkish professor. Her current research interests include sustainable and smart cities; education for sustainability, active and transformative learning, esp. in higher education; environmental behaviours and social change.

## 53. Intercultural Education for Sustainable Development in the Perspective of Pre-service Teacher Education in Poland

Aneta Rogalska-Marasińska

### ABSTRACT:

The paper discusses the participation of intercultural education in the school practise under the aim of preparing each student to live in accordance with the sustainable development principles. The most important educational task is to prepare teachers to help their students to develop multicultural attitudes and their will to intercultural cooperation and communication. Teacher's intercultural competence in the context of up-to-date EU key competences of life-long learning will be presented as a holistic competence which embraces many specific skills, knowledge, and attitudes, known as teacher's competences for sustainable development. Such endeavour demands multidimensional teacher and student-teacher training. The paper will present the application of learning method inspired by the book of S.L. Robbin - What if? Short Stories to Spark Diversity Dialogue (2008). During university classes students of 3rd stage/postgraduate studies have been developing their intercultural and sustainable development competences by harnessing their imagination in creation of stories with multicultural aspect and sustainable perspective. Samples of results of their creation will be discussed during the presentation. The main aim of such divergence thinking creation workshops is to spark future teachers' interest and curiosity to implement their sustainable development attitudes into their work with school children or youth from other educational institutions.

*Keywords: intercultural education, sustainable development principles, intercultural cooperation and communication, EU key competences of life-long learning, teacher's competences for sustainable development, creation of stories with multicultural aspect and sustainable perspective, divergence thinking*

**Aneta Rogalska-Marasińska**, PhD Assoc/Prof., is a musician and pedagogue. She works at the Faculty of Educational Sciences of the University of Lodz, Poland, as an adjunct at the Department of Theory of Education (Division/Sub-Department of Comparative Education). She concentrates on a circle of theoretical and research activities which refer to interdisciplinary problems of intercultural dialog, intercultural education, and humanistic and aesthetic education. She tries to embrace them in widely understood general didactics, updated by multicultural challenges, which knock at the door of contemporary education. Her latest field of scientific exploration is the idea and practice of uncovering mutual problems of sustainable development and multicultural society. In that optics, intercultural education and education for sustainable development should lead to conviction that sustainable development is our common subject of concern. Only a multicultural alliance may effectively help to realize the need of sustainable development.

## 54. E-learning Modules on Climate Change Adaptation in Saxony-Anhalt (Germany)

Alina Schürmann, Anne-Kathrin Lindau, Gerd Schmidt, Patrick Illiger, Christopher Krause

### ABSTRACT:

Regarding the predicted precipitation and temperature development for the federal state of Saxony-Anhalt (Germany), the demands on climate adaptation are increasing. The E-Learning platforms "MLU-BIKAB" and "MLU-BIKASA" therefore focus on sensitizing different stakeholder groups (educational and agricultural sector) to the regional and local impacts of climate change and necessary adaptation strategies. The aim is to combine the possibilities of conventional classroom learning with web-based learning units. Hence, the project's results are implemented as a Rich Internet Application (RIA) in a modular e-learning platform, allowing sustainable use in German-speaking countries. Regional case studies serve as training objects, which are presented in web-based learning modules as well as in lecture series or science camps. Additionally, virtual landscape models, augmented reality applications or interactive maps are generated for selected processes in the context of climate change, which are supplemented by simplified simulations. The educational concept focuses not only on the visualization of directly perceptible structures (such as snow cover), but also on the representation of non-observable processes (e.g. soil water). The web-based teaching and learning methods are developed for a usage within blended learning models and to support individual learning under the consideration of previous knowledge. Furthermore, the subjects of the e-learning tools can be transferred to other dry regions of Germany.

*Keywords: Climate Change Adaptation, E-Learning, Blended Learning, Rich Internet Application*

**Alina Schürmann** is a research associate at the Martin Luther University Halle-Wittenberg (Germany) in the Institute for Geosciences and Geography. She holds a Bachelor Degree in Geoecology and a MSc in Geography with specialisation in geoinformatics. She is part of the MLU-BIKAB project, which focuses on the development of e-learning modules for adaptation to climate change.

**Dr. Anne-Kathrin Lindau** is lecturer in the Didactics of Geography at the Institute of Geosciences and Geography at the Martin Luther University Halle-Wittenberg. Her research interests are modern technologies in teaching as well as outdoor education.

**Dr. Gerd Schmidt** is Senior lecturer in the Department of Geoecology at the Institute for Geosciences and Geography (Martin Luther University Halle Wittenberg). His research interests include the analysis and assessment of land use impacts on water and soil, the development of adaptation strategies and methods as well as capacity building.

**Patrick Illiger** is a research associate at the Institute of Geoscience and Geography at the Martin-Luther-University Halle-Wittenberg, Germany. He is part of the BIKASA project-staff, working on innovative tools for further education measures on climate adaption in the agricultural sector.

**Christopher Krause** studies Geography at the Martin-Luther-University Halle-Wittenberg, Germany. He is assisting researchers in different projects developing e-learning tools.

## 55. How to Bridge Research and Application for Sustainable Development at Higher Education Institutions: Introducing HOCH<sup>N</sup>

Claudia Thea Schmitt, Alexander Bassen, Georg Müller-Christ

### ABSTRACT:

This paper introduces the German collaboration HOCH<sup>N</sup>: “Sustainability at Higher Education Institutions: develop – network – report” as a case study example of how to bridge research and application for sustainable development. HOCH<sup>N</sup> is funded by the German Ministry of Education and Research (BMBF) and aims at promoting sustainable development in universities according to a whole institution approach. HOCH<sup>N</sup> serves as an inter- and transdisciplinary peer-learning network on systematically implementing sustainability-related initiatives and measures in universities’ various fields of action such as governance, reporting, teaching, research, transfer/third mission and operations. Purpose of this paper is to present an overview of the work done so far by the HOCH<sup>N</sup> consortium, including the development and testing of guidelines for each of the fields of action mentioned above, as well as a digital map for university initiatives on sustainability (cf. [HOCH<sup>N</sup> website](#)). Moreover, suggestions and requirements of how to scale up whole institution approaches for sustainable development at universities on an international level are discussed.

*Keywords: Whole Institution Approach; Higher Education Institutions; Case Study*

- Dr. Claudia T. Schmitt** is Managing Director and Scientific Coordinator of the Center for a Sustainable University (KNU) at Universität Hamburg. Head of the German HOCH<sup>N</sup> Collaboration (together with Alexander Bassen), Member of the Leading Group for implementing Education for Sustainable Development in the City State of Hamburg, Board Member of the Hamburg Climate Week and co-founder of the Hamburg Alliance for Sustainable Development at Higher Education Institutions. As an organizational psychologist Claudia has done research on transformational leadership, innovation processes and value-based behavior change. She recently edited a book on Psychology and Sustainable Development and initiated the first Hamburg Sustainable Development Summit (HSDS). Based on her inter- and transdisciplinary research work, Claudia’s professional field of application is human resource and organizational development for innovation and sustainability.
- Prof. Dr. Alexander Bassen**, Universität Hamburg, is a full professor of capital markets and management at the University of Hamburg, Faculty of Business, Economics and Social Science (Germany) and director of the KNU. He teaches courses in finance and investment, ESG and capital markets and reporting. Alex is a member of the German Council for Sustainable Development - advisory body of the German Federal Government, member of the UN PRI Academic Network Advisory Council, Honorary Research Associate, Smith School of Enterprise and the Environment (University of Oxford), member of the Commission on Environmental, Social & Governance Issues (CESG) of the European Association of Financial Analysts Societies (EFFAS) as well as member of several other advisory committees.
- Prof. Dr. Georg Müller-Christ**, Universität Bremen, Chair of Economics and Sustainable Management and Head of Virtual Academy for Sustainability. Spokesperson of Working Group “Higher Education Institutions” at Germany’s national platform on Education for Sustainable Development and in charge of the HOCH<sup>N</sup> units for Networking (together with Claudia Schmitt) as well as Teaching. His research focus lies on systemic transformation processes and constellation techniques as learning methods.

## 56. Desires and Doubts Around Sustainable Cultural Diversity in Education

Tahera Afrin

### **ABSTRACT:**

The paper is based on an Mphil research completed by the researcher last year in the context of Aotearoa New Zealand. The project was aimed to find out the components of culture and their impacts on ako (teaching-learning) within the early childhood teacher education programmes. While there are a number of research projects related to diversity in early childhood education with regard to children, very few are from the perspective of teacher education. This study was intended to contribute to this gap. Under a socio-cultural theoretical framework, twelve lecturers from three Tertiary Education Organisations (TEOs) were interviewed. Three cohorts of student teachers from the same TEOs participated in focus groups. Using manual thematic coding, nine broad areas of cultural components were identified. These are bicultural contexts of Aotearoa, ethnicities and multi-culturalism, individual identities, cross-cultural interactions, comfort zone, female majority, socio-economic struggles, spirituality and technology. The paper will aim to examine each of these areas in relation to cultural sustainability. While the data are contextual to Aotearoa New Zealand, the discussion will include the overall global trends in relation to education.

*Keywords: Cultural diversity*

**Tahera Afrin** is a teacher educator for early childhood education (ECE). She is the current Programme Leader for ECE programmes at the ICL Graduate Business School, Auckland. She studied Education and Research at the University of Dhaka, Bangladesh; Massey University, Auckland and Auckland University of Technology (AUT), New Zealand completing M. Ed and MPhil qualifications. She has been actively engaged in research and scholarship of teaching with a number of presentations and publications. She led several organisational research projects investigating the tension between cultures in the classrooms, both for international and also for Maori and Pasifika learners. Her research interests are impact of culture in the process of Ako, the adult learners and their diverse needs, and transition of curriculum and professional growth of learners as early childhood educators.

## 57. Higher Education Institutions as a Transformation Platform under the Sustainable Development Goals Framework

Inés López López, Marcos Alonso Bote Díaz, Joaquín Longinos Marín Rives, Alicia Rubio Bañón

### ABSTRACT:

Previous research has highlighted the critical role of Higher Education Institutions (HEI) in promoting sustainability. In this vein, HEI, as a driving force of change, should actively participate in the diffusion and dissemination of the Sustainable Development Goals proposed by the United Nations. Thus, HEI must boost SDG's attainment both internally, through research, teaching, arts, and curricular programs, and externally, by providing a platform where different stakeholders such as firms, NGOs, public administrations, professional associations,... meet and create strategic alliances. A Spanish university has implemented a two-year project called "ODSesiones" where different actors (more than 20 faculties; the students council, representing more than 30,000 students; more than 50 NGO's) are already working jointly in the pursuit of the SDGs. The aim of this project is two-fold. First, we intend to increase awareness of the SDGs among members of the university and, second, we want to exert an effective social impact by promoting intervention activities proposed by NGO's and schools. The university devotes one month to each of the 17 SDGs. Lectures, art exhibitions, workshops, volunteering programs,... enable tackling the SDG in focus from different perspectives and contribute to its achievement. As a result, we expect more favorable attitudes towards the SDGs and a behavioral change among university members and citizens in general.

*Keywords: Sustainable Development Goals, Higher Education Institutions, NGO's, awareness, social transformation*

- Dr. Inés López López** is an Assistant Professor of Marketing at the University of Murcia, Spain. She holds a PhD in Marketing from the same institution. She teaches Market Research and Marketing Management. Her research has been published in such journals as *Journal of Service Research*, *Internet Research*, *Marketing Letters*, *Electronic Commerce Research and Applications*, *Frontiers in Psychology*, and *Ecological Economics*. Her current research interests include consumption-related emotions, social commerce, corporate social responsibility and sustainable development.
- Dr. Marcos Alonso Bote Díaz** is an Assistant Professor of Sociology at the University of Murcia, Spain. He holds a PhD in Sociology from the same institution. He teaches courses in the field of Sociology of Education and Sociological Research. Previously, he was awarded with post-doctoral fellowships at the University of Surrey (Marie Curie TN-UK), Portland State University and UCLA (Mec-Fulbright, USA). His papers have been published in international journals such as *Plos One*, *Social Science and Medicine* and *Sociological Research Online*. His current research interests are sociology of health and aging and sustainable development.
- Dr. Joaquín Longinos Marín Rives** is an Associate Professor of Marketing and Vicerrector for Social Responsibility and Transparency at the University of Murcia, Spain. He holds a PhD in Marketing



from the same institution. His research has been published in journals such as Journal of Business Ethics, Frontiers in Psychology, Sustainability,... His current research interests include Corporate Social Responsibility, Strategic Management and Sustainable Development. He leads the ODSesiones project.

**Dr. Alicia Rubio Bañón** is an Associate Professor of Marketing and Vicerrector for Employment, Entrepreneurship and Society at the University of Murcia, Spain. She holds a PhD in Management from the same institution. Her research has been published in journals such as Journal of Business Ethics, Corporate Social Responsibility and Environmental Management. Her current research interests are management research and corporate social responsibility.

## 58. Governance, Ownership and CSR: Evidence from Romania

Cosmina Lelia Voinea, Cosmin Fratostiteanu, Bas Romein

### ABSTRACT:

This study investigates the relationship between corporate governance, ownership structure and CSR activities in Romania. The results of this study allows corporates and the public to formulate a well substantiated opinion on the way particular organizations carry out their businesses in Romania regarding CSR where CSR practices reflect culture and are partially county and ownership specific. The CSR practices implemented in Romania may not always reflect the societal views but rather the public ownership / government views, on what is thought to be important.

*Keywords: corporate governance, ownership, emerging economies, Romania, corporate social responsibility*

**Dr. Cosmina Lelia Voinea** is assistant professor of Strategy and International Business at the Faculty of Management, Science and Technology of the Open University of the Netherlands. Cosmina devotes her research to understanding the mechanisms of market and non-market influences on sustainable management practices and organizational responses to such influences specific both to organizational internal dynamics as well as external institutional contingencies. Her work has been disseminated through presentations at academic international conferences and international publications such as Scandinavian Journal of Management, Management International Review. Her academic and reviewer performance has been recognized by several awards including Best Paper award received from Strategic Management Group.

**Dr. Cosmin Fratostiteanu** is associate professor of Business Administration at University of Craiova, Faculty of Economics and Business Administration. He obtained his PhD degree in 2003 in the field of International Economic Relations on the topic of "The effects of economic globalization on Romania's international transactions". Relevant research topics for his specialization: risk management, international transactions, negotiation and international contracting, performance and competition in the context of the globalized economy.

**MSc. Bas Romein**, Manager Hub Operations at ASML (Netherlands)

## 59. CSR Communication in Problematic Sectors – the Example of Hungarian Brewers

Melinda Majláth, Pascal Ricordel

### ABSTRACT:

CSR reputation indices (like MSC KLD400, Dow Jones Sustainability Index) exist in such form which exclude companies operating in ethically questionable industries like tobacco, gambling, nuclear power, adult entertainment or alcoholic drinks. However, drinking alcohol is a very important part of the European culture and is a tradition in many countries (for socializing and as a gift) even if in some cases it has very ambivalent judgment. Alcohol addiction, domestic violence, traffic accidents, serious health problems mean a real burden on the society. So the main question is how these companies try to legitimize their behaviour through their CSR actions? Structured, qualitative comparison of the CSR communication of the four biggest Hungarian brewers has been made. Information provided on the homepage is tested as the main and most easily available source for concerned customers. Significant difference can be seen among the examined brewers in their CSR activities and its communication. Some brewers which are subsidiaries of big international companies have CSR policy at corporate level but they are not actually translated it into local initiatives. The increased amount of alcohol-free beer offered and sold is a positive trend. Proving legitimacy of their activity is the central element of CSR communication, but responsibility-taking is mainly perceived as a role of the consumer or the employees but not for the company itself.

*Keywords: CSR, brewers, Hungary, qualitative comparison*

**Assoc. Prof., Melinda Majláth** (Ph.D in Management and Business Administration) works at Obuda University, Keleti Faculty of Business and Administration, Budapest, Hungary. Her main research focus is corporate social responsibility, environmentally friendly marketing and green consumer behavior. During 2006-2008 she worked for Hoffmann Research International (Budapest) as a quantitative researcher. She is the member of the Hungarian Economic Association and member of the public body of Hungarian Academy of Sciences.

**Pascal Ricordel** (Ph.D in Economics, Paris I Pantheon-Sorbonne) is Associate Professor at Université Le Havre-Normandie in Business and Administration Management Department. His main fields of research are Regional policies and Urban Governance and Regeneration. As member of Regional Studies Association, he organized an international workshop in 2013 in Le Havre upon Cities Regeneration Process. As Head of a Bachelor formation in International Corporate Finance from 2006, He has also been developing a strong interest upon Corporate finance topics, especially related with Return, Sustainability and CSR issues. He is a member of EDEHN laboratory, he is a member of AFEP, Association Française d'Economie Politique.

## 60. The Stage of Corporate Social Responsibility in EU-CEE Countries

Irene Guia Arraiano, Camelia-Daniela Hategan

### ABSTRACT:

In European Union the importance of Corporate Social Responsibility reporting is increasing, because 2017 is the year in which the CSR reporting of large companies passes from the voluntary to the mandatory stage according to the requirements of the European Directive 2014/95/EU. In this context, this paper aims to examine the stage of Corporate Social Responsibility in Central and Eastern European Countries members of European Union, in accordance with Global Reporting Initiative which is consistent with globally recognised criteria worldwide, in the period 2002-2018. A critical analysis of the quality of the reporting was performed, looking at whether it has improved over the previous year and whether it respects legal requirements, and whether the communicated information is useful to the stakeholders. Base on literature review it was found that there is a gap of Corporate Social Responsibility's reporting research to Western European countries. The results show that the evolution of reporting practices has improved over the years for the all countries and the most reports are prepared by multinationals companies. Thus we can see how companies react to regulatory requirements and other government demands.

*Keywords: Corporate Social Responsibility, reporting, Global Reporting Initiative, Central and Eastern European Countries, quality*

**PhD Irene Guia Arraiano**, in Financial Economics and Accounting, is a Professor in Lisbon Accounting and Business School, Polytechnic Institute of Lisbon, Portugal. Irene Arraiano wrote her PhD-thesis about –Analysis of Socially Responsible Investing in European Stock MarketsI. She earned her Bachelor and Master's in Applied Mathematics- Statistics and Operational Research at the Faculty of Science at the University of Lisbon. She is Head and Professor of the Department of Quantitative Methods and Operational Research and currently teaches Operational Research. Irene Arraiano' research focuses on Finance, Corporate Social Responsibility and Socially Responsible Investing where is the Research Coordinator of –The Performance of Socially Responsible Investments in GIIPS countries: Impact of the financial crisisI project. She participated in national and international conferences as well as publishes in international academic journals. She has reviewed many articles for relevant journals indexed in Web of Science.

**Phd Camelia-Daniela Hategan** is an Associate Professor in the Department of Accounting and Audit at the Faculty of Economics and Business Administration, West University of Timisoara, Romania, and from February 2018 Doctoral Supervisor in Accounting domain. Camelia has published many articles in both professional and academic journals. Her current research focuses on accounting, financial and non-financial reporting, financial audit and entrepreneurship in the accounting profession. She has presented a great number of papers in these fields in scientific journals and conference proceedings also she has been participating in multiannual grants as a director or as a member. Recent publications include articles on corporate social responsibility. She has reviewed many articles for conferences and relevant journals indexed in Web of Science.

## 61. Stakeholder Engagement and Responsible Research & Innovation in Promoting Sustainable Development and Empowerment through ICT

Kutoma Wakunuma, Tilimbe Jiya

### ABSTRACT:

ICT plays a significant role in both developed and developing countries across the globe. ICTs are also seen as playing an important role in achieving the UN's Sustainable Development Goals (SDGs). In particular, their importance is seen in terms of achieving sustainable development in the areas of health, education, social inclusion, global partnership and empowerment. However, much ground cannot be made without creating and involving communities and networks that will support the sustainable use and development of ICT in emerging and developing countries. One concept that advocates for inclusion of communities and establishment of networks around the use and development of ICT is Responsible Research and Innovation (RRI). At the core of RRI is the engagement of different stakeholders within communities and networks that are involved with ICT development in emerging and developing countries to ensure sustainable development. Using stakeholder theory, we introduce the work being conducted in the Responsible Research and Innovation Networked Globally (RRING) project to highlight the important role of RRI in the use and development of ICTs in emerging and developing countries. In particular, we will discuss how RRI can be understood in an emerging country like India, specifically through our discussion of a women's artisan handcraft centre known as Gramshree in the heart of Ahmedabad, India. We aim to highlight aspects of stakeholder engagement, the role of women and that of ICTs in their sustainable development and empowerment. The aim is to showcase how sustainable development and empowerment could be achieved through the formation of a global community network around ICT use and development.

*Keywords: Sustainable Development, RRI, ICT, Gramshree, SDGs, Empowerment, Stakeholder Engagement*

**Dr Kutoma Wakunuma** is a Senior Lecturer and Researcher at De Montfort University in the United Kingdom where she works within the Centre for Computing and Social Responsibility. Her main interest is in understanding the social and ethical aspects of ICTs on modern society. Her research interests are around ICTs for development, Ethics, Gender, Civil Society Organisations, Monitoring & Evaluation and Responsible Research and Innovation. She is programme leader on the MSc Computing course. She leads on a number of modules including ICT for Development, Responsible Research and Innovation in ICT and Research, Ethics and Professionalism in Computing. In addition, she also supervises PhD students. She is also involved in a number of EU funded projects where she has also taken leadership on.

**Dr Tilimbe Jiya** is Research Fellow and Lecturer at the Centre for Computing and Social Responsibility, De Montfort University. He holds a PhD in Project Management, and his research interests include project evaluation, stakeholder engagement in ICT projects, responsible innovation, ethics of computing and sustainable development in emerging countries.

## 62. The Implementation of *Buen Vivir* in Ecuador: An Analysis of the Stakeholders' Discourses

Lucile Marchand

### ABSTRACT:

*Buen vivir* is a central notion in Ecuador and was introduced in its Constitution in 2008. On the individual level, this notion describes a multidimensional form of well-being, integrating strong cultural and ecological aspects based on indigenous communities' knowledge. On the national scale, *Buen Vivir* is the key notion of public policies and justifies an intervention of the state in all dimensions of sustainable development. The implementation of *Buen vivir* in a developing country as Ecuador raises questions about several social and economic aspects. The aim of this paper is to identify all of these challenges that such a transition implies. To do so, this paper uses a qualitative and multidimensional approach based on 38 semi-directive interviews with stakeholders of the policy implementation of *Buen vivir*. The interview grid was divided into four parts: (i) individual characteristics, (ii) definition and implementation of *Buen vivir*, (iii) the extractivism in Ecuador and (iv) the challenges of the transition between two models of development. The preliminary results identify two major challenges. Firstly, the main challenge is the governance of this major transition and the issue of corruption in Ecuador. Secondly, these interviews show that education is the most central dimension to implement *Buen vivir* correctly.

*Keywords: Buen vivir, sustainable development, developing countries, representations, public policies*

**Lucile Marchand** is a PhD Candidate at GREThA - University of Bordeaux, France. Her main fields of research include sustainable development for developing countries and the ethic, social and economic challenges that this implies.

## 63. Is Listed Corporates Financial Performance Sustainable? ROE Factors Measurement Using DuPont Formula

Pascal Ricordel, Melinda Majláth

### ABSTRACT:

It's been 10 years since the last financial crisis, and the fast rising in stock market price along with record dividends raises deep concerns about the sustainability of listed corporate financial performance. Has the logic of shareholder value been compromising stakeholder interest? In the literature, the analysis of value drivers like the governance system, CSR standards, high financial results have been emphasized. We state here that the empirical study of the return on equity (ROE) drivers sheds some light on the sustainability issue. A disaggregated six-step DuPont equation is used to set up following drivers: operational profitability, price power, capital productivity, leverage, interest and fiscal burden. We apply a data panel multiple linear regression upon a sample of 49 international non-financial corporates from France, Germany, Hungary and Italy that have been studied between 2012 and 2017. The results stress the role of operational profit and price power as the main ROE drivers. Leverage and fiscal drivers, consensually considered as unsustainable, had played a minor role. The drop of capital productivity is the more worried signal as this factor is considered as the more sustainable. The study shows how corporate accounting data could be used for the sustainability issue either for scholar or practitioner.

*Keywords: ROE components, DuPont Equation, Financial Sustainability, Listed Corporate Performance, Financial Reporting*

**Pascal Ricordel** (Ph.D in Economics, Paris I Pantheon-Sorbonne) is Associate Professor at Université Le Havre-Normandie in Firm and Administration Management Department. His main fields of research are Regional policies and Urban Governance and Regeneration. As member of Regional Studies Association, he organized an international workshop in 2013 in Le Havre upon Cities Regeneration Process. As Head of a Bachelor formation in International Corporate Finance from 2006, He has also been developing a strong interest upon Corporate finance topics, especially related with Return, Sustainability and CSR issues. He is member of EDEHN laboratory, he is a member of AFEP, Association Française d'Economie Politique.

**Melinda Majláth** (Ph.D in Management and Business Administration) is Associate Professor at Obuda University, Keleti Faculty of Business and Administration, Budapest, Hungary. Her main research focus is corporate social responsibility, environmentally friendly marketing and green consumer behavior. During 2006-2008 she worked for Hoffmann Research International (Budapest) as a quantitative researcher. She is the member of the Hungarian Economic Association and member of the public body of Hungarian Academy of Sciences.

## 64. Waste Management and Collaborative Recycling: An SDG Analysis for a Circular Economy

Kartikeya Durrani

### ABSTRACT:

The designated proposal has been a rather globally developing topic and factually alarming according to opined and definitive sources as mentioned in my final submission. Primary sources have indicated and formulated a sharp rise in the global waste produce by 70 per cent nearing 2049, along with clogging waterways, drainage passages and damaging waste-transporting infrastructure. Consolidated efforts which are necessary, certain factual implementations are also further mentioned in the submission, citing primary authorities. The collaborative recycling factor being as important as the pummeling of action which, is attributed according to how vicarious liability flows within an organization, contributing to how the most waste producing countries should take charge by coming together and joining forces. This submission also outlines and draws out how organizational-level responsibility must be implemented while accounting and moving forward with responsible waste management. It also highlights Properly disposing waste along with organic solid waste management programs which will work both ways, in the first way, it will help in supporting major waste producing countries through elemental waste reduction and recycling programs, and in the second way, help in educating the uneducated sections of the society on how to properly minimize food waste. Paving smooth budgetary transitions through recycled material and in turn, creating a circular economy which would fund itself, in a glacial but an efficient pace, thus, powering various global waste management programs, ventures, expeditions and implementations has also been critiqued and quiet evenly disseminated in the submission.

*Keywords: Waste management, recycling, sustainability, toxic, environment, impact*

**Mr. Kartikeya Durrani** is a fourth year student of B.A. LLB (Hons) of Hidayatullah National Law University (HNLU), Raipur, Chattisgarh. In the month of December 2015, He interned at Environics Trust, a not for profit organisation, that works with marginalized communities adversely affected by mining and industrialization. This internship helped me to explore the National Green Tribunal Act. He also got an opportunity to observe one of the NGOs case at the Tribunal which was based upon asbestos mining and its affects. This graduate fellowship helped him to discover the field of social work within communities. He has previously worked under Deputy Advocate General, Punjab-Haryana High Court, AOR (Advocate-on-record) Mr. Raj Kamal for the month of December, 2018 and has researched on a variety of cases pertaining to both civil and criminal nature, showed extensive skill in drafting and filing of various legal documents such as Special Leave petitions, Arbitration Applications, written statements, etc, Drafted various agreements related to builder-buyer contracts, Home Buyer contracts, etc, was also actively involved in compiling various judgements along with preparing case notes of legal documents altogether, required for further briefing. Mr. Durrani has also worked under Titus & Co. (A boutique law firm with a leading Italian and American clientele) during which he researched extensively on the issues of subject matters in relevant provisions of Company Law, Tax Laws, Criminal Law, International Law and Intellectual Property Law, Also, drafted various pleadings including Legal Notices and Opinions along with assisting Associates, Senior Associates and Members for working on the legal matters. Attended several client meetings to understand and prepare various case matters. Also, Attended and observed various case proceedings at the Patiala House District court (New Delhi)



in the similar tenure and capacity. In the month of December 2017, Mr. Durrani pursued his graduate fellowship under the guidance of AOR (Advocate-on-record) Mr. Prasenjit Keswani, acquiring experience from matters regarding Alternative Dispute Resolution, Commercial Arbitration, Civil and Criminal Matters. I was also exposed to the understanding of finer details of matters pertaining to Hon'ble Supreme Court of India, Delhi High court, and National Consumer Disputes Redressal Commission. He also worked under Kamath and Kamath Associates, Bangalore during May and June 2017. I received hands on experience in understanding various Laws and Acts while researching extensively on the range of cases and issues. He was also instrumental during the court proceedings of High court of Karnataka, Metropolitan Magistrate Court and Civil Court. Mr. Durrani also interned at the Patiala House District court in the month of May 2016 under the guidance of Adv. Shri S.C. Koul and regularly visited Tis Hazari and Patiala House District courts to observe the proceedings and understand the practical aspects of our legal system. Additionally, He is currently an active member of the moot court committee of Hidayatullah National Law University. He has represented his college, HNLU for debate competition in Kirorimal College, Delhi. Besides academic participation, He attended OP Jindal college, Sonapat festival where he got a special mention by the judge in group theater competition. He also participated in the National University of Juridical Sciences, Kolkata cultural festival where he stood second in the quiz competition. Before joining HNLU, Raipur, he studied in various schools including Hong Kong Academy, Hong Kong, Scindia School, Gwalior and Millennium School, Noida which inculcated a sense of adaptability and team spirit in him due to exposure to diverse cultures and educational institutes.

## 65. Implementation of the Construction and Demolition Waste Management Rules (2016) in India: Assessment of Barriers to Recycling

Abhijit Banerjee, Rachna Arora, Reva Prakash

### ABSTRACT:

Construction and demolition (C&D) waste is poorly managed in India with widespread unauthorized dumping creating environmental problems. Recycling C&D waste can provide vital secondary raw materials to the construction sector, relieving pressure on virgin resources. Recognizing this, the Government of India (GoI) notified the C&D Waste Management Rules in 2016, mandating bigger cities to adopt a recycling program within 3 years. However, implementation of successful C&D waste management has been extremely limited so far. Under the European Union Resource Efficiency Initiative for India (EU-REI), a municipal capacity development program on C&D waste management was implemented. Workshops were conducted in 8 regional hubs covering 50+ municipalities over several months to understand challenges and impart training. The workshops revealed that despite initiating planning and capacity building, progress towards establishing C&D waste management has stalled in most cities due to several barriers. These include land availability, personnel/capacity constraints, concern about finances/business case, lack of confidence in recycled products, among others. Policy recommendations such as targeted handholding assistance to cities, state-level facilitation, certification and public procurement of recycled products, etc., were presented to the GoI with the goal of a focused push as part of a broader National Resource Efficiency Strategy.

*Keywords: Construction and demolition (C&D) waste, recycling, resource efficiency, circular economy, urban mining, India*

**Dr. Abhijit Banerjee** is Associate Professor of Environmental Studies under the School of Liberal Arts & Humanities at O. P. Jindal Global University, India. His teaching and research interests include environmental and energy policy, resource sustainability, and environmental justice. He has more than a decade of academic experience in the USA; in recent years he has worked on projects with GIZ, EU and the UN in India.

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## 66. Effective E-Waste Management: A Panacea for Green Economy in Nigeria - Enablers and Barriers

Kayode Abdul-Haki Olaniyan

### ABSTRACT:

The unreliable power supply from the National Grid in Nigeria has led several organisations seeking alternative power support solutions. One of these power supply sources is the UPS (Uninterruptible Power Supply). These UPS systems attain their end of life rapidly due to shortened lifecycle, obsolesce associated with new product development and technological innovations. This has led to a vast increase in the amount of WEEE (Waste Electrical Electronic Equipment) generated in the country which often times are haphazardly stored disposed and due to perceived potential economic value of these WEEE; amongst other reasons. This lack of safe and appropriate disposal and recycling cause environmental menace to the communities' due to the hazardous chemicals that these equipment contain. This study aims to investigate, analyse and elucidate the factors which drives or hinders corporate organisations in Nigeria to harness the EPR (Extended Producer Responsibility). The concept of WEEE management initiative was elucidated whilst using operation strategy tools to explore the drivers and benefits of adopting reverse logistics in the collection of WEEE by a supplier of UPS systems in Nigeria in order to appropriately manage the e-wastes. The methodology involved data collection in the mode of semi-structured interviews with 30 SMEs and 10 MNEs that utilise these systems, a major supplier of UPS systems in Nigeria and experts in the field of environmental sustainability, logistics, supply chain and operation strategy for industry. Due to the unavailability of data on the recycling of UPS systems, a proxy (mobile phone) was used for knowledge transfer due to the similarities in components and recycling behaviour. This research revealed that perceived economic value, distrust/credibility, ignorance, cultural barriers, lack of formal recycling facilities and drop-off centres in addition to the availability of space as a result of large land mass area are some of the factors hindering the disposal of WEEE at the EoL (End of Life). Other factors such as gender, age as well as earnings in the form of company revenue were contributing influences to determine whether or not a firm will dispose their waste UPS systems at the end of life.

*Keywords: End of Life, EPR, WEEE, UPS, Reverse Logistics, Waste management*

**Kayode Abdul-Haki Olaniyan** is an environmental sustainability expert. In a country like Nigeria where environmental activism is deemed unpopular and un lucrative, Kayode founded a non-profit in called Avant-garde which convenes the Sustainability Table Discourse with a vision to solve socio-environmental problems emanating from climate change and the quest for a green economy. Kayode continues to passionately lead and inspire others on imbibing pro-environmental behaviour and ethical leadership. By imploring a train, the trainer approach, he believes that a multiplicity of actors getting involved in the mitigation of the effects of climate change is most beneficial for the environment. Kayode recently selected as an environmental expert for the development of Framework for a National Climate Change Legislation in Nigeria. This single legislation could potentially change the environmental sphere in Africa with numerous socio-economic benefits. The realization that most of the security issues bothering the country was a resultant effect of environmental degradation as observed with the oil spillage in the Ogoni land in

Niger Delta region of Nigeria and grazing issues leading the fulani herds men violence and communal clashed is a driving factor for him to channel his energy into the environmental sector. He has written numerous articles on waste management and renewable energy harnessing for low income households in Africa and continues to carry out research work in same.

## 67. Level of Sustainable Green Practices at Pantai 2 Sewage Treatment Plant, Klang Valley, Malaysia

Raman Mariyappan

### ABSTRACT:

The level of sustainable green practices (energy efficiency, indoor environmental quality, sustainable site planning & management, materials & resources, water efficiency and innovation) among developers is indeed an aspect that needs immediate attention in the non-residential projects in the Klang Valley, Malaysia. Sustainable green practices promotes positive activities that will ensure energy efficiency, water efficiency, fairness, effectiveness, divergence, less disparity, less discrimination, inexpensive, reasonable priced, pleasant design, serenity, mutual comfort and many other characteristics to the future for the construction industry. The developer must converge at a point where no one is short changed due to limitation in the implementation mechanism of sustainable green practices in the non-residential projects. The aim of this research is investigate the extent of sustainable green practices in the Pantai 2 Sewage Treatment Plant. In order to achieve the research aims, the specific objectives of this research is divided into the following sequential steps: identification of the existing sustainable practices implemented in Pantai 2 STP ; Model, assess and compare against common benchmarks the Energy Efficiency for the administrative building; Model, assess and compare against common benchmarks the Water Efficiency for the administrative building; and assessment of the replicability of the sustainable practices for other STP plants. Quantitative and qualitative design were used, in which a total of 381 public respondents with systematic random sampling were employed and a total of eight organizational sampling were used. Briefly the result shows evidence of existing level of energy efficiency, solar power panels for the parking bays, water efficiency from rain water harvest and the utilization of eco-park for public activities. Surprisingly, 87 percent of the respondents reported of not knowing the existence of underground sewage treatment plant at Pantai 2.

*Keywords: sustainable green practices, non-residential projects, developer, energy efficiency, water efficiency*

**Dr. Raman Mariyappan** is senior lecturer and Director of Environmental Management Unit, Department of Planning and Property Development, School of Government College of Law, Government and International Studies UNIVERSITI UTARA MALAYSIA. Head of Environmental Management, oversees the new post graduate programs which includes fine tuning the syllabus and marketing the program.

## 68. Sustainable Resource Management through Indigenous Knowledge and Practices – A Case of the Baiga Tribe in India

Sebastianus Lakra

### **ABSTRACT:**

India nurtures a tradition of rich civilization traceable from the antiquarian history and its primordial Indian village system. The linguistic relics, artifacts, rudiment tools and implements, skills of reading of the signs and seasons, mythic beliefs, tribal wisdom (sayings and proverbs), concepts and practices are foolproof of the existence of indigenous knowledge and practices. About 75% of global population is home to indigenous peoples and culture capable of deriving sustainable resource management. The knowledge of the local people tested over long period, adapted to local environment, then being passed down from one generation to another still has the carrying capacity of sustainable food security, health care, and ecological protection. The Baiga known for his cultural heritage, whose indigenous knowledge and practices is in transition but has relevance for sustainable resource management in resource depletion. The present work is an ethnographic study of the Baiga tribe in Dindori District of Madhya Pradesh, India where the researcher used participant observation method for cultural data collection. Open ended ethnographic interviews were conducted to the key informants.

*Keywords: Indigenous knowledge and practices, sustainable resource management, food security, health care, ecological protection, Ethnographic, participant observation*

**Dr. Sebastianus Lakra** is a Coordinator for Research and Documentation, XISA, Raipur (India). He had been Assistant Professor in XIDAS in the past. He has conducted a research thesis Indigenous Knowledge and practices of the Baiga Tribe in Dindori District of Madhya Pradesh.

## 69. Do the ISO 14001 Environmental Management Systems Influence Eco-Innovation Performance? Evidences from the EU Context

Stefano Brogi, Tamara Menichini

### ABSTRACT:

Eco-innovation has become a clear target of EU policy strategies. Consequently, detecting drivers of eco-innovation has become crucial to design effective eco-innovation policies. The paper focuses on the adoption of ISO 14001 standard, with the aim to investigate to what extent the ISO certification of Environmental Management Systems influences eco-innovation performance. A correlation analysis between data from European Eco-Innovation Scoreboard interactive tool (ECO-IS) reveals that, at EU country level, there is no a significant correlation between the number of ISO 14001 certified organisations and the level of some selected Eco-Innovation performance indicators. Both the number of companies that have developed innovations with environmental benefits and the number of patents in environmentally-related technologies are not significantly related to the number of companies with ISO 14001 certification. Similar results were obtained by considering only Eco-Innovation Leaders, that is EU countries with above-average Eco-Innovation Index values. These empirical evidences arise some questions and policy suggestions that will be discussed.

*Keywords: Eco-innovation drivers; Environmental Management Systems; ISO 14001 certification; Eco-Innovation Scoreboard; Eco-Innovation Index*

**Stefano Brogi** received master's degree in Management Engineering from the University of Rome "Tor Vergata". Now he's a technologist at Italian C.N.R. (National Research Council) and he's a PhD student at University of Roma "Niccolò Cusano". His main research interests regard: eco-innovation, sustainable industry, sustainability assessment and reporting, stakeholder engagement.

**Tamara Menichini**, Ph.D., is a postdoctoral researcher at the University of Rome "Niccolò Cusano". She received her Ph.D. in Economic and Business Engineering from the University of Rome "Tor Vergata". She is co-author of different international publications. Her main research interests regard: eco-innovation, corporate sustainability, corporate social responsibility, sustainability assessment, sustainability reporting, stakeholder engagement.

## 70. Bali Beef Quality after the Application of Liquid Smoke in Feed Block during Fattening

Effendi Abustam, Muhammad Irfan Said, Muhammad Yusuf, Nahariah

### ABSTRACT:

The use of liquid smoke as an antioxidant and binder in beef was done in the form of community empowerment in Tanete Riaja District, Barru Regency. This activity aimed to improve the skills Bali cattle breeder group in the application of livestock technology, especially the use of liquid smoke in animal feed. The feed was the primary need for livestock which in certain seasons faced difficulties in providing it. The implementation method was in the application of feed products in the form of multi-nutrient block liquid smoke urea (UKAMB). Three concentrations of liquid smoke were added to the feed, namely 0, 10, and 20%. The production of probiotic fermented rice straw was carried out as a source of fiber to complete feed entirely. The application of feed products was carried out on 12 male Bali cattle aged 2-3 years for 45 days. After the cattle are slaughtered, the parameters meat quality was water holding capacity (WHC), cooked meat shear force value, and cooking loss. The results showed that meat quality increased with increasing concentration and maturation time.

*Keywords: Bali cattle, fermented straw, liquid smoke, meat quality, UKAMB*

**Prof.Dr.Ir. Effendi Abustam**, M.Sc. is a professor and head of laboratory of meat and egg processing Hasanuddin University Makassar Indonesia. Former dean (1998-2002) of Faculty of Animal Science Hasanuddin University. His research about meat quality and how to preserve it from the decreasing caused by several factors of environment. One of this preservation is utilizing antioxidant friendly environment like liquid smoke.

**Dr. Muhammad Irfan Said** is a head of Laboratory of processing of animal by-product faculty of animal science Hasanuddin University. He is a participant of this conference as presenter with another topic. He works about how to increase value added of animal by product without decreasing of environment.

**Prof.Dr. Muhammad Yusuf**, M.Sc. is a Professor and vice dean of Academic Affairs, and Innovation of Faculty of Animal Science Hasanuddin University. He works about reproduction animal. How to increase the productivity of animal by implementation of reproductive technology of animal.

**Dr. Nahariah**, S.Pt. is a lecturer of Faculty of Animal Science Hasanuddin University. She works about egg science and it processing.



## 71. Domestication of Blue Swimming Crab for Sustainability; Genetic and Growth Changes

Yushinta Fujaya, Asmi Citra Malina, Andi Aliah Hidayani, Umi Kalsum

### ABSTRACT:

Blue Swimming crab is one of the fisheries resources that is currently threatened by sustainability due to over-exploitation. One of the efforts that can be done to save the blue swimming crab population is cultivation. For this reason, domestication is needed as an early step. The purpose of this study was to evaluate the genetic and growth changes of domestication Blue Swimming Crab (BSC). Research conducted since 2015 - 2017 in Hasanuddin University research pond, South Sulawesi, Indonesia. DNA examination using Random Amplified Polymorphism DNA (RAPD). The results showed that the domestication of BSC combined with fast growing selection resulted in significantly higher growth rates after the 4th generation. Carapace width of 1st generation after 100 days growing out was dominated by the size of 100 - 109 mm while the 4th generation was 110-119 mm. This changes may caused by the changes in the genetic structure. RAPD analysis results showed that the genetic distance after 4th generation is 0.3158 at 4th generation, 1st generation only 0.1053. The data from this study indicate that the blue swimming crab is very prospective to be developed as aquaculture animals to supply the increasing world market demand and the blue swimming crab remains sustainable.

*Keywords: Blue Swimming Crab, Sustainability, Domestication, genetic, growth, RAPD*

**Dr. Yushinta Fujaya** is Professor and head of Fish Hatchery Laboratory, Fisheries Department, Faculty of Marine Science and fisheries, Hasanuddin University, Makassar, Indonesia. She is a head of research group, where this study is to develop crab domestication and cultivation. Research on the cultivation of the mud crab in pond started since 1987 and crab breeding in hatchery began in 2001. Biological and genetic analysis is used to study the effects of various treatments. This study was conducted to evaluate the genetic and growth changes of Blue Swimming Crab domesticated after 4th generation. This research will provide recommendation for manager of aquaculture industry especially for crab.

**Dr. Asmi Citra Malina** is associate professor and lecturer at Fisheries Department, Faculty of Marine Science and Fisheries, Hasanuddin University, Makassar, Indonesia. She is interest on biotechnology and population genetics of marine, freshwater, and terrestrial species. She worked on many studies to understand the genetic diversity of various species of aquatic organisms. In this research group, she was instrumental in helping research designs, determining the primers to be used in Random Amplified Polymorphism DNA (RAPD), DNA analysis, preparing research tools, providing research material. In addition to this, she helped in the preparation of article writing, processing statistical data, and providing suggestion for improving grammars.

**Andi Aliah Hidayani**, M.Si is lecturer at Fisheries Department, Faculty of Marine Science and Fisheries, Hasanuddin University, Makassar, Indonesia. She is currently in a doctoral program in Hasanuddin University. She is interest on fish genetic and breeding. In this research group, she was instrumental in preparing research materials and tools, evaluating the biological data, and DNA analysis. She is responsible for the supply of material for the preparation of primer, extraction, PCR (Polymerase Chain Reaction), and electrophoresis. She is also play a role in processing this result data, giving an interpretation of Random Amplified Polymorphism DNA (RAPD) data, and prepare the manuscript.

**Umi Kalsum** is a student (degree program) at Fisheries Department, Faculty of Marine Science and Fisheries, Hasanuddin University, Makassar, Indonesia. She is interest in aquaculture and genetics. In this research group, she was play a role in maintaining the blue swimming crab on the pond, taking weighty data from the crabs, and collection the muscle for DNA analysis. She is also helping in preparation of DNA sample, PCR (Polymerase Chain Reaction), and electrophoresis.

## 72. Utilization of Poultry Slaughterhouse (PSh) Waste as a By-product of Protein Sources to Create the Environmentally Friendly Livestock Systems in Makassar City, South Sulawesi, Indonesia

Muhammad Irfan Said, Effendi Abustam, Wempie Pakiding, Muhammad Zain Mide

### ABSTRACT:

Livestock waste is one of the important problems in a livestock farming system. Various efforts were needed to reduce waste production. The use of waste is one of the solutions in reducing waste production to create an environmentally friendly livestock farming system. Utilization of livestock waste from PSh as feed ingredients for alternative protein sources can reduce the cost of feed use. This has an impact on a more efficient livestock business. The feather from the poultry contains high protein compounds. The application of waste from the poultry feather as a source of animal feed to improve the quality of quail meat has not been widely reported. The aim of the study was to examine the effect of giving feather waste extract (FWE) on the quality of thigh meat (Biceps femoris) for quail. A total of 100 heads of quails, male, were used as samples. A total of 4 types of FWE administration treatments have been applied. Four types of FWE treatment have been applied in this study, namely: (FA = 0%; FB = 1%; FC = 1.5% and FD = 2%). Each treatment unit was repeated 5 times with 5 heads of quail samples/treatment. The results showed that the application of FWE at different levels had a significant effect ( $p < 0.05$ ) on cooking loss (CL) and shear force (SF) of thigh meat (Biceps femoris), whereas in water holding capacity (WHC) it did not show a significant effect ( $p > 0.05$ ). The value of the WHC of thigh meat (Biceps femoris) is in the range of  $33.33 \pm 1.65\%$  -  $42.07 \pm 5.01\%$ , is in the range of  $0.40 \pm 0.05$  -  $0.93 \pm 0.18$  kg/cm<sup>2</sup> and the CL of  $6.10 \pm 2.70$  -  $19.90 \pm 4.51\%$ . An application of 2% FWE in feed mixtures showed better meat quality of thigh meat (Biceps femoris). An application of FWE as a protein source for animal feed can improve the environmental sustainability and create a more efficient livestock business.

*Keywords: Poultry slaughterhouse (PSh), By-product, Protein, Feather waste extract (FWE), Environmentally friendly*

**Dr. Muhammad Irfan Said** is associate professor and Head of Animal Production Department, Faculty of Animal Science. He is a Head of Laboratory of Waste Processing Technology and Animal By-Product, Hasanuddin University, Makassar, Indonesia. Head of research group, where this study is to evaluate the effect of the application of the use of feather waste extract (FWE) from poultry slaughterhouses (PSh) comprehensively as an alternative feed ingredient for quail livestock. The study was conducted experimentally by applying several treatments. This research will provide recommendations for managers of PSh industry and animal feed industry to process and utilize these wastes as a cheap and environmentally friendly source of protein.

**Dr. Effendi Abustam**, M.Sc is professor and Lecturer of Faculty of Animal Science, Hasanuddin University and Head of Laboratory of Meat and Egg Processing Technology, Hasanuddin University,

Makassar, Indonesia. In this study, he was responsible for evaluating some of the properties of quail meat which is fed from FWE. In addition, he also plays a role in processing the results data and giving an interpretation of the data. He is also responsible for meat samples that will be tested based on their competencies. The quail meat has special characteristics that require more careful analysis. He also plays a role in compiling articles for publication.

**Dr. Wempie Pakiding** is associate professor and Lecturer at Department of Animal Production , Faculty of Animal Science, Hasanuddin University. He is a Head of Laboratory of Poultry Production, Faculty of Animal Science, Hasanuddin University, Makassar, Indonesia. In this research group, he was instrumental in preparing research tools and materials specifically in providing experimental cages, providing research materials such as quail and concentrate feed. He was instrumental in evaluating the biological properties and responses to quail, which were consumed by FWE. In addition, it plays a role in helping to analyze data and provide results of data interpretation. He also played a role in writing articles and giving suggestions and improving grammar in this article.

**Ir. Muhammad Zain Mide, MS**, is associate professor and Lecturer at Department of Animal Feed and Nutrition, Faculty of Animal Science, Hasanuddin University. He is a Head of Laboratory of Animal Feed Industry, Faculty of Animal Science, Hasanuddin University, Makassar, Indonesia. In this research group, he was instrumental in providing FWE as a research material. FWE is produced through the hydrolysis process of feather waste in PSh. He is responsible for the supply of other materials for the preparation of concentrate formulations. In addition to this, he helped in the preparation of article writing, processing statistical data and providing suggestions for improving grammar.

## 73. Studies on Biodegradation of 4-Chlorophenol and 4-Nitrophenol by Isolated Pure Cultures

Apurba Dey, Priyanka Sarkar, Ananya Das

### ABSTRACT:

Metabolically versatile pure cultures were isolated from textile dye effluent and petrochemical industry which were able to utilize 150 mg/l of 4-chlorophenol and 85 mg/l of 4-Nitrophenol as the sole carbon and energy source respectively. On phylogenetic analysis based on 16 S rRNA gene sequence the strains were found to be *Bacillus cereus* HWB1 and *Pseudomonas taiwanensis* ECA e22 respectively. Optimization of physicochemical parameters were performed with Change of one variable at a time (COVT) approach. Optimized physical parameters for degradation by *Bacillus cereus* HWB1 was found to be 30 °C, pH 7 and 150 rpm whereas for *Pseudomonas taiwanensis* ECA e22 it was found to be 30 °C, pH 8.5 and 150 rpm. Supplementation of additional substrate such as yeast extract was found to increase the rate of 4-chlorophenol and 4-nitrophenol degradation owing to the increase in biomass production resulting to enhanced biodegradation. Biodegraded samples of these phenolic compounds showed negligible phyto-toxicity as compared to the untreated samples thereby proving that employing these pure cultures can help in mitigating environmental contamination by phenolic compounds in the near future.

*Keywords: Biodegradation, 4-Chlorophenol, 4-Nitrophenol, phylogenetic analysis, Pure culture*

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**Ananya Das**, Department of Earth and Environmental Science, National Institute of Technology Durgapur, M.G. Avenue, Durgapur: 713209, District: Paschim Bardhaman, West Bengal, India.

## 74. Behaviour of *Listeria Monocytogenes* in Pasteurization Milk during Refrigerator Storage

Ratmawati Malaka, Syahriani Sabil, Kusumandari Indah Prahesti, Farida Nur Yuliati

### ABSTRACT:

Milk is an excellent medium for the growth of microorganisms including *Listeria monocytogenes*. Some pathogenic bacteria can survive after pasteurization in milk, and these bacteria can contaminate again after storage. The purpose of this study was to determine the behavior of *L. monocytogenes* after pasteurization in refrigerator storage. Fresh milk is pasteurized at 75, 80, 85, 90 and 95 °C for one minute and stored at refrigerator temperature for one day, one week and two weeks. Characteristics of growth and total number of *L. monocytogenes* in *Listeria* Selective agar Base medium were observed. The results showed that the total number of *L. monocytogenes* at the control temperature before pasteurization was 7.91 (log cfu / ml). At pasteurization temperatures of 75, 80 and 85°C for one min, the number of *L. monocytogenes* bacteria were decrease to 5.83, 3.82 and 1.18 (log cfu / ml), respectively, whereas the total numbers of this bacteria on pasteurization temperatures of 90 and 95 °C were all listeria killed, but can grow back in refrigerator storage (4 °C).

*Keywords: Pasteurization, milk, Listeria monocytogenes, refrigerator storage*

**Prof. Dr. Drh. Ratmawati Malaka** is a Professor in the field of milk processing biotechnology who studies microbiology in milk and its products, in the field of milk processing. Currently he is the head of the Biotechnology laboratory of Faculty of Animal Husbandry, Hasanuddin University for milk processing and annually receives research grants from the ministry of research and technology of higher education, Indonesia.

**Syahriani Sabil** is a master program student in Science and Technology of livestock, who studies the field of bacteria that contaminates milk. She participated as a research team for the *Listeria* bacteria which is a pathogen that often contaminates milk and milk products.

**Drh. Kusumandari Indah Prahesti**, M.Sc. is a lecturer at the Faculty of Animal Husbandry at the University of Hasanuddin and a researcher in the field of microbiology and a team in the microbiology and animal health laboratories.

**Drh. Farida Nur Yuliati** is the head of the microbiology and animal health laboratory of Faculty of animal Husbandry Hasanuddin University, who was the team in the study of milk contaminants.

## 75. One Health Approach in Traditional Milk Production as a Part of Steps towards SDGs

Marija Jevtic, Branislava Belic, Danica Glavas Trbic

### ABSTRACT:

The production of milk and cheese assumes activities in the field of agricultural production, veterinary health, and the use of milk and dairy products has a public health significance, and can be viewed through the "one health" concept. The aim of the paper is to underline public health and sustainability significance of interconnection among agriculture, veterinary and technology. Production of hard cheese with added value from milk produced in organic and self-sustaining systems research the risks, advantages and possibilities of traditional cheese production and focused on creating conditions for organic milk and hard cheese with added value production, with precisely defined conditions: isolating land plots, livestock farms and processing facilities from possible sources of pollution, water quality, harmonized development of plant and animal production and the capability of producers for organic agriculture with the obligation to constantly innovate knowledge. The new products ensure the employment and livelihood of people in the countryside, the economic prosperity of small family farms, link the activities in the field of veterinary health and agricultural production, contribute to the development of risk-management technology, healthy chooses and compatible with SDGs. This research was financially supported by the Ministry of Science and Technological Development, RS, TR 31095.

*Keywords: Public One Health approach, Traditional Milk Production, sustainability, Healthy Choices, SDGs*

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**Branislava Belic**, Full professor University of Novi Sad, Faculty of Agriculture, Department of Veterinary Medicine, University of Novi Sad, Faculty of Agriculture,. Head of Department. She was President

of the Assembly of APV in charge of health. Member of the Red Cross Health Committee of Vojvodina. Membership: Section for Transfusiology and Hematology of the Serbian Medical Society, Vice President of the Transfusion Department of Serbia from 1996-2002, President of the Department of Hematology and Transfusiology SLD-DLVod 1998-2002., World Society of Transfusiologists ISBT (International Society Blood Transfusion) since 1990., American Association of Blood Bank AABB (American Association Blood Bank) of 1990-1992., European Federation of Immunology (EFI), Anthropological Society of Serbia, Association of Transfusiologists of Serbia, Inscribed in the register of permanent court experts in the field of transfusiology and controversial parenting 1993 in the Ministry of Justice of the Republic of Serbia Research Areas: Stress and metabolic adaptation of animals, Clinical hematology, biochemistry.

**Danica Glavas Trbic**, Bachelor and master studies finished at the Faculty of Agriculture, University of Novi Sad, study program: Agricultural Economics. In 2008/2009 finished first year of Master studies at Faculty of agriculture, Humboldt University, Berlin (Germany). Master's Thesis entitled "Rural and local economic development" defended in 2010. Now she is a PhD student at the Faculty of Agriculture, University of Novi Sad, study program: Agricultural Economics. She works on PhD thesis entitled "Factors of competitiveness of agribusiness in the Republic of Serbia". -Since January 2011 she has been employed at the Faculty of Agriculture, University of Novi Sad, at the Department of Agricultural Economics and Rural Sociology. -She is the author or co-author of over 50 scientific papers published in national and international journals and conferences, as well as one individual monograph entitled "Clusters in the function of rural development".



## 76. Environmental Sustainability of Dairy: Supply Chain Analyses Using LCA

Janis Brizga, Sirpa Kurppa

### ABSTRACT:

Dairy farming in Latvia is generally considered to be extensive, but large differences exist. Increasing pressure for efficiency is moving farmers into higher protein feeds and more intensive farming practices. Environmental impacts of these practices are also expected to differ. We used life cycle assessment (LCA) to evaluate the environmental impacts of dairy farms in Latvia depending on the number of cows on the farm. This is work in progress but results will be available before the conference. However, preliminary results show that the GHG emissions of different feeding systems could differ by 19%: from 1.37 kg CO<sub>2</sub>e/kg milk for the small farms (1-9 heads) till 1.11 kg CO<sub>2</sub>e/kg milk for the farms with more than 200 cows. But the land use differs even more – the biggest farms are 5 times smaller land footprint per kg of milk than the smallest farms. Nevertheless, it should be considered also that soy (one of the most popular high protein feed) production results also in other impacts, e.g. land grabbing, biodiversity loss which is not properly integrated into the LCA methodology. Extensive grazing also provides other services to society e.g. biodiversity and landscape conservation. This study shows challenges in LCA studies but shows possibilities to highlight environmental hotspots of different feeding systems.

*Keywords: LCA, dairy, environmental impacts*

**Janis Brizga** is Head of the Board at the NGO Green Liberty and researcher at the University of Latvia, department of geography and earth sciences. Previously, he was a chair of NGO network ANPED – The Northern Alliance for Sustainability, the Environmental Policy Programme Director at WWF-Latvia, and the Executive Director at Coalition Clean Baltic Latvia's office. He has received a PhD in geography, Environmental Science and Master of Social Science in Public Administration at the University of Latvia. He is working on issues of sustainable development and sustainable consumption governance and environmentally friendly behaviour. Janis Brizga is a member of the Global Research Forum on Sustainable Consumption and Production as well as a member of the board of the European Environmental Bureau (EEB), Europe's largest federation of citizens' environmental organisations.

**Sirpa Kurppa** is prof. Bio-based Business and Industry, Recycling economy solutions. She works with environmental impacts of the food production and services, integrated food and environmental policy, integrated product policy, environmental awareness and design, circular economy, industrial symbiosis, resilience. Special competence: agroecology, ecology of food systems, integrated and sustainable food production, environmental assessment, life cycle assessment (LCA), eco-design.

## 77. The Damage Caused to the Environment in the Context of the Sustainable Development of Society

Inga Kudeikina, Sandra Kaija

### **ABSTRACT:**

Each member of society and the society at large have constitutional rights to live in favourable environment. Questions of environment protection are closely linked to the sustainable development of society. In each specific case, land, air, water and natural resources are the property object of natural and legal persons, but overall, as one whole unity, the environment is the object of society interests. The protection of environment is ensured by applying civil rights, administrative and criminal legal instruments and by regulating preventive measures. In cases when preventive instruments have not yielded the expected results and the environment has sustained damage, the State applies coercive measures in order to punish the guilty, prevent or compensate for the incurred damage. This research focuses on issues that relate to preventing the damage to the environment and compensation issues as well as determining the volume of the caused damage and limitation boundaries. The researched issues are interdisciplinary and require the systematic approach. The aim of the paper is to research legal aspects of compensation and prevention of the damage caused to the environment analyse legal instruments of proof and identification of the compensation for the incurred damage in order to offer recommendations for the enhancement of the legal regulation. The research deployed descriptive, analytical and deductive-inductive methods. Using these methods, legal acts and views of legal scientists were reviewed and analyzed, and subsequently conclusions and recommendations were made. As a result of this research the authors have made the following conclusions: 1)incurred damage to one environmental object results in passing negative effects on the related environmental objects; 2)with reference to the specific environmental object, the damage compensation institute is applied, whereas with pertinence to the issue related to damage prevention, the compensation institute is involved, yet in relation to the issues of related damage - the prevention institute; 3)the claim for prevention and compensation for the caused damage to the environment is the rights of each member of society. Environment is a closed system, in which damage incurred by one element affects elements of other systems, which is why the damage evaluation and determination is complicated. One must evaluate not only the direct damage caused to the specific object but also to related objects. The most important issue to discuss in this context is the transition to the initial situation or condition, the one prior to the sustained damage. Therefore, the damage compensation can be realized as compensation for the direct damage and as completion of related events (for example, water cleaning, planting trees etc.). Considering the fact that every member of society has the rights to initiate the claim for the compensation for the damage caused to the environment, cooperation and help of state institutions are critically important. Procedurally the protection of society rights might be viewed through the prism of the initiation of the civil case or the case of criminal proceedings when the environment has sustained significant damage. In civil and criminal proceedings the legal status of society is different. The initiator of the case, the private person in civil proceedings, engages in procedurally complicated because of the necessity to protect own rights (when protecting own rights, the plaintiff defends all society rights to the favourable environment), and in

criminal proceedings it is difficult to do it because the burden of proof is borne by the State. Therefore, considering the fact that the environment is the foundation of the sustainable development of society, the State has to provide greater support in civil proceedings, too. Specifically, in those cases when the private person has submitted the claim for the compensation of the damage caused to the environment consistently with the civil procedural order, the prosecutor has to get involved in court proceedings and the burden of proof must be shifted from the plaintiff to the defendant because it is not the duty of the plaintiff to prove the fact of the damage caused to the environment but that of the defendant and in particular to prove the fact that the damage has not been caused.

*Keywords: environment, damage caused to the environment, sustainable development*

**Dr. Iur. Inga Kudeikina** is Assistant Professor of Riga Stradins University. Specialized in civil law, Studying civil rights development tendencies. The range of interests includes family and children's rights, property rights, and the settlement of civil disputes.

**Dr. Iur. Sandra Kaija** - Head of the doctoral study program "Law", Riga Stradiņš University, professor, expert of the Latvian Council of Science, member of the Working Group of the Ministry of Justice for amendments to the Criminal Procedure Law. She was a member of the Ministry of the Interior system's institution, major, associate professor in the Department of Criminal Law of the Police Academy of Latvia. Has provided opinions to the Constitutional Court and the Supreme Court. Having received the letter of gratitude from the Ministry of Education and Science of the Republic of Latvia for the success of the teaching and methodological work. More than 70 publications, incl. 7 monographs and textbooks, author and co-author.

## 78. Use of Industrial Waste to Produced Ceramic Coating on Metal

Maria Lúcia Pereira, Carime dos Santos Souza, Renan Fernandes Moraes, Elidiane Cipriano Rangel, Nilson C. da Cruz

### ABSTRACT:

Industrial processes are an activity that provokes large amounts of waste. Often these wastes are disposed in dam or landfills, occupied a large areas, causing environmental damage such as contamination of water and soil. In the scenario of Circular Economy, the aim is minimising waste and reuse waste as raw material in a new process. Therefore, this work shows two residues: Red Mud (bauxite residue) and Waste Foundry Sand (WFS) which present propitious chemical composition to be used as protective coating. In this work, these residues were used to obtain coating on aluminum alloy by Plasma Electrolytic Oxidation (PEO). PEO processing allows the creation of durable, uniform and strongly adherent coatings on metallic components of different shape. The mineralogical composition of coatings was investigated by X-Ray diffraction (XRD). Surface wettability was determined by contact angle and wear resistance was investigate. The coatings obtained with both residue are hydrophilic. Alumina is the main phase observed by XRD, indicating good chemical stability and great thermal resistance. Red Mud coatings increase the mechanical wear resistance of aluminum. These results demonstrate the feasibility to use these waste to coatings of metals improvement the quality and possibility new applications.

*Keywords: Industrial Waste, Red Mud, Waste Foundry Sand, Circular Economy, Ceramic Coating*

**Dr. Maria Lúcia Pereira** Antunes is Professor of São Paulo State University (UNESP), Sorocaba, Brazil (since 2003). PhD in Physics (1989). Head of NATEL Research Group where investigates environmental monitoring, Mining and Industrial Wastes, New applications for Mining and Industrial Wastes, Air Pollution. Advisor of Environmental Engineering Program of UNESP.

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## 79. An Integrated Approach to Understand Vulnerability of Small Island Developing States: Perspectives from Mauritius

Emilie Anne-Sophie Davantin, Satyadev Rosunee, Roshan Hemrajsingh Unmar

### ABSTRACT:

Small Island Developing States (SIDS) because of their inherent attributes, like insularity and small size, have been recognised as a special case for Sustainable Development and particularly vulnerable to climate change. Developing vulnerable indicators reflecting the status of SIDS is a continued effort as stipulated since 1994 by the United Nations. Despite the many efforts, vulnerability stays an "un-measurable" and complex state thus the challenge. This research seeks, as contribution, to primarily deepen the understanding of SIDS' vulnerability and resilience firstly in Mauritius through an integrated approach. Covering several sectors, expert semi-structured interviews were carried throughout academia, ministries, non-governmental organisations and international/regional organisations. Based on secondary data and on interviews, causal loop diagram (CLD), a systems thinking tool, was employed. The software Insight Maker was used for mapping causal relationships between variables/drivers of vulnerability and resilience. Beyond the inherent attributes of SIDS, the development of Mauritius, loss and damage concept and adaptive capacity were observed as substantial drivers in the vulnerability-resilience nexus. Other systems thinking tools can be explored to provide further information on systemic structure of vulnerability and resilience. The comprehensive picture provided by the CLD enables advancements in the development of the vulnerability assessment through systems dynamics method.

*Keywords: Small Island Developing States, Vulnerability, Resilience, Integrated Approach, Semi-structured interviews, Causal Loop*

**Ms Emilie Anne-Sophie Davantin** is a doctoral student at the University of Mauritius and is currently working on a research project entitled, "Development of an Integrated Sustainability Metric Model for SIDS". Being an islander has naturally triggered an interest for the case of Small Island Developing States. Her research project targets particularly three Small Island Developing States (SIDS) from the Indian Ocean, namely, Comoros, Mauritius and Seychelles. Emilie pursued her tertiary studies at the University of Mauritius and holds a Bachelor of Science in Sustainable Product Design from the Faculty of Engineering. Her research interests lie in the area of sustainability assessments using integrated approach with a growing interest for systems thinking and the potential of its application in solving world problems.

**Dr. Satyadev Rosunee** is an Associate Professor in the Department of Applied Sustainability and Enterprise Development (DASED), Faculty of Engineering, at the University of Mauritius. He also previously held the positions of Head of Department for DASED and Dean of the Faculty of Engineering.

**Dr. Roshan Hemrajsingh Unmar** is a Senior Lecturer in the Department of Applied Sustainability and Enterprise Development, Faculty of Engineering, at the University of Mauritius.

## 80. Creating Global Citizens through Higher Education in Japan

Cristina Tat, Keiko Iyanaga, Meg Ellis

### ABSTRACT:

As Japan is struggling with an aging population and a decreasing birth rate, a huge burden will be placed on Japanese companies and professionals to remain competitive in the global marketplace and to sustain the social system that provides for previous generations. Higher education will play a significant role in creating young professionals who are better prepared for the challenges of Japanese firms facing these trends. While this is by no means a new or emerging trend, there has been a disconnect between the demands of the Japanese Business Federation, the leading voice of businesses in Japan, and The Japanese Ministry of Education, Sports, and Technology (MEXT), in terms of what education reform should encompass. In 2016, MEXT has issued a mandate for higher education reform, and several academic institutions have interpreted it in different manners, resulting in different approaches to implementation. The aim of this presentation is to showcase how one private university has answered the call for reform through the establishment of a brand new department, aimed not only at creating more globally aware, bilingual graduates who have the skills that employers need, but also at ensuring the continued survival and success of the school in the face of an ever decreasing population of young people eligible to enroll.

*Keywords: Japanese higher education, globalization in Japanese higher education, education reform*

**Ms. Cristina Tat** is an Assistant Professor in the School of Policy Studies at Kwansei Gakuin University in Western Japan. She is a graduate of Vassar College (B.Sc.) and Baruch College Marxe School of Public and International Affairs (MPA). A former fellow of the National Academy of Sciences, her research interests include extensive reading and sociolinguistic development, and comparative education.

**Dr. Keiko Iyanaga** is an Associate Professor in the Global English Communication Department at Kyoto Tachibana University. A graduate from the Doctoral Program at Temple University, Dr. Iyanaga's research interests include extensive reading and vocabulary development.

**Ms. Meg Ellis** (Assistant Professor and Program Coordinator in the Faculty of English & Global Communication at Kyoto Tachibana University) has been teaching English as a Foreign Language since completing CELTA in 2005, beginning in Brisbane, Australia with full-time international students from every continent. She conducted courses in General English, IELTS preparation, and Cambridge exam courses, before moving to Japan in 2012. After leaving Ehime University in 2016, she began working with Dr. Keiko Iyanaga at Kyoto Tachibana University to completely redesign the English course for the new Faculty of English and Department of Global English Communication, which opened in 2017. Ms. Ellis is passionate about developing a classroom environment which encourages students to actively develop their language use, and acquire confidence in their ability to communicate with people anywhere in the world.

## 81. Health & Environment & Education as a Crucial Basis for SDGs

Marija Jevtic, Catherine Bouland

### ABSTRACT:

Global changes which are present in natural environment and urban environment, on the one hand, and demographic trends on the other hand, as well as numerous challenges in the preservation of health, enforce the necessity to take urgent actions that are in principle enclosed by the sustainable development goals. It is obvious that former theories and actions have not generated anticipated result and the world is globally facing serious challenges to provide existence and sustainability for future generations. The key solution can be suitable process of education through a life cycle which would produce a corresponding changes in the mindset of population/citizens/children and with the appropriate innovative technologies that respect imperatively the environment and contribute to achieve sustainable development goals, above all in the areas of public health, environment and education. In this manner, the strong link between these three components (health, environment, education) contribute to the achievement of other SDGs and strengthen the preservation of population health and children's health above all (through education and appropriate "SDG" mindset).

*Keywords: Public Health, Environment, Education, Children, Population, Global challenges*

**Marija Jevtic** is a full professor at the University of Novi Sad, Medical Faculty. Specialist in Hygiene at the Institute of Public Health of Vojvodina. Subspecialisation: Medical Ecology. Scientific collaborator-Université Libre de Bruxelles (ULB), Research centre on Environmental and Occupational Health, School of Public Health. Medical Doctor, University of Novi Sad, Faculty of Medicine (1991). Master degree in the field of Air pollution and health, University of Belgrade, Centre of Multidisciplinary studies (1999). PhD in the field of Environment and Health, University of Novi Sad, Faculty of Medicine (2001). Academic Master Degree in Health Management, University of Belgrade (2011). Group analyst (2009). System psychodynamic organisational consultant (Psycho-social Section of the Group Analytic Society Belgrade) (2018). Field of interest and work: public health, environment and health, SDGs, mental health, migration, climate change, food safety, nutrition, health management, group psychotherapy, organizational consulting. Previous position: Assistant minister, Director of Institute of Public Health of Vojvodina. Membership: Serbian Medical Association, European Public Health Association, Serbian Public Health Association. IPPF Serbia, Group Analytic Society Belgrade (GAS Belgrade); Group Analytic Society GAS International Member, International Society for Psychoanalytic Study of Organizations (ISPSO), Scientific-Professional Society for Disaster Risk Management - Serbia, European Health Management Association (EHMA).

**Catherine Bouland** graduated Zoological Sciences in 1979 with great distinction. In 1988, she became a doctor in Zoological Sciences with great distinction. She obtains a Postgraduate Certificate in Community Health at the ULB. She started at the Brussels Institute for Environmental Management (IBGE) from 1999 to 2010 in various positions of responsibility of the departments of Health and Internal Pollution, eco-construction and health and she launched a health and environment interface as a decision aid. Since 2010 and to date, the Prof. Bouland becomes a chair at the School of Public Health of the Université Libre de Bruxelles where she teaches a master's degree in environmental health and a doctorate in public health. In addition to teaching, she adds research and community services to this activity. She was vice-president of the national environmental cell and then become President. She works in the field of environmental exposures and effects on health, air quality, indoor pollution, low doses and cumulative exposure, air pollution and epidemiology, noise, development and management of new systemic approaches to environment and health. Since April 2012, Professor Bouland has been head of the Environmental Health and Occupational Health Research Center.



## 82. Drinking Water Quality in Health-Care Settings - Sustainability Aspect

Marija Jevtic, Sanja Bijelovic, Natasa Dragic, Emil Zivadinovic

### ABSTRACT:

Microbiological and chemical hazards in drinking water in healthcare settings (HCS) which can have the impact on human health, especially to patients, staff and carers were investigated. The sampling and analyzes of 790 DW samples in South Backa District (SBD) of Autonomous Province of Vojvodina (APV), were done in Public Health Institute of Vojvodina according to accredited, standardize and proposed national methodology during 2015. Hazards were recognized according to international recommendations. Risk assessment was done by applying the semi-quantitative approach, which crosses over the likelihood and consequence of identified hazard for risk ranking as low, medium, high and very high. HCS in SBD, APV are far from achieving acceptable levels of environmental health because of lack of resources, skills and adequate institutional support, so steps for prioritizing improvements and working in a phased way for identifying and addressing the most urgent problems at first and other benefits of continuous technical improvement, ongoing monitoring of DW, staff education and water, sanitation and hygiene promotion are necessary. The support of decision makers at the national level through appropriate lawful solutions and assistance in providing human resources is important. Supported by the Ministry of Education and Science of the RS - Project No.43002.

*Keywords: drinking water, quality, health-care settings*

**Marija Jevtic**, Full professor at the University of Novi Sad, Medical Faculty. Specialist in Hygiene. Subspecialisation: Medical Ecology. Scientific collaborator- Université Libre de Bruxelles (ULB). Master degree at University of Belgrade, Centre of Multidisciplinary studies (1999). PhD in the field of Environment and Health, University of Novi Sad, Faculty of Medicine (2001). Academic Master Degree in Health Management, University of Belgrade (2011). Group analyst (2009). System psychodynamic organisational consultant (2018). Field of interest and work: public health, environment and health, SDGs, mental health, migration, climate change, food safety, nutrition, health management, group psychotherapy, organizational consulting. Previous position: Assistant minister, Director of Institute of Public Health of Vojvodina. Membership: Serbian Medical Association, European Public Health Association, Serbian Public Health Association. IPPF Serbia, Group Analytic Society Belgrade; Group Analytic Society GAS International Member, International Society for Psychoanalytic Study of Organizations (ISPSO), Scientific-Professional Society for Disaster Risk Management – Serbia, European Health Management Association (EHMA).

**Sanja Bijelovic**, Associate Professor, hygiene specialist, sub-specialist in medical ecology, head of the Center for Hygiene and Human Ecology.

**Natasa Dragic**, Hygiene Specialist at Center for Hygiene and Human Ecology. Assistant at Medical Faculty.

**Emil Zivadinovic**, Hygiene Specialist, sub-specialist in medical ecology at Center for Hygiene and Human Ecology.

## 83. Feasibility of Heat and Power Recovery from Forest and Agricultural Wastes in Small Scale Applications

Yarima Torreiro Villarino, Leticia Pérez Rial, Ángela Rodríguez

### ABSTRACT:

Biomass energy obtained in rural areas provides a sustainable alternative for heat and power production. The combustion of biomass in boilers is the most widely used valorization option for thermal applications. However, cogeneration has proven to be an efficient and clean way of simultaneous production of electricity and useful heat in the place of consumption, with the consequent saving of primary energy and emissions. This experimental work aims to demonstrate the feasibility of application of combustion and microcogeneration (electrical power < 15 kW) using agricultural and forest wastes as fuels in small scale (residential and commercial level) applications. In order to do so, two biomass fuels (pruning of vineyards and gorse) were tested. In combustion trials, a biomass boiler (60 kWt) was employed. The performance of the combustion chamber during steady state operation was evaluated. Combustion efficiency and gaseous and particulate matter emissions were determined in order to verify the compliance with current regulations. An organic rankine cycle (ORC) coupled to the aforementioned boiler was used to carry out microcogeneration tests. Cogeneration yields (thermal + electrical) as a function of temperature difference between cold and hot focus were studied. In all cases, the viability analyses were performed by comparing the results obtained with a reference fuel (wood pellets).

*Keywords: Biomass, agricultural waste, forest waste, combustion, micro-cogeneration, organic rankine cycle*

**Dr. Yarima Torreiro Villarino** has developed her research activity in international and national projects related with the improvement of the quality of gasification gas in terms of H<sub>2</sub> production with CO<sub>2</sub> capture at the Research Centre for Energy, Environment and Technology (CIEMAT), where she joined in 2010. All this work has been culminated with the achievement of the PhD "Development and improvement of adsorbents for CO<sub>2</sub> capture and H<sub>2</sub> production in gasification processes", obtained at the Universidad Complutense de Madrid in 2017. Moreover during more than 6 years she has worked in projects related with residual biomasses of diverse nature valorization, (industrial waste and forest biomass) at pilot plant scale. Those works were developed until 2017 at CIEMAT and since 2018 at the Bioenergy Area of Energylab, a private non-profit technology centre that develops R+d+I activities. She has produced several scientist articles in specialized journals of high impact as well as numerous contributions to international and national congresses.

**Dr. Leticia Pérez Rial** graduated in 2010 in Mining Engineering in 2010 at the School of Engineering of Vigo University. After that, she followed her training obtaining the master's degree in Occupational Risk

Prevention in 2012. She has developed energy efficiency studies mainly for the residential and industrial sectors. In 2015 she joined the research group of Chemical, Energetic and Environmental Engineering of the University of Vigo and since then she has been involved in different projects related mainly to renewable energies, obtaining biofuels and microalgae cultures. All this work has been culminated with the achievement of the PhD "Optimization of algal biomass harvesting operations", obtained at the Universidad of Vigo. Since 2017 she is part of EnergyLab, a private non-profit technology centre that develops R+d+I activities since September 2008. In more recent years, she has been collaborating in several projects in different areas of activity, namely on projects about residual biomass valorization, biogas purification through microalgae or design and development of low cost systems for biogas production.

**Dr. Ángela Rodríguez (Female)** is the Head of the Bioenergy Area at EnergyLab (Spain). She has broad expertise in anaerobic digestion after obtaining her PhD in Environmental Engineering in Barcelona (Spain), working at GIRO technological center (Spain) and researching in the University of Jyväskylä (Finland). Additionally, she worked in the Institute for Energy and transport (JRC, European Commission, Holland) and in the International Energy Agency, regarding the Task 37: "Energy from Biogas and Landfill Gas". After that, she was working at the Leibniz- Institute for Agricultural Engineering (Germany) and got a Marie Curie-IAPP contract in Spain (always working on biogas production). She took part in several congresses (more than 30 posters and oral presentations) and she is author/co-author of 14 scientific articles. Nowadays, her scientific and professional activity focuses on the valorization of organic waste, through their conversion to biofuels such as biogas, biomethane and syngas.

## 84. What is the Connection between Soil Carbon Dioxide Emission, Global Warming and Food Security?

Agnes Toro, Endre Harsányi

### ABSTRACT:

In the heart of the western civilization, mainly in the European Union, we are more interested in the quality of the food than in the quantity. Because of the changing World we have to pay more attention to the future of the latter, namely to the food security. As the food security is depending on the global warming too, I selected a slice of the triggering actor on that, the emission of the carbon dioxide from the soil. My experiments were set up in the Latokep experimental site, what is in the eastern part of Hungary. I have examined the effect of less disturbance of the soil regarding the CO<sub>2</sub> emission, in case of the ploughing, the strip tillage and the loosening methods. Measurements were performed with five different randomly placed and unique cylinders and with the help of the TESTO 535 measuring device. The results confirmed the hypothesis: less emission can help in the fight against the global warming, thus it has a direct link to and impact on food security.

*Keywords: food security, global warming, CO<sub>2</sub> emission, tillage methods*

**Agnes Toro** is a researcher of the “Kálmán Kerpely” Doctoral School of Crop Sciences and Horticulture of the University of Debrecen (Hungary), who is working on her PhD thesis. Her thesis focuses on the link between Carbon dioxide emission of the soil by different tillage methods and food security. She continuously conducts measurements in the field in order to study this phenomenon and to make conclusions based on her real-time measurements. She has been participating in national and international scientific conferences, has several publications on the issue.

**Dr Endre Harsányi** is a docent of the University of Debrecen and the leader of the Faculty of Agriculture, Food Science and Environmental Management. He is devoted to the renewable energy, as he wrote his PhD thesis about this topic. His new line of the research is the precision agriculture, typically interested in that methods what provide less disturbance for the soil. With his PhD students he is examining the risk of the emerging level of the carbon dioxide. The treatments are set up in climate chambers and on experimental sites too with different measuring devices. In connection with the emerging CO<sub>2</sub> in the air they are examining the effects of the global warming and the solutions for the future trends.

## 85. Is the Need for Investment in Educating Consumers the Key Constraint for Social Enterprises in Reaching Their Full Potential, and Can Regulation Assist With This?

Samantha Sandilands

### **ABSTRACT:**

The Theory of Constraints (TOC) states that every organisation holds one key constraint that prevents them from being as effective as they could be, therefore limiting their performance. This paper identifies provision of education to consumers as a key constraint for social enterprise organisations, requiring a large amount of time and financial resource. Subsequently, less time and financial resource is spent on addressing the societal issue they wish to focus on. Using a qualitative interview methodology of four social enterprises in Boston, Massachusetts, with input from an NGO and the Massachusetts Department of Environmental Protection, this paper seeks to suggest that legislation can assist with limiting the effect of this constraint. Massachusetts has had a commercial food waste ban in place since 2014, so this is the context in which the study is set. Education of organisations and consumers was a key theme emerging from the interviews which demonstrates a connection between the concept and the theory. This study is still a work-in-progress.

*Keywords: Social enterprise, legislation, theory of constraints, qualitative interviews, food waste, consumer education*

**Samantha Sandilands** is a PhD student at the University of Birmingham, UK. Her current research is focused on the management of food waste through social enterprise, assessing different legislative and regulatory models through comparative case studies using a mixed methods approach. Her Masters dissertation formed a pilot study for the PhD research, and she was awarded Santander funding to conduct her research on location in Boston, USA. Her research interests are focused on responsible business and sustainability, and how business can have a positive impact on society and social issues.

## 86. Problem and Prospects of Sustainable Smart Cities: A Case Study of Ranchi

Arpana Premi Lina Oraon

### ABSTRACT:

Cities are pivotal to India's growth and economic development. However, the rapid horizontal and vertical expansion in what many call the "messy and hidden" process of urbanisation compels scholars and policymakers to look for concrete solutions to the various problems brought about by urbanisation. This paper is the case of the city of Ranchi, the administrative capital of Jharkhand, one of the cities selected under the Government of India's 'Smart Cities Mission' (SCM). The report provides an overview of Ranchi and evaluates the city vis-a-vis the vital dimensions of a 'smart city'. It discusses the challenges in developing Ranchi into a smart city and the initiatives by the state government to make the city vibrant, viable, habitable, inclusive and sustainable. The study concludes with policy prescriptions that should facilitate Ranchi's transformation into an inclusive and sustainable smart city.

*Keywords: expansion, urbanization, dimension, vibrant, transformation*

**Arpana Premi Lina Oraon** is Assistant Professor of Nirmala College, Department of Geography, Ranchi, Jharkhand. I am teaching Geography of Master's student in this college. I have submitted my thesis on Topic "Problems and prospects of Regional development in Kolhan division, Jharkhand"

## 87. From Fragmented to Sustainable Culture-Based Rural Development: Case of Latvia

Zenija Kruzmetra, Dina Bite

### ABSTRACT:

The two cycles of National Research Programme ECOSOC-LV 2014-2018 and "The Heritage of Latvia and Future Challenges to the Sustainability of the Country" 2018-2021 focus on cultural resource-based development potential of rural municipalities and regions, by analysing cultural strengths, challenges and opportunities. Research data was collected by using qualitative social research approach – semi-structured individual and group interviews with different local agents, observations, and document analysis. The usage of tangible and intangible culture resources varies from fragmented attempts to establish place branding to bright examples of making and re-making of the place through the prism of culture heritage. So-called best practices are characterised by symmetric relations between local agents, as well as conscious and targeted place-making. The results show that current culture economy practices are quite new and still fragile; the most important support is provided by non-governmental sector, therefore there should be greater involvement of state and municipal institutions to assess and specifically use cultural resources for sustainable rural development.

*Keywords: culture-based rural development, culture economy, sustainability*

**Zenija Kruzmetra** has a PhD in Human Geography. She is currently assistant professor, researcher in Faculty of Economics and Social Development, Latvia University of Life Sciences and Technologies. Z. Kruzmetra deliver courses - Rural Studies, Rural Sociology, Rural Geography, Demography and Environmental Sociology. Here research and publications cover different aspects of rural transformations, population mobility, place development. Here current research focuses on cultural environment development in rural areas, usage of natural and cultural heritage in place-based development.

**Dina Bite**, Dr.sc.soc., Assoc. prof. in Applied Sociology, from Latvia University of Life Sciences and Technologies. D. Bite has developed investigation about culture economy and cultural activities in the context of sustainable development. D. Bite has also studied the role of different social agencies in rural development, e.g. the youth, non-governmental organizations, local governments.

## 88. New Fiscal Package in Kosovo and Its Impact on Economy

Artan Nimani, Halil Kukaj

### ABSTRACT:

In order to create a more flexible system for citizens and businesses in Kosovo, the Government of Kosovo made a decision by which from 1 April 2014 increased the salaries for 25% for employees receiving salaries and pensioner compensation and other social categories from the Kosovo budget. Direct impact of this document: Decision No: 01/176. 10 March 2014, are: First, the increase in wage expenditures was not planned in the Medium Term Expenditure Framework 2014-2016 and this has given an indication of macroeconomic inefficiency (Assessed by the Kosovo Finance Ministry). Secondly, this increase decreases capital investment costs, which have the greatest potential to generate economic growth. Thirdly, wage growth along with spending on the Pristina-Skopje highway is expected to increase the budget deficit over the fiscal rule. Such a situation was also present at the time of investments in the Motorway - "Nations connection way". In order to balance the increase of budget expenditures with revenues, the International Monetary Fund (IMF), at the conclusion of the Kosovo visit in March 2015, suggested to the Government of Kosovo that in the continuation of the increase of the various excise duties to see the possibilities for growth Value Added Tax (VAT) which would bring a substantial increase in budget revenues. At the 20th meeting of the Government of Kosovo, dated 24 March 2015, during this IMF visit, the Government took a series of decisions on fiscal changes. Among other things, these decisions have to do with the approval of new draft laws: 1. Changes in Value Added Tax (VAT); 2. Changes in Corporate Income Tax; 3. Changes in Personal Income Tax; and 4. Changes in excises duties of cars, tobacco, and alcoholic beverages etc. Reform in fiscal policy encourages greater investment in production and at the same time improves business liquidity. According to an estimate by the Ministry of Finance, businesses will have about 27.6% cheaper start of production process.

*Keywords: Kosovo, budget, VAT, Tax, IMF, finance, fiscal*

**Prof. Ass. Dr. Artan Nimani**, born June 10, 1978 in Gjakova, I graduated in high school in the economy. In the University of Pristine has received the title: Graduated Economist in Management and Informatics, Master of Science in Economics at the University of Pristine and Doctor of Economics at the European University of Tirana. I work as a Professor and Member of the Board at the University of Prizren. I have published 10 books in the fields of economics and finance and leaflets for students' needs, and used as university literature in Kosovo. Member of the Association of Invalids and Veterans of the KLA. Assembly Member of the Municipal Assembly of Gjakova (2013-2017). Vice Prime Minister of Labor and Social Affairs and Diaspora (CGS) 2006-2008. Mayor Youth Forum that PDK 2000-2002. Chairman of Albanian Young Economists, 2005. Captain of the HPS of the Kosovo Protection Corps. Director of the Institute of Statistics "Rahmil Nuhii". Publisher of the journal "Trend magazine"; 2010. Member of the World Congress of Statisticians (2006).

**Prof., Assoc. Dr. Halil Kukaj**, born in Vuthaj of Montenegro, has graduated from high school, the Faculty of Economics in Pristine, where he has a master's degree and doctorate at the University of Pristine, Kosovo. Has worked in the Kosovo Economic Institute and in Universities professors. Currently he is Dean of the Faculty of Economics at the University of Prizren in Kosovo. Has the title of Prof. Assoc.



## 89. Value Congruence on CSR and Its Impact on Corporate Reputation

Songdi Li, Louise Spry, Tony Woodall

### ABSTRACT:

Corporate Social Responsibility (CSR) is increasingly accepted by decision makers and implementing in businesses, because it is beneficial to an organization profit and influence the perception and commitment of its stakeholders to the organization, therefore, doing CSR is largely related to building a good reputation. Although The individual values of managers is more and more regarded as the driver of doing CSR, and the value congruence between manager and its followers influence the CSR activities, the link between individual CSR values and the Corporate Reputation (CR) is a understudied topic. The purpose of this article is to (a) explore to what extent university top manager and middle managers have a value congruence on doing CSR. And (b) to explore to what extent the CSR value congruence that happens within the organization can impact on the CR which is perceived by its external stakeholders. The whole study is based on two case studies in UK and Chinese universities via using semi-structured interviews and surveys because case studies can make comparison between cases that cross cultures and acquire an insight view of all stakeholders in the High education level. This study will benefit the top management in the CSR decision making.

*Keywords: CSR, CR, value congruence, values*

**Songdi Li** is a PhD candidate and Lecturer of Nottingham Business School, Nottingham Trent University, United Kingdom. Her research focus on Corporate Social Responsibility (CSR) and its impact on Corporate Reputation (CR) via decision makers' personal values.

**Louise Spry** is a Senior Lecturer in the Marketing Division at Nottingham Business School, Nottingham Trent University. She teaches across a range of undergraduate and postgraduate courses. Louise, who is a member of the Chartered Institute of Marketing (CIM), manages the final year undergraduate module Strategic Marketing and Brand Management and the MSc module Branding and Corporate Reputation Management. Louise successfully completed her Doctorate of Education (EdD) in November 2014 and has presented at a number of national and international conferences. Louise also supervises a number of doctorate students studying diverse contexts and topics including organisational behaviour, citizenship, management and leadership, and corporate branding and corporate reputation both in organisations and countries.

**Tony Woodall's** current activities revolve chiefly around writing and research, and doctoral supervision (both PhD and DBA). He is currently supervising 8 doctorates (PhDs and DBAs) – primarily as DoS - and has six full completions. He is a Principal Lecturer in Marketing and also provides guest lectures on topics of interest on colleague's modules. He also assists the Divisional Head by conducting colleague PDCRs and helping with recruitment, and is a reviewer for CREC (College Research Ethics Committee). Prior to taking a part-time contract Doctor Woodall taught/led modules in the area of services marketing, and for a number years acted as undergraduate module co-ordinator for the Marketing Division. He began his time with NTU working with the Quality Unit in the Department of Mathematics and Statistics and moved in to the Business School in approximately 2000.

## 90. Contributions of Trade Unionism to Sustainable Development: The Case of the IPLIDO-UTHGRA

María Susana Césari, Johanna Maldovan Bonelli, Mariana Russak, Jörg Maik Eggers

### ABSTRACT:

For several decades it has been internationally recognized the role of unions in promoting sustainable development goals, especially in its economic, social and cultural dimensions. While the commitment to free association, social dialogue and collective bargaining are some of the main aspects of their actions, trade union organizations also work in other key areas to achieve social justice, such as access to information, education, health and gender equity. The Institute for Equal Opportunities (IPLIDO) of the Union of Tourism, Hotel and Gastronomy Workers of the Argentine Republic (UTHGRA) is a paradigmatic case on this path. In order to ensure equal opportunities for all people (based on the equal participation of men and women in the labor, economic, political, cultural and family) the IPLIDO has carried out several actions aimed at: strengthen ties in the community; build networks among non-governmental organizations, trade unions and public institutions; promote gender equality; disseminate information and train in pressing issues such as addictions, grooming and gender violence; and participate in the design and implementation of laws and public policies, among others. This paper addresses the strategies and actions carried out by the IPLIDO since its creation -in 2006-, highlighting its interaction with the public sector, international and civil society organizations, in order to promote rights and values in the trade union sphere and the community in general.

*Keywords: Trade Unions, Sustainable Development, Social Justice, Public Policies, Equal Opportunities*

**María Susana Césari** is currently the Executive Secretary of IPLIDO and Secretary of Minutes and Affiliations of UTHGRA. She has a 35 years work experience in the trade union field. From a young age, she has worked in areas of interest and social impact related to public policy and management. She also serves as Director of the Trade Union Area of the Women's Forum Association of MERCOSUR. Mrs. Césari is also part of the Working Group of Trade Union Leaders organized by the Embassy of the United States of North America in Buenos Aires; participates as an exhibitor at international conferences; and is part of the official Argentine delegation in the CSW at the United Nations headquarters in New York, which meets every year in March. She is a member of the CTIO (tripartite commission) of the National Secretary of Labor, of the Women and Trade Union Board of the National Institute of Women (Ministry of Social Development), and Chair of the "El Pueblo de la Tradición" Foundation since 1998.

**Dr. Johanna Maldovan Bonelli** holds a degree in Sociology and a PhD in Social Sciences from the Faculty of Social Sciences of the University of Buenos Aires. She currently works as an Assistant Researcher

at CITRA (CONICET-UMET), as a regular Professor in the Institute of Social Sciences and Administration of the Arturo Jauretche National University (UNAJ) and as a professor at the University of Buenos Aires (UBA). She has served as a teacher-trainer in various organizations (public institutions, social organizations, trade unions) and has developed consulting services to national and international organizations. She has obtained two doctoral and one postdoctoral fellowships awarded by CONICET based at the Center for Labor Studies and Research (CEIL-CONICET) and an exchange doctoral fellowship awarded by the ERASMUS ARTESS program based at Alma Mater Studiorum Universitat de Bologna. Since 2007, she has participated and conducted transference and research projects. Dr. Maldovan has specialized in sociology of work and her main topics of research are associative work, popular, social and solidarity economy, informality and public policies. She has presented and published her work in several congresses, conferences, books and national and international academic journals.

**Mariana Russak** is a lawyer, and has a degree in Political Science with a specialization in International Relations. She is an advisor to IPLIDO-UTHGRA and designs prevention and sensitization programs for mass dissemination and national campaigns. She also is a member of the Women Leaders of the Americas committee, an initiative carried out by the Organization of American States (OAS) together with the Documentation Sciences Foundation of Spain. She specializes in political consultancy and communication strategy with a gender perspective, advising in the public sphere and civil society organizations. She is a lecturer in areas related to leadership, empowerment, justice, unionism and gender. She assiduously carries out pro bono work, providing workshops and trainings in organizations and community centers.

**Jörg Maik Eggers** has a degree in Political Science. He is the Coordinator of the Professional Team of the IPLIDO-UTHGRA and is the Head of Affiliations of UTHGRA. He also coordinates the design of prevention and awareness programs for mass dissemination and national campaigns. From his performance and results obtained in the Trade Union Organization and his interpersonal skills for human relations, he was called to be Head of Affiliations and, subsequently, to coordinate the IPLIDO. He is a person deeply committed to equal opportunities between men and women and his work in the Institute allows him to generate a real impact on civil society and build a more just and equitable society.

## 91. Measuring Innovative Employee Behavior in an Enterprise – Methodological Aspects

Joanna Wyrwa

### ABSTRACT:

In the era of increasing competition, companies are making efforts to become more competitive, also by increasing innovation, understood as the ability to implement new solutions in various areas of business operation. To this end, many organizations are seeking new sources of innovation that will stimulate and promote employee behavior beyond the traditional standards of task performance and achieved results. The importance of - and need for - proactive behavior among employees is stressed, which not only allows adaptation to changes, but also involves generating and implementing new solutions. Innovative employee behavior is considered key in ensuring the increase of the company's efficiency and survival, as well as its competitiveness. Innovativeness is currently one of the basic determinants of development and building competitiveness in modern organizations. It is conditioned by a number of factors, among which an important group are internal factors related to the activity and participation of employees in the generation, development and implementation of innovative ideas, among other things. Modern enterprises cannot limit themselves to active adaptation, but should themselves become innovative organizations characterized by skillfulness in creating, implementing and disseminating innovations. The aim of the study is to present the concept of measuring innovative employee behavior in the internal perspective of the organization. The article discusses the main methodological problems regarding the employee innovation measurement model. The implementation of the objective required reviewing the literature and developing an independent research model.

*Keywords: innovative behaviours, employee behaviours, stimulate innovations, research methods, scientific research*

**Dr. Joanna Wyrwa** is Assistant Professor of Faculty of Economics and Management, University of Zielona Góra, Poland. She concentrates her research interests on the issues related to the creating innovations. She is the author and co-author of over 100 academic publications. She is actively working towards economic practice. She disseminates the results of these research projects and performed at scientific conferences, and by publishing articles in academic notebooks at universities as well as in academic journals. She has received several awards for my achievements in academic research, particularly for the series of publications. She is a member of the Polish Economic Society.

## 92. Sustainable e-Governance and Human Resource Development

Sorin Burlacu, Cristina Alpopi, Marcela Mitrită, Maria-Loredana Popescu

### ABSTRACT:

Much of the literature focusing on organizational change suggests that changes often fail because of employees' resistance. This resistance is caused by their personal fears that change will affect them in any way. Employees are often afraid of changes that could lead to changes in comfortable social dynamics and to additional, less desirable or even more difficult tasks. The proliferation of new technologies brings new challenges but also concerns about job stability. Our paper addresses the issue of human resources development from e-government perspective and presents some features that could be considered when promoting technologies especially in sensitive areas such as public administration. The methodology of research aimed at measuring and interpreting a set of economic, technical and social aspects present in public organizations in Romania. The research findings show how HR is transforming into the digital era and what one might consider to bridge the gap between knowing and doing what is needed to put technology together with the latest processes and skills for a sustainable development of human resources.

*Keywords: e-HR, the digital era, the development of human resources*

**Dr. Sorin Burlacu** is a lecturer at the Faculty of Public Administration and Management, a holder of the e-Administration courses and digital systems in Human Resources, taught to the students in the degree programs and disciplines Public Sector Projects and Informatics Systems applied in Human Resources Management taught within the masters programs.

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## 93. The Energy from Renewable Sources in the European Union: Achieving the Goals

Sorin Petrica Angheluta, Sorin Burlacu, Amelia Diaconu, Cristina Stefania Curea

### **ABSTRACT:**

The existence and continuity of life on Earth is based on the existence of an ecological balance. Under the influence of pollution, the quality of the natural environment gradually degrades. Thus, pressures are exerted on the environment, including from energy production and consumption activities. The different phenomena of pollution, associated with the destruction of the environment, have made the sources of energy production diversified. Sustainable development can be achieved through the use of technologies that protect the environment. Within the electricity sector, energy from renewable sources has grown significantly in recent years. Energy production from Renewable energy reduces the use of fossil fuels, but also influences the process of reducing greenhouse gases. The article starts from the analysis of the current situation of renewable sources in the member countries of the European Union. With support of the comparative analysis of existing data at European level, the stage of achieving the European Union's objectives on renewable energy is presented. Also, comparative analyzes of data on the share of renewable energy in final energy consumption are presented. Lack of emissions of pollutants, and the fact that they are inexhaustible, make, on the whole of electricity production, the share of renewable sources increase.

*Keywords: Renewable energy, European Union, electricity production*

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**Cristina Stefania Curea**, Associate Professor - The Bucharest University of Economic Studies, Romania.

## 94. European Multi-level Governance

Florina Bran, Dumitru Alexandru Bodislav, Carmen Valentina Radulescu, Mihaela Diana Oancea Negescu

### **ABSTRACT:**

This paper represents an overview of the concept of multi-level governance and the approach delivered on innovation at European level with the purpose of helping and empowering researchers and businesses to thrive in a technologically advanced economy. The concept of multi-level governance derives from the analysis of the institutional framework for the development of Community policies and the Community political process. This stems from the presumption that the Community governance system has a high degree of differentiation and integration both vertically and horizontally. The multi-level governance model illustrates how certain competences of the national state are transferred to the supranational level or to the public or private sub-national authorities. Within this model, we can meet both supranational actors and actors at national, regional or local levels. This type of governance is characterized by the existence of a limited number of authorities, divided so as to be able to perform more functions, excluding their overlapping to exercise exclusively competences on delimited territories. Multi-level governance in innovation is characterized by a national transition as a unique place for the development and implementation of innovation policy, both at supranational and sub-national levels.

*Keywords: Multi-level governance, European Union, development, social cohesion, institutions*

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**Carmen Valentina Radulescu**, Associate Professor PhD. at the Bucharest University of Economic Studies.

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## 95. Influence Urbanization on Groundwater and Surface Water Conditions

Josef Vojtech Datel, Anna Hrabankova

### ABSTRACT:

The purpose of the project (2018-2020) is to assess the long-term influence of the advancing urbanization in peripheral parts of the capital city of Prague on groundwater and surface water in close connection with ongoing climatic changes, as well as from changes in the nature and extent of built-up areas in the outskirts of Prague. The six selected pilot catchments (with nine measuring profiles) represent different natural and geological conditions and different land use, and thus can be expected to provide a good basis for a generalization for the whole territory of outer Prague. The streams are also sampled twice a month for the purpose of surface water quality monitoring. The principal deliverables of the project (2020) are foreseen as follows: an interactive map portal of hydrological and hydrogeological conditions prevailing in suburban parts of Prague; suitable adaptation measures to extreme hydrological situations (floods/droughts), together with a monitoring system; and a numerical simulation model of water quality using run-off characteristics and flow rates changes as inputs.

*Keywords: groundwater; surface water; urbanization; climate changes; Prague*

**Dr. Josef Vojtech Datel** is a researcher of the TGM Water Research Institute in Prague, Czech Republic. He deals with a wide range of groundwater problems, their use and protection. The main areas of his research are regional hydrogeology, hydrological and hydrogeological research, drilling and pumping techniques, construction of hydrogeological wells, groundwater protection and monitoring, and management of water resources. In recent years, it has been dealing with projects focusing on natural groundwater resources, the interaction of surface and groundwater and the impact of climate change and anthropogenic activities on groundwater.

**Anna Hrabankova** is a researcher of the TGM Water Research Institute in Prague, Czech Republic. The main theme of its research is the monitoring and evaluation of the quality of surface and groundwater, focusing on the issue of pollution of water by nutrients from agricultural production and the related implementation of Nitrate Directive 91/676 / EEC. In recent years, it has been evaluating measures to improve the quality of surface and groundwater, especially for drinking purposes.



## 96. Digital Technologies Applied in Agriculture for Sustainable Development

Carmen Valentina Radulescu, Maria Loredana Popescu, Mihaela Diana Oancea Negescu, Dumitru Alexandru Bodislav

### **ABSTRACT:**

Recently, many articles deal with Internet and mobile phones that have penetrated all sectors of the economy, including agriculture, in the light of their benefits. Various reports, including the World Bank, describe the main benefits of new information and communication technologies and promote their greater integration into the wider economy to increase efficiency by completing other production factors and fostering innovation, for example, drastically reducing transaction costs. The article analyzes recent literature but also presents novelty elements that emerged from questions such as the risks associated with new technologies considering that there are not enough studies in the field confirming, on the one hand, the benefits but also the losses caused by them.

*Keywords: New technology, agriculture, innovation*

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## 97. Stimulating of Health and Sustainable Lamb Meat Production in Hilly Mountain Regions of Serbia

Mila Savić, Vladimir Dimitrijevic, Djordje Savic, Zsolt Becskei

### ABSTRACT:

Considering that intensive livestock production systems exceed environmental limits, the framework of Republic Project 2011-2019 was focused to stimulating sustainable animal food production in hilly mountain regions of Serbia. These regions are characterised by a great capacity of environmental sustainability, such are biodiversity, pasture and water quality. The priority area of the Project is related with healthier and more sustainable lamb meat production. The lamb meat quality characteristics of well adapted autochthonous types of Zackel sheep have been evaluated. The results of this study showed that tested lamb meat samples from pasture fed Zackel sheep types contain favorable fatty acid profile and amounts of conjugated linoleic acid, important for healthy children diet, especially regarding its protective effects on some diseases, such are malignancies, cardiovascular diseases and diabetes. The results of this study have an implication on future promoting of sustainable lamb meat production and consumption. Also, the obtained results are a good base for improving knowledge of environmental impacts on animal food.

*Keywords: environmental sustainability, animal production, lamb meat*

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## 98. Exploring Sustainable Livelihood of Kazakhs Nomads - A Residential Survey in Karamay, China

Jing Chen

### ABSTRACT:

As a part of the Urban-Rural Planning Project implemented to develop sustainable development strategies for Karamay District which faces a crisis of oil depletion, this research focused on rural livelihood development of the project area. The project took place in rural Karamay district, where main residents are Kazakhs nomads. The author investigated 55 households from 4 village communities through semi-structured interviews targeting randomly selected residents. The interview questions were designed based on previous unstructured interviews and literature review. Each interview took around 30~45 minutes. Through the interview, we evaluated our interviewees' livelihood condition as well as their own perception of the current livelihood. Local government's role in local livelihood development was also explored. Implementation gap resulting from cross-cultural differences was observed in local governance. Despite government's efforts to increase local income by encouraging agritourism development, the residents showed little motivation to cooperate because they were already satisfied with the current livelihood. Through the semi-structured interview, we obtained more information in a relatively more accurate manner compared to a questionnaire survey. However, the weakness is that due to our lack of in-depth knowledge in Kazakh nomadic culture, some of our findings couldn't be well explained. And this may be considered as the implication for future practice as well.

*Keywords: Rural livelihood, rural sustainability, nomadic culture, cross-cultural differences, local governance*

**Jing Chen** is a second-year graduate student from Graduate School of Global Environmental Studies, Kyoto University, Japan. She received a bachelor's degree in Japanese Language and Literature from Zhejiang University of Technology, China. In her final year of bachelor's studies, she finished a one-year exchange program provided by School of Regional Development Studies, Kanazawa University, Japan. Since then, she has developed her interest in sustainable rural development. During September - December in 2018, she joined a Regional Urban-Rural Planning Project hosted by Chinese Academy of Science in Karamay, China. There she conducted an interview research in rural Karamay to investigate local Kazakhs nomads' livelihood.

## 99. Dealing with the Central Cities' Vacant Houses Problem towards Sustainable Urban Development - A Case Study of Kyoto City, Japan

Kazuhiko Todaka

### ABSTRACT:

Vacant house problem is increasingly recognized as a significant barrier to the revitalization of central cities in Japan due to aging and declining population. This study argues that the current vacant house reuse system in Japan is insufficient. Therefore a new solution towards a more sustainable house vacancy reduction was proposed by the author. Currently in Japan, if owners want to deal with their vacant houses, they may either choose to put them on the market or get them demolished by the government. Usually only when the vacant house in extremely bad condition will it be demolished. Thus putting them on the market becomes the only solution to house reuse. However, due to many factors such as market prices, perception of costs and benefits or other personal reasons, many owners choose not to put their vacant houses on the market. By 2013, this kind of vacant house has reached to 3.2 million in Japan. To tackle with such situation, the author proposed a new system which allows the owners unwilling to sell or rent their vacant houses an alternative option to house reuse. Based on a mutual agreement on a temporary utilization of the vacant houses at community scale, the new system may enable more flexible house reuse comparing to the current one.

*Keywords: Vacant house, house reuse, housing market, city revitalization*

**Kazuhiko Todaka** is a second-year graduate student from Graduate School of Global Environmental Studies, Kyoto University, Japan. He received a bachelor's degree in environmental system engineering from Ritsumeikan University, Japan. At Ritsumeikan University, he studied environmental contamination mitigation system and developed an interest in the mechanism of environmental contamination. However, after taking several lectures in landscape planning, he gradually grew interested in this field and decided to go on to further study. During November - December in 2018, he did an internship at city government of Kashiwa, where a good system for vacant land revitalization has been developed. However, despite the success of vacant land revitalization, the city struggled with the vacant houses problem. This experience inspired him to continue studying a new solution for the reuse of vacant house after the internship.

## 100. Wildfire Smoke Effects on Health: Implementing an Air Quality Alert System for UCSD

Melina Cunha

### ABSTRACT:

The health effects from wildfire smoke are becoming more widespread due to the increased intensity and duration of wildfires in California. Researchers have discovered many negative health effects of wildfire smoke inhalation, including respiratory morbidity leading to exacerbations of asthma and COPD, as well as cardiovascular morbidity and more. Vulnerable populations such as children, people with pre-existing conditions, pregnant women, and the elderly are especially susceptible to these effects. By taking measures to reduce exposure to wildfire smoke, it is possible to reduce these health effects. The projected increase of wildfires in California and the many health effects caused by acute exposure to wildfire smoke demonstrate a need for an alert system during these events. This should include an email or text message alert with information about the fire and air quality as well as recommended actions to take. With an effective alert system and recommendations for different populations based on their vulnerabilities, we should see a decrease in these health effects during wildfire events compared to what we see currently. The result of this investigation into smoke health effects and air quality alert systems is an air quality alert system for UCSD that includes both email alerts and a website. An email alert will be sent out to the entire UCSD campus when air quality deteriorates to an AQI over 100. The Wildfires and Air Quality website link will be included in the email and contains information about air quality, vulnerable populations, and specific actions to take to reduce smoke exposure. The alert system will be managed by the Emergency Department of Environmental, Health, and Safety at UCSD. This alert system should be adapted to the rest of the UC campuses and then to cities across California and around the world.

*Keywords: Air quality, wildfire smoke, alert system, public health, warning*

**Melina Cunha** is a master's student at Scripps Institution of Oceanography, University of California San Diego, completing a degree in Climate Science and Policy. Her interdisciplinary thesis work focuses on health effects from wildfire smoke and she has successfully implemented an air quality alert system for UCSD to use during wildfire smoke events. She hopes to expand this alert system across California and to the rest of the world. Other interests include local climate change effects and adaptation strategies.

## 101. Life Cycle Assessment and Life Cycle Costing in Measuring the Sustainability Performance of Maize Production

Jerzy Bieńkowski, Rafał Baum, Małgorzata Holka

### ABSTRACT:

Analysis of production processes in agriculture should consider all elements of production processes with regard to a possibility of creating environmental threats and costs within the life cycle of products. Fragmentary evaluation based only on a single environmental or economic effects is insufficient. It does not meet the complexity criteria of analysis, which are one of the main objectives of methodical analysis of sustainable development. A comprehensive approach by integrating environmental and economic analysis offers more comprehensive diagnostic capabilities for controlling production processes in a way that would contribute to reducing the costs and environmental burden throughout the product life cycle. The aim of the paper is to conduct integrated environmental and economic evaluation of the maize production in different farming types by applying the methodology of life cycle assessment and life cycle costing. The conclusion presented in the study were based on the data from a study group consisting of 69 commercial farms located in two regions of Poland representing plant and animal-based farming types. This work is a part of a research project No. 2016/21/B/HS4/01963 financed by the National Science Centre.

*Keywords: Life Cycle Assessment (LCA); Life Cycle Costing (LCC); sustainability, farming types, maize*

**Dr Jerzy Bieńkowski**, Associate Professor at the Institute for Agricultural and Forest Environment Polish Academy of Sciences. He is a Head of Department of Agricultural Production Systems. The main fields of his research interest are: multicriterial analysis of agriculture sustainable development, environmental impacts of agricultural sector activities with the use of LCA method, and production efficiency based on Data Envelopment Analysis approach. He was involved in the realization of international FP 6 EU Projects: "The nitrogen cycle and its influence on the European greenhouse gas balance" and "MEA-Scope: micro-economic instruments for impact assessment of multifunctional agriculture to implement the Model of European Agriculture". Currently he is the manager of the research project financed by the National Science Centre in Poland focusing on the integration of LCA and LCC methodologies in the eco-efficiency analysis of farms.

**Dr Rafał Baum**, Associate Professor of Poznań University of Life Sciences, Poland, Head of the Department of Law and Enterprise Management in Agribusiness and vice dean of the Faculty of Economics and Social Sciences. He specializes in agriculture economics, economics of sustainable development, economics and organization of farms and enterprise management in agribusiness. He is the authors of more than 180 publication items (mainly papers published in peer-reviewed national and international journals). Leader and participant in 8 national research projects. Member of the scientific experts team of the Institute of Agricultural and Food Economics - National Research Institute in Warsaw (Multiannual Programs 2011-2014 and 2015-2019).

**Dr Małgorzata Holka** is an Assistant Professor at the Department of Agricultural Production Systems, Institute for Agricultural and Forest Environment of Polish Academy of Sciences in Poznań, Poland. She obtained PhD in agricultural sciences with specialty in agroecology at the Institute

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## 102. An Analytical View to Environmental Quality of Life in the European Union Countries

Emília Huttmanová, Roman Novotný, Tomáš Valentiny

### ABSTRACT:

Quality of life and health is very closely linked to the environmental quality. However, the environmental quality is not only perceived as a determinant of quality of life, but it is an internal part of (sustainable) development, in terms of the green growth concept, at these days. The concept of green growth is one of the newer ways to ensure economic and social development in the context of sustainable development. Economic and social development, as well as ensuring and preserving the environmental quality, has its important place in the green growth concept. Green growth requires a new view on management of economic and social development. This article is focused on the evaluation of interregional disparities in selected areas of sustainable development. The aim of the paper is to evaluate the environmental quality of life in European Union countries using the selected indicators of green growth in the context of sustainable development.

*Keywords: Environment, Quality of life, Green growth, Indicators, European Union countries*

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## 103. Indicator Analysis of the Economic Development of Polish Regions in the Context of the Implementation of the Concept of Sustainable Development

Anetta Barska, Janina Jędrzejczak-Gas

### ABSTRACT:

The aim of the article is to present the regional differentiation of indicators characterizing the economic development of Polish regions in the context of the progress made in the implementation of the concept of sustainable development in 2010 and 2017. The authors focused primarily on determining the position of Lubusz Province on the economic map of Poland. The article proposes a set of indicators monitoring one of the areas of sustainable development - economic development, which also take into account other areas of sustainable development, i.e. social development, environmental development, and institutional-political development. The main criterion for the selection of indicators were substantive premises and their completeness and accessibility across the regions. The analysis and evaluation of the proposed indicators (explanatory variables) were conducted within five thematic areas which mark the economic development of the regions and which are important from the standpoint of the sustainable development concept: 1) Economic potential, 2) Economic activity of households, 3) Economic activity of enterprises, 4) Innovation economy, 5) Production and transport. The article consists of two sections. In the first section, based on literature review, the most important issues regarding the concept of sustainable development and the state of scientific research on the indicators of sustainable development at regional level are presented. The second section addresses the concept of indicator analysis on the basis of which an assessment of economic development of 16 Polish regions was carried out and the position of Lubusz Province was determined against the backdrop of the other regions. The findings prompted an answer to the question concerning the economic development of Polish regions, and in particular of Lubusz Province, in the context of the concept of sustainable development.

*Keywords: indicator analysis, region, sustainable development, economic development, Poland*

**Dr Anetta Barska** is an assistant professor at University of Zielona Góra, Faculty of Economics and Management, Poland. She is the author and co-author of more than 110 scientific publications. She actively participates in national and international scientific conferences as well as various research projects. She completed scientific internships in Belgium, Slovakia and Russia. She works for economic practice. One of the undertaken her research trends is the issue of formulating and implementing sustainable development strategies by both businesses entities as well as local government units. The result of this work has been her co-authorship of documents such as The Integrated Development Strategy of the Functional Area of the Oder Communes (2015), The Integrated development strategy for education and labor market in the Functional Area of the Oder Communes (2015), The Sustainable Development Strategy in the district of Zielona Gora (2013), A program to promote entrepreneurship for the city Żagań (2016).

**Janina Jędrzejczak-Gas** is an assistant professor at University of Zielona Góra, Faculty of Economics and Management, Poland. She is the author and co-author of more than 100 scientific publications. She actively participate in national and international scientific conferences as well as various research projects. She work for economic practice. She is an author of many studies and strategic documents both for the business sector and local government units.

## 104. Assessment of the Economic Development of Polish Regions in the Context of the Implementation of the Concept of Sustainable Development - Taxonomic Analysis

Janina Jędrzejczak-Gas, Anetta Barska

### ABSTRACT:

The aim of the article is to conduct a multidimensional assessment of the diversification of economic development of Polish regions in the context of the progress made in the implementation of the concept of sustainable development in 2010 and 2017. The authors focused primarily on determining the position of Lubusz Province on the economic map of Poland. Given that economic development is a complex category, taxonomic (synthetic) measures developed on the basis of selected methods of multivariate comparative analysis were used in the research. The synthetic measures were constructed using the proposed partial indicators (explanatory variables), which, according to the authors, best illustrate economic development and the idea of sustainable development at regional level. Based on the constructed measures, a linear ordering of Polish regions by level of economic development in the context of the implementation of the concept of sustainable development was made, and the convergence of the orders was examined. In addition, the regions were grouped by level of economic development. Subsequently, the effectiveness of the obtained groupings was evaluated. The research shows that in 2017, compared to 2010, the overall level of economic development in all Polish regions increased. In what concerns Lubusz Province, a conclusion can be made that its position in the overall ranking is improving.

*Keywords: Linear ordering, region, sustainable development, economic development, Polish regions*

**Janina Jędrzejczak-Gas** is an assistant professor at University of Zielona Góra, Faculty of Economics and Management, Poland. She is the author and co-author of more than 100 scientific publications. She actively participates in national and international scientific conferences as well as various research projects. She works for economic practice. She is an author of many studies and strategic documents both for the business sector and local government units.

**Dr Anetta Barska** is an assistant professor at University of Zielona Góra, Faculty of Economics and Management, Poland. She is the author and co-author of more than 110 scientific publications. She actively participates in national and international scientific conferences as well as various research projects. She completed scientific internships in Belgium, Slovakia and Russia. She works for economic practice. One of the undertaken her research trends is the issue of formulating and implementing sustainable development strategies by both businesses entities as well as local government units. The result of this work has been her co-authorship of documents such as The Integrated Development Strategy of the Functional Area of the Oder Communes (2015), The Integrated development strategy for education and labor market in the Functional Area of the Oder Communes (2015), The Sustainable Development Strategy in the district of Zielona Góra (2013), A program to promote entrepreneurship for the city Żagań (2016).

## 105. Using Science and Technology to Support the Sustainable Development of Beijing City Sub-center

Wu Feifei, Li Chenglong, Cheng Yingying

### ABSTRACT:

Beijing's urban administrative department has moved from the city center to the suburb of Tongzhou District. However, the development level of Tongzhou District is still far behind that of the city center, which made it difficult to undertake its government service function as nation's capital city Beijing. This paper comprehensively analyzes the current situation and challenges of public service, urban security, and ecological environment in Tongzhou District by using survey, interview, and literature research methods. On this basis, this paper proposes that, as an important node in the Beijing-Tianjin-Hebei urban agglomeration, Beijing City Sub-center has an urgent need to improve the city's quality and become a new magnetic pole in the region. The main conclusion of this paper is that the sub-center should focus on supporting urban management with technological innovation. The key tasks are: shaping a low-energy urban operation model, improving the risk prevention capabilities of urban hardware and software, forming an urban management ecosystem under a big data environment, and effectively turning the sub-center into a greener, smarter, and more resilient city. This paper is of great significance for improving the urban management of Tongzhou District and promoting Beijing's multi-center sustainable development.

*Keywords: Urban Management; Urban Agglomeration; Green City; Smart City; Resilient City*

**Wu Feifei** is the senior project supervisor and assistant researcher of the Beijing Decision-making Consultant Center. Professional background: history, sociology, management. Research interests: sustainable development in megacities; urban management; social governance. Publications: Beijing City Sub-center (monograph); Science and Technology Innovation Think Tank (monograph).

**Li Chenglong** is the project director and assistant researcher of the Beijing Decision-making Consultant Center. Professional background: management, economics. Research interests: project management; public policy. Publications: Demand-oriented New Innovative Policy Tools: Innovation Vouchers (academic papers); Strategic Ideas and Evaluation System for Building a National Science and Technology Innovation Center in Beijing (academic papers).

**Cheng Yingying** is the research assistant of the Beijing Decision-making Consultant Center. Professional background: management, sociology. Research interests: human resource management; public policy; social governance. Publications: A Perspective on How to Promote The Level of Refined Management of Capital Cities with Standardization (academic papers); Experience and Enlightenment of Urban Management in Washington, DC, USA (academic papers).

## 106. Ethical Aspects of Sustainable Development in Polish Enterprises Transporting Animals for Slaughter

Anna Budzik, Tomasz Budzik

### ABSTRACT:

The issue of sustainable development is currently the subject of interest of researchers from many scientific fields. In the context of sustainable development, the subject of animal welfare is being increasingly regarded as essential. Ensuring animal welfare is now the key issue for public opinion, livestock farmers, animal rights organizations, entrepreneurs, transport companies and slaughterhouses. Animal welfare should be applied according to "Five Freedoms", which are: freedom from hunger and thirst, freedom from pain and injury, freedom from physical discomfort, freedom to express normal behavior, freedom from stress and fear. The purpose of this article is to present the current state of awareness about ensuring animal welfare as an element of sustainable development on the example of Polish companies which transport animals to slaughterhouses. As a research method the authors used the survey method. The questionnaire was addressed to the owners of enterprises transporting slaughter animals and to drivers of these enterprises. The results found out that there is a serious need to change the operation of the transport system due to ethical aspects.

*Keywords: Sustainable development, animal welfare, animal transport, transport management*

**Dr Anna Budzik** is assistant professor at Częstochowa University of Technology, Faculty of Management in the Institute of Logistics and International Management. Her field of interest refers to sustainability in transport, sustainability in tourism, sustainability in cities and transport management. Special attention Dr Anna Budzik pays to animal welfare which was incentive for writing her doctoral thesis entitled "Management of animal transport in the aspect of sustainable development".

**Dr Tomasz Budzik** is assistant professor at Częstochowa University of Technology, Faculty of Management in the Institute of Finance, Banking and Accounting. His field of interest refers to public finance, strategic management and management of sustainable development. His doctoral thesis was entitled "Strategic concepts of the restructuring of car communication enterprises".

## 107. An Examination of Attendee Behaviour in Relation to Littering and Unsustainable Behaviours at Music Festivals

Briony Whitaker

### ABSTRACT:

Littering is a persistent problem that occurs daily worldwide. Not limited to environmental concerns, the social, health, and aesthetic implications of littering have long been of interest to researchers. Existing research into littering frames the problem as the result of a severance between the action itself and an awareness of the consequences. The growing significance and choice of music festivals in the UK has resulted in an increase in the number of attendees (UK Music put this figure at 30 million live music fans attending events in 2017), which has unfortunately had a 'knock-on' effect regarding the amount of waste produced during and after these events by attendees. The environmental repercussions of a large gathering, like the UK's Glastonbury Festival (where around 170,000 attendees descend on the same farm land each year) for example, are significant and have become a rising concern. The conflict between the injunctive norm (of sustainable and 'green' behaviour) of a festival audience and the descriptive norm (how the audience actually behave) will be an underpinning theory in this research. The question that this presentation will address is, how can we challenge these solidified and accepted group norms at festivals to encourage sustainable behaviour amongst attendees?

*Keywords: Festival, Events, Sustainability, Behaviour Change*

**Briony Whitaker** is an Events Management and Marketing Lecturer, and the Programme Leader for the BA (Hons) Business and Events Management undergraduate degree in the Bristol Business School at UWE Bristol, UK. Briony is currently undertaking a PhD, which focuses on sustainability and behaviour change at music festivals. Sustainability at music festivals, and sustainable event practices are Briony's specialist areas, having worked in the festival and events industries for a number of years, and her teaching at UWE Bristol is further enhanced by her active research in these fields.

## 108. DIY/DIT Development: New Spaces, Modes and Materials

Michelle Christensen, Florian Conradi, Gesche Joost

### ABSTRACT:

In times where we witness the disruptions of digitalization, and the subsequent potentials and consequences for society, the need for novel approaches to digitalization and sustainable development are more crucial than ever. A potentially new path to strengthening social self-determination within this process is currently emerging through hacker- and maker communities, in which citizens participate directly in the invention and development of locally relevant technical artefacts. In the context of a research trip in February 2019, twenty site-visits accompanied by in-depth interviews with local stakeholders were carried out with makerspaces and tech hubs in Ghana, Togo and Kenya. The spaces visited ranged from interdisciplinary academic makerspaces to independent makerspaces attempting to foster local, bottom-up, social, and inclusive innovation – such as for instance the Agboghloshie Makerspace Platform situated in the world's largest E-Waste dump in Accra, Changehub situated at Langata Women's Maximum Security Prison in Nairobi, Woelab in Lomé prototyping the African DIY smart-city under the maxim #siliconvillage, or the Pwani Teknowgalz at Swahilipothub, who strive to bring women into the Islamic Tech-Ecosystem in Mombasa. With representatives from these spaces, we explored the emerging movements of what one might term 'Do-it-Yourself Development', novel modes of 'Glocal Making' – building inventions that resolve local issues utilizing the means of a global open-source community, as well as the strive to formulate an alternative vision of this critical practice, which moves beyond pre-scripted Western values and ideas of 'innovation'. Might these movements provide a potential for a socially and culturally sustainable relationship between digitization and development through their DIY- (Do-it-Yourself) DIT (Do-it-Together) driven approaches?

*Keywords: Digitalization and Development; Maker and Hacker Culture; Do-it-Yourself Development; Inclusive Social Digital Innovation*

**Michelle Christensen** is a sociologist and designer exploring the spaces in between these realms – her research interests include the politics of objects and the social dimension of 'thingness'. Michelle wrote her Ph.D. in the field of Design Research at the Berlin University of the Arts. Prior to this, she studied political sociology at Roskilde University (B.A.), conflict studies at Utrecht University (M.A.), gender studies at the University of Amsterdam (M.Sc.), and integrated design at the Köln International School of Design (M.A.). As a researcher she has worked at the Design Research Lab (UdK Berlin) and the German Research Centre for Artificial Intelligence (DFKI). She has taught courses in conflict analysis, gender studies and design methods at universities in the Netherlands and Germany, most recently as a visiting professor at the Anhalt University of Applied Sciences in Dessau. Currently, she is heading a research group on critical making at the UdK Berlin / Weizenbaum Institute together with Florian Conradi.

**Florian Conradi** studied communication design at the University of Applied Sciences Mainz, political design at the Sandberg Institute / Gerrit Rietveld Academy in Amsterdam (M.F.A.), integrated design at the Köln International School of Design in Cologne (M.A.), and wrote his Ph.D. in the field of

Design Research at the Berlin University of the Arts. Since 2008 he has been initiating socio-political design projects with institutions in the field of critical media and political advocacy, carrying out field research in Europe, the middle East, West and East Africa. He has taught critical approaches to design and design methods at amongst other places the Köln International School of Design, the UdK Berlin, and as a visiting professor at the international Master program in Integrated Design at the Anhalt University of Applied Sciences in Dessau. Currently, he is heading a research group on critical making at the UdK Berlin / Weizenbaum Institute together with Michelle Christensen.

**Gesche Joost** is Professor of Design Research at the Berlin University of the Arts and heads the Design Research Lab. Working with international partners, she develops research and teaching projects on the future of the digital society. Her focus is on human-machine interaction and social-digital participation. She is currently in charge of the “Interactive Textiles” research unit at the German Research Centre for Artificial Intelligence (DFKI). Since 2017, she has been on the board of directors of the Einstein Center Digital Future Berlin and in the steering group of the Weizenbaum Institute for the Networked Society. She chairs the German Society for Design Theory and Research and sits on the board of the German Academic Scholarship Foundation. She served as the German government’s Federal Internet ambassador to the European Commission from 2014 to 2018. She is a member of the synod of the evangelic church in Germany (Evangelische Kirche in Deutschland, EKD) and a member of the Goethe Institute. In 2016, she founded Calliope gGmbH, which offers digital learning to children from the 3rd grade and up.

## 109. Poverty, Parents and Culture

Greg Clydesdale

**ABSTRACT:**

The propensity of some ethnic groups to experience poverty is one of the most enduring problems to face policy makers today. The purpose of this paper is to present an alternative explanation and solution to this form of poverty. It is a conceptual-analytical paper which draws on existing literature. It begins by examining the relationship between culture and economic systems. Literature from economic history, anthropology and developmental psychology are drawn on to present an interdisciplinary view. The paper notes that, after the enlightenment, Western societies took the lead in creating a knowledge economy with high levels of income. This has implications for parental practice. Knowledge economies place an emphasis on cognitive skills, however parental practices in many societies emphasize motor skills. Policy implications are discussed. The foundation for human capital is laid in the first five years, a time in which parents are the first teachers. The paper calls for a deeper understanding of human capital development and consideration of factors such as cognition, self-regulation, time and academic socialization.

*Keywords: Poverty, inequality, culture, ethnicity, parenting*

**Greg Clydesdale** lectures at Lincoln University in New Zealand. His expertise is economic growth and human welfare. He is the author of four books; *Waves of Prosperity* published by Robinson, London; *Entrepreneurial Opportunity* by Routledge, *Human Nature* by Gower-Ashgate; and the *Art of Business* by Robinson. Up-coming books are *Policies for Economic Growth and Ethnic Poverty*.



## 110. Becoming a Social Organism: Action Research Turns Environmental Research into a Sustainable Act

Rakefet Kenaan

### ABSTRACT:

"What is the impact of my work on the environment"? asks designer and educator Victor Papanek in the first chapter of his revolutionary 1995 book, *The Green Imperative*. Papanek's words drive my teaching every day and lead me to question the meaning and purpose of contemporary sustainability research in education. I will present my research, a case study that takes place at Shenkar College of Engineering, Design and Art in Tel-Aviv, where I teach. Showing how an ordinary qualitative research study evolved into Action Research involving a group of twelve faculty members, who, by sharing their sustainable ideas, projects and curricula raised awareness of ecological and social issues through the power of art and design. The goal of the group was to prepare collective work for an exhibition on environmental issues, however through the creative process - meetings, acting, connecting and sharing - we gave birth to a new social organism that had a transformative effect on the members as teachers and individuals. The research underlines the important challenges of contemporary social research in sustainability science and, on Papanek's behalf, the importance of individual's impact in environmental education.

*Keywords: Education, Design, Art, Action Research, Social, Holism*

**Rakefet Kenaan** is an artist, a curator, a professor, a faculty member, an environmental studies student and a curriculum advisor on sustainable and social innovation courses at Shenkar College of Engineering, Design and Art in Tel Aviv. Along her academic career she has been creating conceptual art for internationally renowned magazines, books and design firms for more than twenty years. Her most recent solo exhibition, *Composition Bird* at Periscope Gallery in Tel Aviv, raised environmental and ethical issues with felted objects. She has received her BFA from the Cooper Union for the Advancement of Science and Art in New York City and she is currently completing her MS in Environmental Education at The Porter School of Environmental Studies at Tel Aviv University. Kenaan believes in a unified systemic vision of sustainability – an integration of life's biological, cognitive, social and ecological dimensions. By working through the social dimensions of sustainability she strives to inspire people, especially students, towards an equitable, democratic and optimistic society that respects human dignity and liberty with a deep understanding that we are all part of life's fabric.

## 111. Presentation and Discussion of an Evaluation Model for Transdisciplinary Research Projects

Rebecca Schulte, Andrea Heilmann

### ABSTRACT:

2001 the academic advisory council for global environmental changes published the social contract for the big transformation. They require a worldwide sustainable change in economics and society. TDR should support the transformation e.g. by participatory research, learning and knowledge production for successful real-world-projects and knowledge sharing by transformative education. Particularly in connection with the demand for a third mission in universities, a major transformation of society and the pursuit of sustainable development, it might surprise there is still no balance between Mode-2-Science, of which TDR is a part of, and the monodisciplinary Mode-1-Science. In literature various examples for a punctual or in part project-accompanying evaluation of TDR might be found, but however, the crucial long-term consequences of these projects are not taken into consideration here - although they are required by many authors. Regarding the increasing importance of a third mission for universities, an increase in the meaning of TDR projects is expected. Therefore, new tools and methods are needed. In this paper an evaluation model is presented and applied that enables a project-related evaluation. The first use of the evaluation model and the quality criteria for research are presented and discussed.

*Keywords: Transdisciplinary Research, Transdisciplinarity, Evaluation, Transformation, Sustainability*

**M. Eng. Rebecca Schulte** works as research fellow at Harz University of Applied Sciences in Germany. As part of TransInno\_LSA research project she investigates methods for measuring the impact of third mission projects, such as transdisciplinary research projects. In her master's thesis she focused on developing a holistic evaluation model for transdisciplinary research projects. Existing methods come with two insufficiencies: the lack of a generally accepted definition transdisciplinary research projects and the lack of taking the crucial long term effects of such projects into consideration. Both problems were addressed in her thesis. The contribution to this conference is based on her findings.

**Prof. Dr. Andrea Heilmann** holds a University Diploma in Water Engineering (Dipl.-Ing.) from the Dresden University of Technology (1990). She took her doctoral degree in the field of waste management at Dresden University of Technology (1999). Since 2000, she has been a Professor in Environmental Management and Technology at the Harz University of Applied Sciences (Germany). Her research focusses on climate protection and adaptation as well as on sustainable development particular on transdisciplinary research projects.

## 112. Evolution of Sustainability Research: From Concept to Measurement and Assessment

Natalia Kuosmanen, Timo Kuosmanen

### ABSTRACT:

This paper explores evolution of the emerging field of sustainability research, starting from early conceptual discussions on sustainable development towards more recent development of sustainability measurement by different indicators, tools and methods. We first summarize the current state of the sustainability research and then discuss emerging challenges such as modeling synergies and tradeoffs between sustainability goals and their targets. Finally, we explore future research directions in this field, in particular the importance of sound aggregation rules for holistic measurement of sustainability, which is a critical step toward policy impact and making policy advice for sustainable development.

*Keywords: Sustainability, sustainable development, synergies and tradeoffs, sustainable development goals, total sustainability*

**Dr. Natalia Kuosmanen** is researcher at the Natural Resources Institute Finland (Luke), working in Bioeconomy Policies and Markets Group within the Bioeconomy and Environment Unit. She holds a doctoral degree in agricultural economics from the University of Helsinki, M.Sc. degree in environmental sciences from Wageningen University, the Netherlands, and B.Sc. degree in engineering from Kiev Polytechnic Institute, Ukraine. Her research interests include development of quantitative methods and frameworks for measuring overall sustainability based on techniques of productivity and efficiency analysis; dynamic modeling of nutrient stocks and flows based on material balance accounting.

**Prof. Timo Kuosmanen** from Aalto University School of Business, Finland, is a leading expert of axiomatic nonparametric modeling of production, consumption and investment decisions. His main application area has been productivity and efficiency analysis in such sectors as agriculture, banking, education, energy, environment, transportation, and utilities. His recent research focuses on the development of new methods for probabilistic modeling of random noise, inefficiency, and observed heterogeneity in the axiomatic nonparametric setting.

## 113. The No-Alternative Scenario to Alternative Analysis under NEPA

Kalpana Murari

**ABSTRACT:**

Emerging economies and the absence of equivalence to alternative analysis. Environmental impact assessment report is the primary document required to assess sustainable issues of any business/commercial activity, but it is most often overlooked for serious anomalies in its presentation to the public. It is most often incomplete and there is a need to review the standards of impact assessment procedures that help preserve environmental integrity among developing nations. The absence of sanctions for improper assessment of environmental, social and economic impacts of commercial activities, including extraction of natural resources by domestic and multinational corporations undermines sustainable development across the globe. The procedures in place to study various impacts of a business activity that enable access to genuine, verifiable and actionable information by the public require review and oversight by a third party institution. The standardization of procedures and universal harmonization of enforcement and compliance regulations by nations has to become a topic for debate at various academic levels to gain importance. Essentially, EIA reports in large infrastructure projects serve as a blueprint for low carbon economies. Developing nations ignore vital provisions relating to the listing and analysis of alternatives in their attempt to meet developmental goals. Environmental protection is to maintain the ecological integrity of habitats and ecosystems. EIA reports, ultimately, aim at conserving and replenishing the reserves of natural resources. Judicial law has played an important role in highlighting the importance of alternatives in EIA. It is therefore important as how developing nations use the provision for the alternative analysis under their environmental laws. This paper will discuss EIA under the auspices of International law relating it to Sustainable Development. It shall emphasize the significance of providing alternatives in large infrastructure projects that have enviro-social impacts including transboundary effects and how the use of “no-action” alternative helps preserve and conserve a nation’s resources, reducing negative impacts.

*Keywords: Alternative Analysis, no-action alternative, sustainability, EIA, NEPA*

**Kalpana Murari** is an independent researcher focussing on topics relating to environmental law, climate change and energy laws, sustainable development laws. A lawyer by profession, quit legal practice in 2009 to complete her Masters in Environment and Natural Resources Law at the Lewis and Clark College, Portland, Oregon, USA, 2010. Subsequently, she has been writing on various topics and presenting papers at various international conferences to gain more expertise on chosen topics.

## 114. Children Unwelcome - Socio-Physical Study of Children's Community Toilets Usage in Mumbai's Slums

Tamar Akov, Sunanda Satwah

### ABSTRACT:

In light of growing concerns among experts to achieve SDG 6.2 by 2030, and in view of the Swachh Bharat Mission – an initiative launched in 2014 to eradicate open defecation in India, this field research-based paper sets out to explore the physical and social enabling environment for children of informal settlements in Mumbai to use communal toilets. First stage of the research involved shortlisting 6 community toilets across 3 informal settlements and documenting them for spatial conditions and user experience. 2nd stage consisted of data collection from 986 random samples across all ages and genders, regarding usage patterns. The findings revealed that only 6.7% of the users were children. This led to the 3rd stage, where 80 children ages 14 and younger were interviewed, to understand their concerns, perceptions, habits and related interactions with adults. The research, spanning 18 months, exposed deficiency in the enabling environment to promote and sustain usage of toilets and diminish open defecation. Especially for children, the research revealed aspects of discrimination in the form of inequity bye-laws; inappropriate ergonomics; adult intimidation; and parental indifference to sanitary choices. The paper suggests systemic children-specific mitigations, thereby lending a voice to their unique concerns and needs.

*Keywords: Children's Sanitation, Enabling Environment, Discrimination & Exclusion, SDG 6.2*

**M. Des. Tamar Akov**, Adjunct faculty, School of Sustainability, Inter-Disciplinary Center, Herzliya, Israel.

Tamar Akov is an Industrial Designer specializing in user centered design solutions for populations at the Base of Pyramid, in the fields of sanitation and small living spaces. In the past 5 years Ms. Akov has been researching, teaching, advising on and implementing these topics in academic institutions and NGOs across Israel and India. Ms. Akov heads the National Technical Committee within Habitat for Humanity India (HFH) and since 2017 leads a survey among hundreds of tenants in HFH-assisted houses, in states across India. 2016-2018 Ms. Akov lead community-focused initiatives in India and Israel, aimed at empowering vulnerable segments of the population. Among them designing toilet blocks in a rural government school. Tamar holds a Bachelor's degree in Visual Communication and a Master's degree in Industrial Design, both from Bezalel Academy of Art and Design, Jerusalem.

**Prof. Sunanda Satwah**, Asst. Prof. CTES College of Architecture, Mumbai, India. Sunanda Satwah is an Architect, Environmental Consultant, Educator and Writer. She specializes in Healthcare Architecture and in the past 17 years has designed several hospitals, educational institutions, housing projects and a central prison, in India. Ms. Satwah is an Assistant Professor at CTES College of Architecture, Mumbai and also teaches Environmental Studies at Rachana Sansad's School of Interior Design. An avid reader and prolific writer, she has published more than 50 articles and 7 academic papers in several national and international journals on the theme of Architecture and Environment. Ms. Satwah has a keen interest in alternate architecture, biomimicry and psychology of spaces. She also enjoys music, painting and nature walks. Sunanda graduated from Rizvi College of Architecture (2002) and acquired Masters in Environmental Architecture from Rachana Sansad's Institute of Environmental Architecture (2016). She currently lives in Mumbai, India.

## 115. Culture as Fourth Pillar of Sustainable Development: Perspectives for Integration, Paradigms of Action

Francesca Sabatini

### ABSTRACT:

The article explores the relationship between culture and sustainable development. In particular, it advocates the introduction of cultural sustainability as a fourth pillar of sustainable development. A first section explores the existing research on the topic, and focuses on the notion of culture itself and how it should be intended in the context of sustainable development. Then, the existing debate over culture's position among the three pillars of sustainable development is presented. In the second section, the issue of assessing sustainability in cultural policies is addressed. The proposed approach suggests the interconnection of economic, socio-environmental and artistic dimensions of evaluation, thus going beyond the instrumental view of culture which is common in the sustainability discourse. Culture-driven sustainable development is presented in the third section: policies concerning the use of tangible heritage, the development of cultural districts and participatory practices for the performing arts are analysed; their ability to combine artistic merit and positive impacts on the other dimensions of sustainable development is eventually assessed. Conclusively, cultural policies and practices prove able to generate sustainable growth at all levels, not least the creative and artistic one; as a consequence culture can be fully considered a fourth pillar of sustainable development.

*Keywords: Culture, policy, culturally sustainable development*

**Francesca Sabatini** after having graduated summa cum laude in Innovation and Organization of Culture and the Arts at the University of Bologna, with a thesis in cultural economics on Italian Opera Theatres, Dr. Sabatini has entered a PhD program at the Mediterranean University of Reggio Calabria. She has experience in the research field of cultural economics and has worked as project manager and intern at Opera di Roma in 2018.

## 116. Cultural Heritage: The Forgotten Resource for Marketing and Sustainable Development of the Local Communities

Calin Veghes

### **ABSTRACT:**

Under the slogan “Our heritage: where the past meets the future”, European Union has declared 2018 as the European Year of Cultural Heritage in an unprecedented attempt to enable people to become more interested in and involved with the cultural heritage, and to recognize its universal value and importance in the future development of the individuals, communities and societies. In spite of an increased acknowledgement and extending capitalization, the employment of the cultural heritage, in its tangible and intangible forms, as an asset the local communities may benefit from is still limited. The contribution of the cultural heritage to the sustainable development remains less relevant and illustrates the extent toward which individuals and the local communities, consequently societies, are able to preserve, promote and make the most of this forgotten resource. Paper explores the connections between the cultural heritage, marketing and the sustainable development of the local communities based on the secondary data regarding the involvement, perceived importance, access and participation related to the cultural heritage in order to assess if local communities grasp and consider the potential of this heritage to support their sustainable development through of an appropriate marketing effort.

*Keywords: Cultural heritage, sustainable development, local communities, marketing*

**Dr. Calin Veghes** is Professor of Direct Marketing and Cultural Marketing at the Bucharest University of Economic Studies, Romania. He carries out teaching and research in the area of Cultural Marketing aiming to substantiate that arts become culture through marketing and that cultural resources, properly preserved, restored, promoted and capitalized, can be successfully employed to support the sustainable development of the local communities. He is a member of EMAC (European Marketing Association), AMA (American Marketing Association) and ARMAD (Romanian Direct Marketing Association) and has a strong passion for history, cultural tourism and football (as a devoted fan of UTA Arad).

## 117. Chances for Socially Sustainable Development in Guam as One of the Remaining Colonies

K.- Ulrike Nennstiel

**ABSTRACT:**

While colonialism might have some positive effects on the economy in the short term, it definitely impedes socially and ecologically sustainable development. Based on expert interviews with representatives of various NGOs and university professors, the paper discusses the chances of socially sustainable development in Guam as one of the colonies left today. The results show that colonialism today is having no less negative impacts on sustainable development than in the past. The economic conditions may have improved for some people, but socioeconomic inequalities have hardly decreased. Within former communities as well as among newcomers, many families are disrupted, addiction and suicide have spread particularly among youths and the number of homeless people is increasing. Colonial and postcolonial conditions have to be overcome as a precondition to sustainable development.

*Keywords: Colonialism, social and ecological sustainability, Pacific islands*

**Prof. Dr. K.- Ulrike Nennstiel** is Professor of Sociology at the Dpt. of Social Welfare/ Social Policy at Hokusei-Gakuen-University in Sapporo, Japan. She has done research on social development, inequality, wellbeing, education and youth, as well as on economic, social and ecological sustainability.



## 118. Challenges and Prospects for Economic Development in Pacific Island countries: Importance of Human Resource Development

Noriyuki Segawa

### ABSTRACT:

For Pacific Island countries, the achievement of economic self-reliance has been a core goal since their independence. However, mainly due to geographical disadvantages such as small land area and population, scattered islands and population, and remoteness from major markets, they have failed in developing export industries and then achieving the goal. Indeed, the economy in most countries in this region has been reliant on aid and remittances. In this paper, challenges and prospects for economic development in Pacific Island countries will be examined by considering cases of success and failure in agriculture (success and decline of squash industry in Tonga) and tourism (in Palau as success case and Saipan as failure case) industries. This examination found that poor governance and weak management system have mainly prevented sustainable development of these industries, although agriculture and tourism industries have potential to become a driver of economic development. Towards the achievement of industry development and economic self-reliance, Pacific Island countries are strongly urged to develop human resources conducive to the promotion of good governance and the establishment of effective management system.

*Keywords: Pacific Island, Economic Development, Economic Self-reliance, Human Resource Development*

**Dr. Noriyuki Segawa** is Professor in the Faculty of International Studies at Kindai University, Japan. He obtained his PhD in Political Science from the University of Sydney, Australia, in 2009. His current research interests are ethnicity, nationalism, multiculturalism, democratisation, economic development and nation building in Southeast Asia and Pacific Islands, with a special focus on Malaysia and Fiji. His major publications include *National Identity, Language and Education in Malaysia* (Routledge, 2019) and *Ethnic Interaction and National Integration in Malaysia* (Palgrave, forthcoming) and papers in *Sojourn, Nationalism and Ethnic Politics, African and Asian Studies, Asian Studies Review, and Commonwealth and Comparative Politics* and in Japanese journals.

## 119. Bloodfeud and “Kanun” in the Context of the Modern State

Gelanda Shkurtaj

### ABSTRACT:

In societies where it has been recognized and operated, blood feud is described as a possibly old and non-civilian mechanism, but often effective in limiting violence. Indeed, both in form and substance the phenomenon itself is hard to be perceived and understood by the modern citizen of every country of the world, including Albania, where it is still active in some regions in respect of “Kanun”. In fact, the Albanian word 'Kanun' describes the body of traditional norms and ideas governing blood feud. Its application or merely its existence in moral and legal norms, makes a society safer, certainly referring to a society where the power of central body, namely of the state, either did not exist or lacked. The greatest anthropological dilemma is just there, why does the Kanun work in a modern state? In societies where blood feud has been present as a regulatory element of social relations it is accepted that its abolition or decline occurred only when another subject (state), took over to intervene in these conflicting relationships, and to provide the resolution and regulation of social and economic relations through enforcement of rule of law (or public order). And the question arises by itself: why the Albanian state did not take over the blood feud solution by use of public order? The Kanun does not recognize the state or the state does not recognize the Kanun? And why? It is not easy to get into such historic and social dilemmas, but a modest effort should be made. The answer to this fact should be found by the history of Albania. As a questioning remark, the reason for the long life of Kanun, rather called as self-regulatory law of the society, is due to the historic absence of a state on the side and interests of its citizens.

*Keywords: Blood feud existence, Kanun code, Modern State, Albanian constitution, social sustainability*

**Gelanda Shkurtaj** is an academic lawyer and public notary, living in Tirana (Albania). She accomplished the full Masters' Degree diploma in Biology at Tirana University in 1997. During 2002-2011 she worked as a Court Expert and Technical Adviser at the General Prosecutor's Office in Liguria Region (Italy) and simultaneously she obtained the second full Master's Degree diploma in Law, in 2009. In 2011 she obtained an LLM in international and national Taxation Law, at Genoa University. In 2012 she moved to Abruzzo Region (acting as a managing authority) in Italy, where she kept the position of Senior Project Manager of E.U.Funds (Instrument of Pre-accession), Cross Border 2007-2013 Program. She won the public competition and established her notary office in Tirana in 2013, During the years 2013-2017 she held the position of Lecturer of Fiscal and Business Law at New York University in Tirana. In 2018 she obtained a PHD in Legal Anthropology on “The bloodfeud and Kanun in Albania”, at the Academy of Albanological Studies. Since October 2018, she held the position of Civil and Taxation Law, full time lecturer at “Epoka” University, in Tirana (Albania).

## 120. Social Identity, Anxiety about Future and Beliefs as Predictors of Attitudes toward Global Risks

Timofei Nestik

### ABSTRACT:

The results of three empirical studies of attitudes toward global risks are presented. In the 1st study the components of a person's attitude to global risks were explored (N = 924, Russian adults): affective (anxiety about global risks); cognitive (belief in the need for cooperation to predict and prevent global risks; fatalistic ignorance; religious authoritarianism as a means of salvation; acceptability of radical solutions and survival of some at the expense of others; optimism about the global future; apocalypticism), as well as behavioral components (willingness to participate in preventing global risks; willingness to take action to protect themselves and their loved ones from global risks). In the 2nd study psychological determinants of personal attitudes toward natural and anthropogenic global risks were identified (N = 547). Structure modeling reveals three groups of predictors of the attitudes to global threats (group identification, anxiety about the future, as well as beliefs - social axioms and moral foundations), their psychological functions are described. Global, civil and local identification increases the value of human survival, global risk concerns, cooperation for forecasting and preventing global risks. Anxiety about the future mobilizes the person, makes it more susceptible to alarmism about global threats in news feeds. The beliefs fulfill a stabilizing function through increased conformity at the face of a possible catastrophe (religiosity, moral foundations of purity and authority), the function of pre-adaptation to the threats of the future through increasing tolerance for uncertainty (resilience, moral foundations of fairness and care, social axioms of social complexity and reward for application), as well as a protective function in a situation of scarcity of social resources to cope with risks (social cynicism, fate control). The 3rd study (N = 633) was concerned with adults' attitudes toward the threat of nuclear war. It was shown that the support for a preventive nuclear attack is related to a syndrome of several traits: strong positive ethnic identity, belief in possibility to survive in a nuclear war, fatalism, negative past, short extension of future perspective, and low social trust. Based on the results, it is suggested that a positive image of future and clarification of opportunities are more effective in global long-term risk prevention than an alarmist approach. Directions for further research are proposed.

*Keywords: global risks, social trust, identity, anxiety about the future, social axioms, moral foundations*

**Dr. Timofei Nestik** is leading researcher at the Moscow Lomonosov State University and Head of the laboratory of social and economic psychology at the Institute of psychology, Russian academy of sciences, Russia, were investigates on psychological aspects of foresight, attitudes toward global risks and consequences of new technologies adoption in everyday life.

## 121. Strengthening Sustainable Attitudes Focusing on Beauty. SMILE World Tour. A Concept on Ethics, Environment and Music

Nikolaos Dimitriadis

### **ABSTRACT:**

The "Smile" World Tour uses music to promote environmental justice among young people worldwide. All of the world's populations deserve a life free of environmental poverty. SMILE is a way of life. It is an idea that combines values and ethics, the love for creation and the environment, using music as a way of expression. It began with the smile of some children in the Kibera slum in Nairobi, Africa, and through a song traveled all over the world to confirm that happiness comes through the unselfish offer to man and nature, the whole creation. In my presentation I will share through media (pictures/videos) moments of the tour from all five continents and I will present interaction examples between students from diverse cultural backgrounds that promote active student engagement. I consider them good practices mostly in the area of study abroad education that helps us identify important areas for curriculum development that could be further used in teaching and learning frameworks.

*Keywords: Ethics, teaching, music, creation*

**Dr Nikolaos Dimitriadis** is a Professor of World Religions at ACT, Greek ambassador of Globethics.net in Geneva, board member and head of the environmental campaign at the Center for Ecumenical, Missiological and Environmental Studies (CEMES), a frontman in the indie-rock band "The Gang". Nikolaos received a B.A. in Theology from Aristotle University of Thessaloniki, continued his studies in the History of Religions (University of Bologna, Italy), and gained his Ph.D. in Interfaith Dialogue (University of Thessaloniki). He has participated in many conferences, where he presented his post-doctoral research on the interreligious and theological aspects of climate change. He is also a singer/composer; He concluded his first World Tour (2016) in Australia/ New Zealand.

## 122. Exploring Partnerships to Promote Sustainable and Integrated Knowledge Translation: The ReNEW Project

Halley Silversides, Suzanne Goopy, Cesar Suva, Jonathan Chapman

### ABSTRACT:

What does it mean to settle and integrate well into a society? The Canadian government is committed to settling 1 million people by the year 2021. While this is a positive and progressive stance, non-profit agencies that serve newcomers must be quick to adapt to this changing landscape while finding ways to foster creative and sustainable solutions to Canada's growing number of migrants from a variety of cultures and contexts. The Refugees and Newcomers Emotional Wellness (ReNEW) study for Best Practice is a 3-year Canadian multi-site project examining the factors that effect the emotional wellness of newcomers across the Canadian prairies. This research is a unique integrated knowledge translation partnership project between the University of Calgary and the Calgary Immigrant Educational Society (CIES). The study uses a mixed-methods approach: surveying over 700 newcomers and those who work with them, as well as conducting interviews and focus groups. Findings will be used to develop recommendations and directly inform a multi-site service delivery pilot program scheduled for 2020. Using preliminary data and analysis from the ReNEW study, this paper discusses the importance of partnerships when working with newcomer populations and how such intersectoral partnerships encourage, create, and advance sustainable research and service delivery.

*Keywords: Immigration, newcomers, partnerships, knowledge translation, integration*

**Halley Silversides** is a research associate on the ReNEW project at the University of Calgary. She holds a Master of Library and Information Studies from McGill University as well as a Bachelor of Arts in history and anthropology and a Bachelor of Nursing. In addition to her role on the ReNEW team, Halley works as a Registered Nurse in the area of mental health and addictions in Calgary, Canada. Halley's work has located her on the forefront of knowledge translation and knowledge management and sustainable knowledge practices as it pertains to newcomer health both within the ReNEW team and beyond.

**Dr. Suzanne Goopy** is the principal co-investigator of the ReNEW project and is an associate professor at the University of Calgary. She holds a PhD in Social Anthropology with specialization in social relations, cultural practices and health from School of Humanities, Griffith University, Australia. One of her main areas of research is Intercultural Practices with Newcomers.

**Dr. Cesar Suva** is the principal co-investigator of the ReNEW project and is the Program Development Manager at the Calgary Immigrant Educational Society. Cesar obtained his PhD at the Australian National University in Canberra, Australia writing on notions of power and authority vis-à-vis the state in a borderland Muslim society in the southern Philippines. His interest in the challenges of minority integration has gained practical expression in his role as Program Development Manager at CIES, where he has taken on the responsibility of developing new programs that respond to the changing needs of Canada's newcomers. He has taught at universities in Canada, Australia and the Philippines, and has presented on the topic of minorities at conferences in North America, Europe, Asia, Oceania and the Pacific.

**Jonathan Chapman** is the programs coordinator for the livable streets division of transportation planning at the City of Calgary. He holds a Master of Arts in philosophy from the University of Calgary.

## 123. Regional Sustainable Development Strategies in Russia: The Case of the Volga Region

Sergey Kirillov, Sergey Nikonorov, Alla Pakina

### ABSTRACT:

In the context of reduced revenues from raw materials exports, the policy of sanctions and restrictions on access to capital and technologies, Russia faces an acute problem of finding new models of economic development. As world experience shows, economic growth cannot resume simultaneously throughout the country, it will inevitably be concentrated in specific regions – points of growth. Since the Federal government do not present a convincing strategy, some regions take the initiative and build their own development strategies. In this regard, the experience of the Volga region with a developed economy, the powerful drivers of growth, and large differences in social parameters is quite interesting. The main development goals were indicated in the Strategy of Privolzhsky Federal district's development up to 2020. We analyzed them on the example of 7 subjects of Federation. Despite ambitious plans, the negative dynamics of many indicators remains. The growth of GRP has not reached the planned values, and social indicators continue to decline: there is a migration outflow of population and a decrease in natural population growth. Analysis of the each region's strategies showed that there are significant risks of development, the overcoming of which requires non-trivial decisions of regional governments.

*Keywords: Development strategies, growth points, regional governments, sustainable development, social risks*

**Dr. Sergey Kirillov** is Professor at the Department of Environmental Management at the Faculty of Geography, Lomonosov Moscow State University, Russia. He is a corresponding member of the Russian Ecological Academy (REA), a member of the International Society of Ecological Economics (ISEE), a member of the New Economic Association (NEA), a member of the Association of Russian Social Geographers (ARGO), a member of the Russian Geographical Society (RGO). In 2007 he defended his thesis on the topic: "The Ecological-Economic System of Urban Land Use: Management Mechanism and Regulation Tools" with the award of the degree of Doctor of Economics. His research interests are related to the economic mechanism of environmental management, urban land tenure, the development of regional ecological and economic systems, recreational environmental management.

**Dr. Sergey Nikonorov** is Professor at the Department of Environmental Economics at the Faculty of Economics, Lomonosov Moscow State University, Russia. In 2014 he defended his thesis on the topic: "Ecological and economic foundations of the development of recreational areas on the example of the Chuvash Republic". Currently, he takes part in the following projects: Ecological and economic problems of rational nature management and environmental protection in Russia (MSU), Theoretical and methodological foundations for the sustainable development of Russian regions on the example of the Volga regions (RFBR), The impact of socio-economic processes on ecosystems and ecological the economic value of the Baikal Natural Territory (RFBR), The study of water purification systems of industrial enterprises of ASEAN countries and Russia, the evaluation of new technologies and the possibility of creating a platform for Corollary ASEAN and the Russian-member countries in the field of scientific and technical cooperation for wastewater treatment.

**Dr. Alla Pakina** is a Leading Researcher at the Department of Environmental Management at the Faculty of Geography, Lomonosov Moscow State University, Russia. In 1997 she defended her thesis on the topic "Regional systems of specially protected natural territories: formation and management". Scientific interests are related to environmental and economic aspects of environmental management, green economy, specially protected natural areas, assessment of the state of the urban environment, sustainable development of regional economic systems. She is currently working on projects: Theory and Practice of Environmental Management for Sustainable Development of Territories (MGU), Environmental Management Features in the Central Ecological Zone of Lake Baikal (RFBR), Theoretical and Methodological Foundations of Sustainable Development of Russian Regions on the Example of the Volga Region (RFBR).

## 124. Care Services in the System of Helping the Elderly in the Perspective of the Polish Red Cross

Dorota Rynkowska

**ABSTRACT:**

The aging of the society, which implies many changes, both in the social and cultural sphere, is a multifaceted demographic process. Its basic determinants include mortality and reproduction, which in turn are shaped by social, economic, technological or civilizational changes. These changes are related, among others, to an aging population with chronic diseases and diseases specific to the elderly. The natural consequence of aging and co-existing chronic diseases is the occurrence of dependence and an increase in the demand for care services among seniors. The role of self-government and non-governmental entities in the area of support, assistance and provision of care services for seniors is gradually increasing. The aim of the article is to present the forms and scope of care services for seniors in the perspective of the Polish Red Cross.

*Keywords: Seniors, care, support, care services, Polish Red Cross*

**Dorota Rynkowska**, PhD, is an Assistant Professor at the Institute of Sociology, University of Rzeszow, Poland. She is sociologist. Author of 2 monographs, co-author of 3 monographs, autor and co-author of more than 40 articles in journals and chapters in monographs. Her scientific and research interests include issues related to the sociology of old age, an aging society, and the issues of care and social work.



## 125. Investing in Water Purification Infrastructure in an Emerging Market: Some Considerations for Impact Investors in South Africa

Stephen McCallum, Suzette Viviers

### ABSTRACT:

This study investigated the role that impact investors could play in the water purification infrastructure sector. Impact investors are individuals and institutions that invest in companies, organisations and funds with the aim of generating social and environmental impact alongside financial return. These investors are increasingly interested in emerging markets such as South Africa. As scholars have raised concerns about investors and companies profiting from the provision of a basic human right, the views of 20 experts were also gauged on this topic. Semi-structured personal interviews were conducted with key role players in the South African impact investment value chain (mostly investors) and the water provision system. Interviewees saw an important role for private sector investment in water purification infrastructure given government's inability to meet the growing demand for potable water. Participants were, however, wary of private-public-partnerships and felt that investors and companies will only face a moral dilemma if they overcharge consumers for purified water. Impact investors should give careful consideration to domestic water users' ability to pay as well as their needs and expectations. The development of a blended financing model is proposed.

*Keywords: Impact investing; emerging market; water purification infrastructure; South Africa; basic human rights; ethical concerns*

**Stephen McCallum** is a lecturer in the Business Management Department of Stellenbosch University, South Africa. His research has primarily focused on impact investing in South Africa with a specific focus on investments in water purification infrastructure. Given the need for funding models to support acceptable access to potable water, he has also partnered with private sector to investigate innovative financing of water. Further interests include the investigation and development of social and environmental impact measurement and management models to support impact investments.

**Prof. Suzette Viviers**, Stellenbosch University, South Africa. Her research interests centre on different aspects of responsible investing including impact investing and shareholder activism. In recent years she has also conducted research on board diversity, director overboardedness, the dividend distribution decision and corporate citizenship.

## 126. Mainstreaming Cooperative Societies into Peacebuilding Knowledge Networks for Sustainable Peace and Development in Nigeria

Benjamin Adeniran Aluko

### **ABSTRACT:**

Evidently, peace is a critical ingredient of socio-economic development in any polity. Unfortunately, the Nigerian State has become a theater of violence. Thus, socio-economic activities that could engender sustainable development of the nation are interrupted and hindered. The implication is that the top-down approach (track one diplomacy) for conflict prevention and peacebuilding in Nigeria needs to be complemented by the other tracks. In light of this, the question that looms large now is how do we energise the civil society to become an effective stakeholder in building peace in Nigeria? The paper examines how the nation's plethora of cooperative societies can be mainstreamed into peacebuilding knowledge networks for effective participation in peacebuilding activities. Qualitative data collected were interrogated using Stone's elucidation of the role of knowledge networks to articulate strategies for reinventing the nation's cooperative societies to become effective agents for promotion of peacebuilding works. The paper concludes that these efforts would greatly strengthen the collaboration between the state and society required for effective implementation of and peacebuilding initiatives meant to engender sustainable peace and development in the country.

*Keywords: Peacebuilding, Cooperative Society, Development, Knowledge Networks, Mainstreaming, Nigeria*

**Dr. Benjamin Adeniran Aluko** is Senior Research Fellow and Coordinator of Peace and Conflict Studies Programme, Institute for Peace and Strategic Studies, University of Ibadan, Ibadan, Nigeria, where he obtained degrees in Philosophy and Peace and Conflict Studies. He teaches postgraduate students Fundamentals of Peacebuilding and Development. He has attended and presented papers at many international conferences. Between October, 2016 - December, 2016, Aluko was at the Woodrow Wilson International Center for Scholars (WWICS), Washington DC, United States, as a Southern Voices Network for Peacebuilding Scholar. He has published in many international journals and coedited a book titled: *The Security Sector and Conflict Management in Nigeria*, with Prof. I. O. Albert and Dr. O. O. Isola.

## 127. Billion Oyster Project Curriculum and Community Enterprise for Restoration Science (BOP-CCERS) Phase II Expansion; Career and Technical Education Pathways

Lauren B. Birney

### ABSTRACT:

This project will advance efforts of the Innovative Technology Experiences for Students and Teachers (ITEST) program to better understand and promote practices that increase student motivations and capacities to pursue careers in fields of science, technology, engineering, or mathematics (STEM) by expanding and testing an innovative curriculum model that features locally relevant, problem-based learning. The curriculum model is organized around habitat restoration in New York harbor and will engage students and teachers in a sequence of activities that span the elementary, middle school, and high school grades of the nation's largest urban school system. Students will conduct field research in support of restoring native oyster habitats, and the project will be implemented by a broad partnership of institutions and community resources, including Pace University, the New York City Department of Education, the Columbia University Lamont-Doherty Earth Observatory, the New York Academy of Sciences, the New York Harbor Foundation, the New York Aquarium, and others. The project focuses on important concepts in the geological, environmental, and biological sciences that typically receives inadequate attention in schools: watersheds and the roles of keystone species. This project builds on and extends the Billion Oyster Project of the New York Harbor School. The project model includes several interrelated components, including: a teacher education curriculum that includes a component for elementary teachers that focuses on restoration science; a student learning curriculum; a digital platform for project resources; an aquarium exhibit; an after-school STEM mentoring program and a near-peer mentoring program; community based restoration science hubs, and advanced methods in restoration science for high school students that includes genetic barcoding (species ID), environmental DNA sampling and analysis, bacterial monitoring, and basic water chemistry analysis. The project targets students in low-income neighborhoods with high populations of English language learners and students from groups underrepresented in STEM fields and education pathways. The project will directly involve 97 schools, over 300 teachers, and approximately 15,000 K-12 students over a period of four years. A quasi-experimental, mixed-methods research plan will be used to assess the individual and collective effectiveness of project components. Multivariate analyses will be used to identify effective program aspects and assess the individual effectiveness of participation in various combinations of program components. Questions guiding the research include: 1. How does the project influence motivation and preparation to pursue STEM careers among K-12 students? 2. What aspects of the project have a positive influence on underrepresented students' motivation and preparation to pursue STEM careers, compared to other students? And 3. What curricular innovations associated with the project contribute to heightened awareness of and intent to pursue STEM careers among students? This award reflects NSF's statutory mission and has been deemed worthy of support through evaluation using the Foundation's intellectual merit and broader impacts review criteria.

*Keywords: Environmental Restoration, Sustainability, STEM education, Citizen Science*

**Lauren B. Birney** Ed. D. is a pre-eminent urban STEM educator with a concentrated focus in obtaining STEM industry grants from the NSF and other agencies as well as private foundations. Dr. Lauren Birney has over 30 years of experience at secondary and university teaching positions on both the West Coast and East Coast. She currently is the Director of the STEM Collaboratory NYC™ at Pace University and an Assistant Professor of STEM Education in the School of Education in New York City preparing both pre-service and in-service teachers in the areas of curriculum and instruction, classroom management, teaching methodologies and research techniques. Her areas of research focus upon project based learning with an emphasis on environmental restoration based sciences. Establishing opportunities for underrepresented students in STEM Education continues to be an integral component of all her work. Dr. Birney earned a B.A. in Biology/Chemistry from the University of San Diego, an M.A. in Counseling and an Ed. D in Educational Leadership from the University of Southern California Rossier School of Education. Dr. Birney enjoys traveling, running, swimming and yoga.

## 128. Uneven Demographic Changes as a Challenge to Provide Access to Education in the Rural Areas in Poland

Agnieszka Wojewódzka-Wiewiórska, Maciej Stawicki

### **ABSTRACT:**

Dynamic changes in the number of inhabitants of rural areas in Poland entail necessity to adjust the market of public services and determine the way they are provided. In practice the intensity of this process varies both interregional and intra-regional. The objective of the study was to present how the uneven demographic changes including number of children affect organization of primary education by rural municipalities in selected Polish region. Research tasks: 1) to present spatial diversity of demographic changes and number of pupils and schools; 2) to identify and classify the ways of organization of education by rural municipalities depending on demographic processes. Research used data provided by Central Statistical Office for period 1998-2017. Moreover, data collected in own research (interviews conducted in 2018 and 2019) allowed to recognize public education services perception by local governments and rural society.

*Keywords: demographic changes, public services, schools, rural society, Poland*

**Dr. Agnieszka Wojewódzka-Wiewiórska** is a researcher at the Faculty of Economic Sciences, Warsaw University of Life Sciences. Her research interests focus on rural areas development including the role of social capital.

**Dr. Maciej Stawicki** is a researcher at the Faculty of Economic Sciences, Warsaw University of Life Sciences. His research interests focus on regional and local development, the role of EU funds in development and tourism.

## 129. A Proposal to Develop Resilience through Sustainability: Implementing a Sustainable Principle through Creativity and Innovation

Ilive Rita Peltier

### **ABSTRACT:**

The Caribbean has been experiencing an increase in the occurrences of natural disasters recently. The concern is not just how often these disasters materialize, but their level of intensity, heightened destruction, number of lives lost, and population displacement that present complex changes for Caribbean leaders and policymakers. In the wake of such disasters, the conversations that have become fashionable are focused on making the islands in the region resilient. However, the emphasis seems to be sporadic and fragmented, with each island or small groups of islands trying their best to become resilient on their own. The intent of this article is to bring forth an understanding that if the Caribbean is to practice the science of resilience, it has to gain a clear comprehension of sustainability. Thus, regional leaders must rethink the actions and practices that have resulted in the present day predicament, while finding ways to adapt and transform the economic, environmental, and equity of the islands through education. These three factors must not be dealt with separately. Instead sustainable development has to be practiced holistically.

*Keywords: Sustainability, sustainable revolution, sustainable development, resilience*

**Ilive Peltier** is a Creative Leadership for Innovation and Change Doctoral student at the University of the Virgin Islands whose track of study is Creativity. She has decided to do research in sustainability and sustainable development after her home island of St John USVI was completely destroyed by Hurricane Irma. The realization that people deserted the island in the aftermath which created a shortage of individuals to assist with the rebuilding process, drew her to do the topic.

## 130. Creativity: A New Paradigm for Education for Sustainability

Ilive Rita Peltier

### **ABSTRACT:**

The world has moved from the Industrial Age into the Age of Technology, however, most teaching and learning methods and strategies have remained the same. The complex issues that the world is facing due to a direct result of climate change call for a different type of teaching and learning. Teachers have to find creative ways to teach while allowing students to use their creativity for developing innovative solutions for already existing problems and problems that may arise in the future. It is not just methodology and strategy that has to change. This article focuses on a new paradigm for the education system; education for sustainability through creativity. The focus has to be on collaborative learning. Community schools and project-based learning, both of which encourage economic growth, while fostering environmental and social awareness must be at the forefront of education. With this new paradigm as the way forward, Caribbean nations have to look within the region for the answers they need for their own way of education for sustainability.

*Keywords: education, sustainability, sustainable development, creativity, innovation*

**Ilive Peltier** is a Creative Leadership for Innovation and Change Doctoral student at the University of the Virgin Islands whose track of study is Creativity and a former educator. She has decided to do research in sustainability and sustainable development after her home island of St John USVI was completely destroyed by Hurricane Irma. The realization that people deserted the island in the aftermath which created a shortage of individuals to assist with the rebuilding process, drew her to do the topic.

## 131. Teaching EFL in a Rural Context through Place Based Education: Expressing Place Experiences Through Short Poems

Rocio Del Pilar Salazar Jaramillo, Yeyson David Espejo Malagon

### ABSTRACT:

This action research study implemented Place Based Education (PBE) in a rural school in Colombia, as the basis to teach children English as a foreign Language (EFL) and about their rural context. Considering the English standards from the national bilingual program proposed by the Colombian government, we found that these were not being part of the English classes taking place in the rural classrooms where we were doing our research at. In other words, the English classes were decontextualized from the local needs and context of students. Not only had we found disconnection regarding language teaching, but also from students towards their immediate rural place and customs. Having these findings in mind, we incorporated PBE in order to approach EFL students, to both, English language and their rural environment. Children learned about their local and its uniqueness through short poems. Also, they were guided to write their own short poems about their place experiences. These poems were gathered and turned into a poetry book. It was evidenced that PBE encouraged children to learn about their local and created on them emotional bonds towards it. Moreover, while making the book dedicated to their rurality, students developed prosocial actions inside and outside their classrooms.

*Keywords: Place Based Education, Rural Education, Poetry, EFL*

**Rocío Del Pilar Salazar** is a Spanish and English teacher from the National Pedagogic University of Colombia. She is currently working as a primary school teacher in a bilingual private school. She enjoys doing research regarding teaching English as a Foreign Language and different situated practices. One of her main objectives is to specialize in elementary and primary teaching. She hopes to keep on researching on meaningful teaching practices such as Place Based Education in order to approach students to significant experiences.

**Yeyson David Espejo** is a Spanish and English teacher from the National Pedagogic University of Colombia. He is currently working as a high school English teacher, not only teaching English as a foreign language, but also English Literature. He feels a strong affinity towards research regarding teaching English as a Foreign Language. He has worked with meaningful methodologies such as: Place Based Education and Project Based Learning. One of his main goals is to keep on doing research and specialize on social studies subjects.



## 132. The Role of Environmental Law Education for Sustainable Development

Hanna Audzei

### ABSTRACT:

National imperative of sustainable development is a strategy that combines into one social, economic and environmental policies. Before the environmental legal education, people should be trained to prepare people for life in an innovative type of society. To achieve this goal of environmental and legal education should be reoriented to the form of human ecological and legal culture and eco-innovative type of legal thinking and a willingness to innovative type of environmental and legal action. The successful solution of this and other problems requires the foundation of science, including environmental law. According to the author, environmental and legal education should be based on the principles of unity, the historical interrelation between nature and society, on the desire to harmonize these relations. Ideological work, which brings new values to the national consciousness, through education and enlightenment, and must convey to every citizen every idea and principles of sustainable development. The upbringing of morality and respect for the environment must remain a priority in the activities of the media.

*Keywords: Sustainable development, environment, law, ecology, responsibility, culture*

**Dr. Hanna Audzei** has a wide experience of teaching since 2001. The focus of her academic activity is in the sphere of the environmental law, nature protection, sustainable development. She provides for bachelors and masters such courses as Ecological law, Legal protection of the environment. Dr. Audzei supervises masters' and doctoral thesis. Since 2012 she is an expert of Aarhus Centre in Grodno. Dr. Audzei got an experience of the Tempus project implementation, Central European Initiative, UNDP, EU cooperation programmes. As a head of the department she took part in course design and their implementation at the faculty. She has successfully participated in TRADIR Study visit, which was held at Link Campus University in Rome (Italy) (3 May-22 May 2015; 29 November-4 December 2015), seminar "Mediation in Civil and Commercial Disputes" (INTESA ADR - Roma, May 18, 2015) etc.

### 133. The Integration of Social Issues in Design Education as a Catalyst towards Social Sustainability

Kika Ioannou Kazamia, Marianna Kafaridou

**ABSTRACT:**

This research focuses on how to enforce the social pillar of sustainability through design education and more specifically through an assignment of a life project given to design students. This need has been derived from previous research that suggests that the change should focus on two sectors: Education and industry. This suggestion is realized with a proposed life project that aims at the promotion of literacy in a children's hospital environment. All students are involved in a creative design process starting with the problem analysis. It requires the identification of the nature and requirements of the task and the development of a plan of ideas and mechanisms to answer the brief. They proceed with visual and textual research and conceptual development. Students generate concepts, produce rough ideas and explore a number of visual answers to the brief, which are analyzed in terms of project objectives. Project development is the following step where ideas are further developed and explored to adopt appropriate methods and techniques. The final stage of the process includes the final presentation, critique, feedback and then its realization. Through the above design process, the students acknowledged the needs of the community and how social issues can be assimilated in a design project to satisfy and enhance the social pillar of sustainability.

*Keywords: Design, education, social sustainability*

**Kika Ioannou Kazamia** is an Associate Professor in the Architecture Department at the University of Nicosia. She holds a BA degree in Interior Design, an MA degree in Education, and she is currently pursuing her PhD. Her area of concentration and research interests as an artist, interior designer and educator is the implementation of environmental issues in art and interior design practice, and the importance of environmental education. She taught at the Intercollege Larnaca Campus from 1989 to 1996, as a Lecturer in the Interior Design Programme. Since 1996 she has been a lecturer at the Intercollege /University of Nicosia teaching in the Interior Design Programme. In parallel to her academic profession she has been involved in interior design practice since 1988. Other research interests include: Sustainable Interior Design, Sustainable Development and Design, Change through Learning and Recycling and Design. Her work has been presented in various conferences and exhibitions in Cyprus and abroad including the International Design Biennale and Biennale Interieur.

**Marianna Kafaridou** is an Associate Professor and Associate Head in the Department of Design and Multimedia of the University of Nicosia. She has also served as a part-time faculty at the Cyprus University of Technology. She holds a Master's Degree in Education, B (A) Degree in Visual Communications, H.T.I Diploma in Civil Engineering and a Diploma in Dance Studies. She has served as an Acting Head of the Department for seven years. She presented her research at academic international conferences. Her research interests include design education and learning theories, sustainable and corporate design. She is a practicing graphic artist and active in commercial design work. She has also represented Cyprus in European Art Festivals, and her artwork has been accepted in International Art Festivals locally and abroad.

## 134. The Teaching of Sustainability in Higher Education: A Case Study of Malaysia

Graeme Atherton

### **ABSTRACT:**

This paper will examine how sustainability is addressed in learning & teaching in higher education (HE) in Malaysia. Addressing climate sustainability is a key priority as Malaysia pledging to cut emissions by up to 40% by 2020 and 45% by 2030, relative to 2005 levels. To achieve these goals, changes will be necessary in behaviour and lifestyle. Education is a key instigator of these changes and the single strongest predictor of a person's awareness of climate change. The research hypothesis is that HE teaching and learning practice in Malaysia is informed by an understanding of sustainability issues. The methodology combines a survey of over 200 teaching staff from across faculties and 4 focus groups with a total of 40 staff in two different HE providers. The findings show that different understandings of what sustainability exists amongst teaching staff and while the majority would like to incorporate sustainability into teaching, they are unsure how to do so. Changes in method, curriculum and focus will be required to or HE teaching in Malaysia to be fully informed by sustainability issues. Further research is required to understand what these changes constitute, and their impact on attitudes to sustainability amongst students.

*Keywords: Higher education, teaching, learning, curriculum*

**Dr. Graeme Atherton** is an adjunct professor at the Centre for Higher Education at Sunway University, Kuala Lumpur, Malaysia. His research interests focus on education related sustainability issues in the global context, with particular focus on South East Asia.

## 135. The Role of Technology Stewardship in Building Understanding of Sustainability Issues in a Saudi Arabia ICT Training Course for Teachers

Afrah Alkhalaf

### **ABSTRACT:**

This paper discusses how sustainable education could be integrated effectively in an ICT training course for pre-service teachers in Saudi Arabian context via practicing technology stewardship. Since the publication of Our Common Future report in 1987, many scholars, teachers, and practitioners have encouraged to re-envision sustainable education and integrate its aspects within current curricula and practices. The aim of that integration is to achieve transformative learning in people knowing, doing and relating aspects – balancing cognitive, psychomotor and affective domains. This paper focuses on how that learning happens via the dialogues that take place in the digital habitat. Technological stewardship refers to the negotiated selection and configurations of technology by communities as a means of extending their 'digital habitat'. Discoveries of the affordances of the technologies as that habitat develops extends the information landscape and opportunities for shaping new understandings and practices (Wenger et al., 2009). The sense making, dialogue and collaboration afforded through these processes, provide a dynamic through which understandings of sustainability can be nurtured and habits of mind be challenged. This interactional relationship between technology and the community's members forms a key part of the action cycles of the investigation, connection, and reflection in this research. The paper concludes with reflection on the findings and the potential of technology stewardship as an element in transformative learning for sustainability in teacher training.

*Keywords: Technology stewardship, sustainable education, transformative learning, community of practice*

## 136. Effects of 13-year no-till on soil C and its distribution in different size fractions

Nkanyiso Justice Sithole, Dr. Lembe Samukelo Magwaza

### ABSTRACT:

The decline in soil fertility resulting from the reduction of SOC has been widely reported. Studies are in conclusive on how long-term addition of C through biomass impact on C distribution in soil aggregates and its effects on soil aggregate stability and infiltration in semi-arid areas. Therefore, the study assessed long-term changes in total SOC (TSOC), aggregate-associated C, particulate organic C (POC), aggregate stability and infiltration under different tillage systems. The three tillage systems were conventional tillage (CT), rotational tillage (RT) and no-till (NT) both with permanent cover. The results found no differences ( $p > 0.05$ ) on TSOC across the tillage treatments. POC C, however, differed ( $p < 0.05$ ) across the treatments where it increased in reduced tillage treatments. Carbon associated with large aggregates differed marginally with tillage treatments with CT having 29.7, RT 36.6 and NT 38.0 t/ha, respectively. However, differences ( $p < 0.05$ ) were observed in small macroaggregates with NT having highest concentration followed by RT and CT, respectively. Soil aggregate stability was higher under NT and RT and was correlated with the high infiltration rate in these treatments. The results of this study indicate that reduced soil disturbance improves physical protection of SOC, soil structure and infiltration..

*Keywords: aggregate-associated C, soil organic matter, mean weight diameter*

**Dr. Nkanyiso Sithole** is a Post-Doctoral Research Fellow at the University of KwaZulu-Natal. He also works as a reviewer for Moses Kotane Institute. He is working on conservation agriculture where he is investigating its impact on soil quality in semi-arid regions of South Africa. His interest is on carbon dynamics in soil, soil fertility and sustainable agricultural management systems.

**Dr. Lembe Samukelo Magwaza** is a senior lecturer at the University of KwaZulu-Natal in the Department of Crop and Horticultural Science. Magwaza is an experienced researcher, with focus on preharvest factors affecting postharvest performance of citrus & subtropical fruit. He has a very good knowledge of issues relating rind physiological disorders of citrus fruit, non-destructive quality evaluation and postharvest handling of fresh fruit.

## 137. Adapting Indigenous: A Path To Communicate Slow Fashion To Consumers. (A case study of indigenous Kala Cotton)

Rakhi Wahee Pratap

### ABSTRACT:

Slow fashion is definitely the need of the hour, but for an effective outcome and global acceptance, it should disseminate among consumers instead of being limited to the academic arena and high end retail. A focused consumption of indigenous skills and raw material into mainstream market can help sustainable products reach out to the consumers.

After a devastating earthquake in Kutch (Gujarat), a local value chain was needed to cushion the farmers and weavers from the market fluctuation. Indigenous raw material was required, which is the most water and energy efficient across the value chain to preserve agriculture and artisan livelihood. Kala cotton is among a few varieties of genetically pure cotton grown in India 5000 years back. In 2005 resurgence of Kala Cotton was taken up by an NGO, "KHAMIR" along with local bodies to regulate farmers, weavers and concerned artisans. The indigenous variety of cotton has unique features befitting as a sustainable fashion fabric for the future. A case study of Kala Cotton (a sustainable indigenous cotton variety) has been taken up for the study. The cotton fiber was redundant during colonial regime in India which has been able to re gain commercial opportunities through careful planning. Identification of its unique properties befitted the present requirement of sustainable production practices and resource conservation. Kala Cotton effectively represents as a sustainable product for slow fashion and has inspired many similar fibers.

Objective: To identify indigenous resources and skills to strengthen sustainability.

To create commercial opportunities by connecting local producers and global consumers.

*Keywords: Indigenous, Resource conservation, Local, Global, Slow fashion*

**Ms. Rakhi Wahee Pratap** is an Associate professor in textile department, she has keen interest in sustainable practices in design and non design areas. She believes in first imbibing before preaching sustainable design practice, it encourages a practical perspective to strengthen learning. She specializes in Indian textile craft. Training programs with craft base are an integral part of her academic experience.

## 138. Project GENESIS: An All-inclusive Model to Perform Cost-Benefit Analysis of Green Roofs and Walls

Cristina Matos Silva, Carlos Oliveira Cruz, Inês Teotónio

### ABSTRACT:

Green roofs and walls are one of the most promising alternatives for retrofitting existing built environments and tackle urban challenges in a multifunctional way. Yet, these solutions are being confined to specific countries or cities, as their economic contribution has not been fully examined nor accepted. GENESIS is a trans-disciplinary project funded by FCT that pretends to develop a systematic and comprehensive model to support potential investors or decision-makers balancing the costs with the benefits of green roofs and walls, in a life cycle perspective. The main objective of the project is to enhance existing cost-benefit analysis of green roofs and walls through multidisciplinary approach that will allow the replication in different regions and type of infrastructures. This will be achieved by: i) monetizing and including all economic, social and environmental benefits in the analysis in order to weight different types of benefits (even those that are typically difficult to estimate because they have no market value) and establish a comparative basis of alternative solutions and potential scenarios; ii) comprising an uncertainty model to cope with climate change and inaccurate forecasting of benefits/costs modelling and; iii) including multi-criteria mode in order to incorporate users and investors preferences. This all-inclusive model crucial for a wide spreading in is green roofs and walls and a more sustainable development in cities.

*Keywords: Green roofs/walls; Cost-benefit analysis; Investors/users preferences; Sustainable urban development*

**Cristina Matos Silva** is an Assistant Professor at Instituto Superior Técnico, University of Lisbon, Portugal. She is a Civil Engineer with experience in design of structures and foundations, building services, thermal and acoustic behavior as well as construction supervisory services and technical assistance. Her research interests focus on green infrastructures, namely on their economic evaluation, thermal and acoustic performance and maintenance planning in a Mediterranean climate. Her work also evaluates the efficiency of rainwater harvesting systems, at both urban and building scale and when combined with green roof solutions. She is a of founding member and vice-president of the Portuguese Green Roof Association and a member the Portuguese Technical Committees for green roofing and rainwater harvesting systems in buildings.

**Carlos Oliveira Cruz** is an Assistant Professor at Instituto Superior Técnico, University of Lisbon, Portugal. He is a Civil Engineer with experience in economic evaluation of infrastructures, life-cycle cost modelling and long-term management models of infrastructures.

**Inês Teotónio** is a Civil Engineering PhD student at Instituto Superior Técnico, University of Lisbon, Portugal. She has completed her Master's Degree in November 2016, during which period she started to have perception of green infrastructures while assessing their economic value when installed in existing build environments. Her present research interests focus on sustainability of infrastructures and built heritage, in particular the socio-economic feasibility of green infrastructures concerning variable dimensions, quantification of their costs and benefits and multi-criteria approach in cost-benefit analysis to include users / investors preferences.

## 139. What Do We Know about the Economic Value of Nature-Based Solutions: A Review of literature

Inês Teotónio, Carlos Oliveira Cruz, Cristina Matos Silva

### ABSTRACT:

Nature-based solutions are being proposed as resilient adaptative measures towards the objective of achieving a more sustainable environments. In cities, green infrastructures such as green roofs and walls are effective strategies at a technical level. The social benefits and ecosystem-services of these solutions are fully acknowledged, however large-scale implementation is required in order to their true potential to be noticed. While most investors are still unwilling to make initial investments and bear higher maintenance costs, comparing costs and monetized benefits in a long-term perspective allows recognizing the real economic value of nature-based solutions and the need for financial incentives. This paper undertakes comprehensive literature of existing studies on economic evaluations on nature-based solutions, and green infrastructures in particular. 62 papers published between 2003 and 2018 were examined, referring to 123 case studies of NBS all over the world. Conclusions show the influence of methodologies and respective parameters on the economic results. Examined parameters included scope of the analysis (i.e., costs and benefits accounted according to the project's purpose), assumed time horizon and discount rates, and scale of analysis (i.e., building or urban). The literature review has an important role in identifying the basis and need for future research and promoting the wide spreading of nature-based solutions.

*Keywords: Nature-based solutions; Green roofs/walls; Economic evaluations; Sustainable urban development*

**Inês Teotónio** is a Civil Engineering PhD student at Instituto Superior Técnico, University of Lisbon, Portugal. She has completed her Master's Degree in November 2016, during which period she started to have perception of green infrastructures while assessing their economic value when installed in existing build environments. Her present research interests focus on sustainability of infrastructures and built heritage, in particular the socio-economic feasibility of green infrastructures concerning variable dimensions, quantification of their costs and benefits and multi-criteria approach in cost-benefit analysis to include users / investors preferences.

**Carlos Oliveira Cruz** is an Assistant Professor at Instituto Superior Técnico, University of Lisbon, Portugal. He is a Civil Engineer with experience in economic evaluation of infrastructures, life-cycle cost modelling and long-term management models of infrastructures.

**Cristina Matos Silva** is an Assistant Professor at Instituto Superior Técnico, University of Lisbon, Portugal. She is a Civil Engineer with experience in design of structures and foundations, building services, thermal and acoustic behavior as well as construction supervisory services and technical assistance. Her research interests focus on green infrastructures, namely on their economic evaluation, thermal and acoustic performance and maintenance planning in a Mediterranean climate. Her work also evaluates the efficiency of rainwater harvesting systems, at both urban and building scale and when combined with green roof solutions. She is a founding member and vice-president of the Portuguese Green Roof Association and a member the Portuguese Technical Committees for green roofing and rainwater harvesting systems in buildings.



## 140. A Framework for Assessment of Sustainable Value Chain Practices in Manufacturing Firms

Bhavya Pande, Gajendra Kumar Adil

### ABSTRACT:

Manufacturers face the challenge of implementing and assessing sustainable practices in their organizations due to several factors including lack of availability of clear guidelines and tools. Porter and Kramer (2006) suggest a framework on how to capture the negative effects of an organization's primary and support value chain activities on the environment and society. In this paper, the framework suggested by them has been suitably modified to capture and organize sustainable practices relevant to manufacturing firms. Accordingly, a number of sustainable practices are identified through a detailed analysis of literature and incorporated in the developed framework. Further, in order to validate the potential of the proposed framework to be used as an assessment tool, feedback from a sustainability expert from the manufacturing industry was sought on the relevance, practicality, implementation potential and exhaustiveness of the enlisted practices. Going forward, the validated framework will be administered to assess sustainable practices in select manufacturing organizations. This study is part of an ongoing research on assessment of sustainability in manufacturing organizations.

*Keywords: Assessment of Sustainable Practices; Sustainable Value Chain Practices; Triple Bottom Line; Total Life Cycle Approach; Sustainable Manufacturing*

**Bhavya Pande** is a PhD Research Scholar at the Shailesh J Mehta School of Management, IIT Bombay, India. Prior to this, she has around 7 years of combined experience in academia and industry (IT and Textiles) and holds a post graduate degree (M.Tech) in Textile Technology. Her research interests include, sustainable manufacturing practices, sustainability assessment and manufacturing competitiveness. Currently she is working on her PhD research on Assessment of Sustainability in Manufacturing Firms.

**Dr. Gajendra Kumar Adil** is a Professor at the Shailesh J. Mehta School of Management, Indian Institute of Technology Bombay, India in Operations Management Area. He holds Ph.D (1994) in Industrial Engineering (University of Manitoba, Canada), M.Sc (1990) in Industrial Engineering (University of Regina, Canada), M.Tech (1987) in Mechanical Engineering (IIT-Kanpur, India) and B.E (1985) in Mechanical Engineering (GEC, now NIT, Raipur, India). He worked as an Assistant Professor at Bilkent University in Turkey and the City University of Hong Kong before joining IIT Bombay in the year 2000. He has also worked in industry as a technology transfer consultant at i2 Technologies (Dallas, USA) and as an industrial engineer at Bristol Aerospace Ltd. (Winnipeg, Canada). His publications have appeared in leading journals such as Operations Research, European Journal of Operational Research, IIE Transactions, International Journal of Production Research, Annals of Operations Research, International Journal of Operations and Production Management and Omega. His current research interests are in warehouse design and sustainable manufacturing.

## 141. Operational Sustainability using Block Chain: Driving Transparency in Conflict-Mineral Supply Chains

Kuntal Bhattacharyya, Achraf Zahid, Shikha Bhattacharyya

### ABSTRACT:

A triple-bottom line (TBL) approach to sustainability has shifted operational dynamics in the past quarter century. Today's global supply chains are more stretched than ever, therefore necessitating supply chain managers to be cognizant of the triple bottom line, which is germane to sustainable operations along the lines of economic, environmental, and social conditions. Conflict minerals are a case in point. While the global contribution of conflict minerals to economic profit is far-reaching, the impact of conflict minerals on environmental pollution and the associated social stigma provide equally compelling storylines. Transparency of information interchange across the three arms of triple bottom line is critical to the continued use of conflict minerals amidst strong international legislations and the challenges of compliance facing companies dealing with conflict minerals. The purpose of this article is to investigate the use of block chain technology to understand and objectify transparency in conflict mineral supply chains and international trade, underpinning the three broad avenues as depicted by the TBL. Block chain technology, by the power of its open distribution, provides a transparent and ethical way of capturing the mineral's journey along the supply chain while improving data quality and management of ambiguous sources.

*Keywords: Triple-bottom line, conflict minerals, block chain, transparency, operational sustainability*

**Dr. Kuntal Bhattacharyya** is an Associate Professor of Supply Chain Management at Indiana State University's Scott College of Business. He also serves as Director of the Center for Supply Management Research and is the Interim Chair of the Marketing & Operations Department. Dr. Bhattacharyya's research focuses on sustainable global sourcing, highlighting all aspects of the triple bottom line. Kuntal's research has been published in esteemed outlets like the Journal of Supply Chain Management, Strategic Outsourcing, Journal of Service Science Research, International Journal of Humanitarian Logistics and Supply Chain Management, and Advanced Mathematical Modelling, among others.

**Achraf Zahid** is a research scholar at the Scott College of Business and is currently working with Dr. Bhattacharyya on investigating the use of block chain technology for driving transparency in supply chains. Passionate by social and sustainable entrepreneurship, He has been involved in many projects such as the Global Business institute at the Kelly School of Business in 2014, which is an intensive entrepreneurship program sponsored by the US Department of States and designed for the benefit of the young leaders through the MENA region. After earning his Master degree in Finance in 2016, Achraf had his first professional experience in the Packaging industry where he served as a Credit Analyst for Tetra Pak Group in the Maghreb Region. Currently Achraf is pursuing a career in supply chain after graduating from the MBA program of Scott College of Business in fall 2019.

**Dr. Shikha Bhattacharyya** is the President and Founder of reTHink, Inc. – a think tank on trash management and environmental sustainability through collaborative gardening. Dr. Bhattacharyya is a recognized environmentalist in the State of Indiana and spends most of her time in educating the community on lifestyle changes that can impact the environment. She sits in the board of organizations like TREES, Inc. and has been recently recognized for her work in the National Public Radio (NPR) as well as Terre Haute Living, a leading community journal in the city of Terre Haute.

## 142. The Nexus between Private Investment and International Trade: The Case of the Baltic States

Lina Sineviciene

### ABSTRACT:

The importance of international trade and its impact on a country's sustainable development and sensitivity to external shocks through international linkages has received a lot of attention in the scientific literature and policy-making in recent years. International trade boosts industrialization and overall economic activities, which can ensure economic growth but it is not clear which component of economic growth is affected the most, and whether international trade affects private investment. The purpose of this research is to assess the impact of international trade on private investment by applying the business cycle synchronization theory. Research methods: analysis and synthesis of scientific literature, logic analysis, and synthesis, statistical methods. This study is carried out using annual data of the Baltic countries (Estonia, Latvia and Lithuania). The research results show that there is a high dependency of the Baltic countries' investment rates on major trading partners GDP growth. In the scientific literature, there is an empirical evidence that the main determinant of the country's private investment growth is the growth of countries' GDP. The results of this research show that the changes in trading partners' economies GDP growth can have a larger effect on domestic private investment than that of the domestic economy.

*Keywords: Private investment, international trade, business cycle synchronization, small open economies, Baltic States*

**Lina Sineviciene** is Associate Professor of School of Economics and Business, Kaunas University of Technology, Lithuania. She got the Doctoral degree in Social Sciences (Economics) from Kaunas University of Technology in 2013. Lina Sineviciene has published more than 30 scientific papers; she is a laureate of scholarships provided by the Lithuanian Academy of Sciences. She is a leader of 1 and a contributor of 3 scientific and research projects, including international ones. Her research interests are: capital investment, fiscal policy, fiscal policy interaction with private investment, sustainable development.

### **143. Involving Private Sector on the Poverty Eradication Program through Creating Inclusive Business Model (Study Cases of JAPFA Partnership Models on the Poultry Farming)**

Agus Mulyono, Retno Artsanti

**ABSTRACT:**

This paper will elaborate business partnership model on the farming business. This model will be viewed with inclusive business model point of view and social entrepreneurship approach to eradicate poverty. Inclusive business model is a model that allows community entering private sector business supply chains. Moreover, this paper will also use social entrepreneurship business point of view. This theoretical approach will elaborate the partnership model as business approach to eradicate poverty. JAPFA partnership model was established back in the late 90's when poultry business was harmed by the economic crisis. As feed-mill company and day-old-chick breeder, JAPFA was suffer most since their buyer (farmer) was shutting down their business. Based on the Indonesian statistic Office, between 1997-1998 there was live-bird population decreasing up to 27,8%. Those number impacted to declining of chicken carcass up to 30% on the 1998, and 5 % in the following year. Those number for company like JAPFA which are up to 70% its main business is feed-mill and day-old chick breeding means loss its profit up to 50%. In order to recover its business, JAPFA need to recover poultry industry. If the poultry industry was recovered then their company performance will automatically be leveraged. On the other hand, due to hyper inflations, most farmer is unable start their business since they do not have enough capital to start raising live-bird and start their business again. Those conditions lead JAPFA to create new business model that will both benefited for farmer and the company. The Partnership model was launched to address the main problem. JAPFA was join hand in hand with farmer who already have poultry house and equipment but do not have enough capital to start their business. JAPFA as feed-mill producer and day-old chick breeder was provide feed and DOC which farmer can raised it in their poultry house. Within the process, both JAPFA will provide technical assistance to ensure its chicken was well raised. And farmer will provide labor to ensure daily feeding and monitor its growth. After harvesting day, both JAPFA and farmer will sell live-bird to the wholesaler and then split its profit. This model at the first year able to support local farmer who are lack of capital to start their business. And after two years, this model able to revive poultry industry and return to the early conditions at the beginning of new millennia, 2001. Today, this model able to support early farmer or less capital farmer who are eager to start their poultry business. Not only provide feed and DOC, JAPFA today is able to create contract price at the beginning to support farmer if there is there is decreasing selling price. This contract price is helping farmer to reduce loss from the market volatility. As business model, JAPFA partnership model can be an answer to poverty eradication by creating new business opportunity for low-income farmer. Moreover, there are some experimentations that are combining this model with financial institution and government policy to provide soft-loan for farmer to start their business. This experimentation is able to help new-farmer to enter this business and provide them with certainty on market and supply. the other benefit is this model can be

replicate in the similar business activity especially farming based activity. Lesson learn that can be taken from JAPFA partnership model is that private sector can take part in the poverty eradication effort using the business approach. To do so, it requires willingness from the private sector to breakdown their business processes and open their business chain to involving community in it. Therefore, in line with the spirit of social entrepreneur, business approach on the poverty alleviation effort is possible and replicable.

*Keywords:*

**Agus Mulyono** is Social Investment Manager of PT Japfa Comfeed Indonesia Tbk. Managing Corporate Social Responsibility Program for JAPFA group in Indonesia.

**Dr. Retno Artsanti**, Head of Social Investment Dept of PT Japfa Comfeed Indonesia Tbk. Hold Doctoral Degree on Environment and responsible for corporate Social investment Program for JAPFA group In Indonesia.

## 144. Clustering for Economic Sustainability of the Traditional Jewellery Artisans of Ronthali: Challenges & Intervention

Mita Nath Bora

### ABSTRACT:

The rural jewellery artisans of Ronthali, a remote village in Assam, India, famous for its traditional gold, silver and ethnic jewellery craftsmanship, had been facing a dwindling business for several decades, inspite of such craftsmanship being a flourishing rural industry of the region in the 18th & 19th century. In an effort to revive them, in the year 2010, under the MSE-CDP scheme, livelihood interventions were made through clustering these artisans and make them economically sustainable. This research paper presents an analysis of a study conducted amongst the artisans of Ronthali to assess (a) whether cluster interventions helped enhance artisans' livelihood and income using the livelihood model 'The Coolie's Framework' and; (b) whether sustainable economic outcome has been achieved. The study relied mostly on primary data sources collected on the field. It concludes that though clustering for economic growth has several challenges, however, with a holistic approach and continuous multiple interventions over several years, certain successful changes were made. In the case of Ronthali, today, 410 artisans are into jewellery making as their primary occupation from the previous number of 150 & the ecosystem created has helped 280 artisans formalize and register their units.

*Keywords: Livelihood Clusters, Traditional Artisans, Sustainability, Holistic Approach, Ecosystem*

**Mita Nath Bora** is a Research Scholar of the department of North East India Studies, Assam Don Bosco University and have been involved in research in livelihood cluster, especially on poverty and artisan clusters. Her research papers have been published in several journals and international conference proceedings, like the 2015 3rd Asian SME Conference, the 2017 4th International Conference of Social Science, the 2018 International Conference on Sustainable Entrepreneurship Development based on SGD Goals; the 2019 International Conference on Sustainable Development at Indian Institute of Forest Management, MP where she recently won the best Research Paper Award amongst 111 papers presented. She is also a qualified HR and Law professional with more than 17 years of work experience and is presently the Project Head of CSR projects in Indian Institute of Entrepreneurship under Ministry of Skill Development & Entrepreneurship (MSDE).

## 145. The Importance of Infrastructures in the LDC's Economic Sustainable Development

Romeo Ciminello

### ABSTRACT:

Infrastructures are crucial for sustainable growth and inclusive development of Less Developed Countries. The problem in hypothesis is the African infrastructure gap, that neither governments nor civil society organizations seems to want to face promoting investments in tangible programs that take into consideration such kinds of important elements aimed to an equal durable and sustainable improvement. The paper starts with a description of recent initiatives to scale up infrastructure investment in Africa. The methodology follows a scheme of hypothesis, observations experiences and data collection from ADB and others Institutions. This research tries to let understand what is the connection between development and infrastructures for human being. The paper then uses insights from the literature on informed versus arm's length debt to discuss the structure of infrastructure financing. The economic growth and its goal, outlines the difference between structures and infrastructures. The main effort is how to give a weight to these latter in order to measure the empowerment of people that pass through their standard of living based on a system of strategic priorities centered on infrastructure package investments. Understanding the importance of infrastructures helps to satisfy needs and implement services that even if deemed not essential and substantial, are anyway most important to the growth of personal and social conditions. In this context the analysis is made on the difference between economic growth and development grounded on structure and infrastructure. The effort is to try to identify indicators able to evidence the contribution ratio of infrastructures to the development, how this can be measured and how they work in the different fields. The conclusion and implications are that to yield such potential global benefits, Africa's industrialization would have to be underpinned by a robust infrastructure financing program. This requires a global finance pact among advanced and developing countries, a shift in strategic approaches, and new models of financing.

*Keywords: Africa, Infrastructure Finance, Economic growth, Development Banks, Long-term Investors. Development indicators*

**Prof. Romeo Ciminello** (1952) Is Director of Hermes University in Rome ([www.unihermes.org](http://www.unihermes.org)) . Teaches Ethics and Development in the Faculty of Economics and Development of the Catholic University of Congo DRC - Kinshasa ([www.ucc.cd](http://www.ucc.cd)); he has taught since 1991 at several Italian universities: Cassino, (Business Banking) Salerno (Project Finance) Trieste (Corporate Finance, 1991-2005). He has taught at the Pontifical Gregorian University Faculty of Social Sciences (Economics of Development, 1994-2012). Degree in Political Science (1978); Specialization in Foreign Trade and International Marketing (1981); specializing in foreign exchange (1981); specialization in Business Banking (1985); certificate of civil Ombudsman (2011); Member of the UCC Board of Directors; supervisory manager at Banco di Roma - Unicredit (1976-2012); is President of the non-profit organization promoting ethics committee ([www.certificazionetica.org](http://www.certificazionetica.org)) is Scientific Director at the Company 4metx Ltd. ([www.4metx.it](http://www.4metx.it)). He is the author of several publications including Ethics Finance and Markets (Tipar Ed.1999); The Christian meaning of work (Tipar Ed.2006); The Christian meaning of Corporate Social Responsibility (Tipar ed. 2008);How to announce God to the Economics (MP Ed. 2018) author of the blog Diary of ethics([www.agenda-etica.blogspot.com](http://www.agenda-etica.blogspot.com)); promoter of several conferences on topics of ethical-social-political-economic and author of several articles in the specialized press. Research fields: development, ethics, economics, finance.

## 146. Focused Assessment: The Impact of Literacy on Microfinance Recipient

Karen Sugar

**ABSTRACT:**

While microfinance is recognized, and in some cases celebrated, as an important scheme in eliminating abject poverty, one could argue that access to financial resources alone doesn't necessarily translate into greater economic autonomy, increased security or empowerment. Moreover, it is much more complex, suggesting financial agency alone does not create empowerment but may be a catalyst to other variables that enable empowerment; other variables are contextually important and valuable in the process. To explore links between literacy and microfinance impact and success, WGEF (NGO) created an M&E tool to identify the outcomes in terms of empowerment in the following areas: -Impact on business profitability/viability. -Self confidence. -Social involvement. -Household stability. -Overall socio-economic impact. Interesting and meaningful findings confirm that by providing women with the opportunity to learn to read and write, literacy, opens up numerous opportunities for women that would not otherwise be possible. Literacy training has the potential for improved social communication for learners working in markets, allowing for improved communication. It is also suggested increases in participation in social programs and community engagement, improving business viability, profits, and accordingly, enabling new leaders to emerge at the local and regional level.

*Keywords: Microfinance, literacy, women, Africa, poverty, empowerment*

**Karen Sugar** is the Founder and Director of Women's Global Empowerment Fund (WGEF). Sugar's mission extends internationally, providing tools and programs creating economic, social and political agency for women and families in Uganda and Haiti. The mission of WGEF stems from a commitment to human rights and social justice along with her belief that women are natural leaders. Her University thesis, titled *The Power and Possibility of Microfinance* (2008), examined the outcomes of pairing microfinance with social programming. Supporting this idea became the foundation of developing her own model called Credit Plus, and in 2007 she launched WGEF. Drawing from her previous work experience addressing women and poverty issues, uniting her passions and education to evoke global change. This change is undeniable as tens of thousands of women and families have utilized the unique programs WGEF offers; including adult literacy, leadership development initiatives, and a focus on menstrual health in post conflict northern Uganda. She frequently travels to Gulu, Uganda to meet and work with the staff, clients and community members. Sugar argues, "Empowerment must include equality and liberties for all; only when all people are imbued with dignity, justice and human rights can we say that we are empowered."



## 147. Smart cities for Sustainable Development in India: Opportunities and Challenges

Vaidehi Daptardar, Manasi Gore

### ABSTRACT:

The concept of Sustainable development underlines the long lasting development of an economy by an efficient resource use fulfilling the economic, social and environmental aspects together. The SDGs by the UNDP focus on 17 goals for all countries to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The mission of Smart Cities in India is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions. The focus is on sustainable and inclusive development of the Mega cities, an indispensable outcome of the development process and urbanization implied in it. During the course of economic development over last 70 years in India, many cities have emerged as unsustainable and highly vulnerable to manmade calamities. This paper would elaborate on the details of Smart city project in India in the light of Sustainable development. The Smart cities mission though aims at sustainable development, this path is full of challenges along with some opportunities in disguise. The paper would suggest some policy implications such as developing smart villages along with these smart cities to bridge the gap between the rural and urban India.

*Keywords: Smart city mission, Sustainable development, Smart villages, Sustainable Development Goals (SDGs)*

**Dr. Vaidehi Daptardar** is a researcher in the field of Agriculture, Environmental Economics, Banking, Service Industry, Gender Studies and so on. She has been actively working on various issues related to Sustainable development in India. In the capacity as the Principal she has organized various workshops and seminars.

**Dr. Manasi Gore** is working as an Assistant Professor at the Department of Economics, SPPU, Pune, Maharashtra, India. Her research interests are Environmental Economics, Public Finance, Macro Economics and Gender Studies. She has been working on Sustainable development issues of Indian economy such as carbon credits, environmental accounting and so on.

## 148. Trade of Green Products: A Way to India's Sustainable Development

Manasi Gore, Meenal Annachhatre

### ABSTRACT:

The concept of sustainable development involves three components namely economic, social and environmental. In a developing economy like that of India, the economic sustainability demands higher growth of key economic indicators such as National income, employment generation, production, consumption and even the foreign trade. The growth of foreign trade and that of the exports are very critical for the foreign exchange reserves essential to pay for the imports in India. Trade as an engine of the economic growth thus fulfils the essential implication for economic sustainability. But in achieving this growth, economy's environmental sustainability is at stake. This is because, the top export products of India still comprise of petroleum products (18%), agricultural products (12%), textiles and yarns together at 11 % and chemicals (10%). All these exports in their production have immensely contributed towards environmental pollution in one way or the other. Mining for gold, silver and diamonds resulted in water pollution, Green House Gas emission, and soil erosion. Petroleum refineries are a major source of hazardous and toxic air pollutants such as particulate matter (PM). Though India's contribution to the total world trade is yet negligible, while promoting the major exports as mentioned above the natural resources are exploited too much and thus create a threat to India's environmental sustainability. This paper therefore advocates the need for the Green products' exports to make India's growth story even environmentally sustainable.

*Keywords: Sustainable development, Green products, Exports, Imports, Environmental Pollution*

**Dr. Manasi Gore** is working as an Assistant Professor at the Department of Economics, SPPU, Pune, Maharashtra, India. Her research interests are Environmental Economics, Public Finance, Macro Economics and Gender Studies. She has been working on Sustainable development issues of Indian economy such as carbon credits, environmental accounting and so on.

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## 149. Exporting Products (Herbs) on the EU Market, Imereti Agrozone, Export Opportunities

Shota Lominashvili, Naira Virsaladze, Irine Chanturidze

### ABSTRACT:

Imereti is located in the historical Colchis valley. With its territory and potential of resources it is one of the biggest regions in Georgia. The population of the nearby villages of the Rioni River in Imereti region have been following the cultivation of different crops. In the recent past, the greenhouse herbs production is remarkable. The products are distinguished by ecological cleanness and high quality. Within the DCFTA (Deep and Comprehensive Free Trade Area) and SME (Small and medium-sized enterprises) projects it is important to ensure opportunity of certain products constant delivery to European countries. We have investigated this issue for this purpose. An anonymous research of ordinary people and detailed survey of entrepreneurs involved in exports, about land and other resources, financial issues and readiness of society to start business, was carried out to reveal various problems in this field. Interesting results were received after making statistical analysis and relevant conclusions were made. Specifically, research finds that there are material and labor resources and sustainable climatic conditions for the continuous supply of herbs on the EU market in the Imereti Agrozone. In addition, the creation of green and greenhouse industries requires interested population to provide targeted state support for credit availability, quality seed materials and pest control and irrigation infrastructure. The vital direction is to find sustainable export markets and implement projects supporting the creation of agricultural cooperatives.

*Keywords: European integration, Export, Imereti agrozone, Financial material and labor resources, Continuous delivery, Standing market*

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**Naira Virsaladze** is Academic Doctor of Economics, Associate Professor of Economics Department of Kutaisi, Akaki Tsereteli State University, Head of Statistics Department. She graduated from Tbilisi State University with honors in 1979 and received Economics Masters equal quality degree. (Specialty

Statistics). In 1999-2002 she was a postgraduate student of Tbilisi State University. In 2002, defending candidate dissertation on "Differential Income of Population and its Economic-Statistical Study in Market Economy (On Georgia's Example)" and was awarded with the degree of Candidate of Economic Sciences. Since 2006, the degree of academic doctore of economics. N. Virsaladze is engaged in active scientific activities, participates in scientific conferences / symposia. She has published up to 40 articles, one monograph and five manuals. In her scientific work, she mainly analyzes Georgia's economic, social and demographic problems. She is also actively involved in the daily activities of the university, Is the Head of the Master's Program in Economics, a member of the University Academic Council and Faculty of Business, Law and Social Sciences.

**Irine Chanturidze** is a PhD student of Economics at Akaki Tsereteli State University, Kutaisi, Georgia. In 2012 she graduated from Akaki Tsereteli State University, Specialty: Banking, Finance, Insurance Case and awarded Bachelor's Degree. In 2014 she received a Master's Degree in Specialty: "Accounting and Audit." I.Chanturidze is engaged in active scientific activities, participates in Scientific conferences. She has Company "Business Academic Center"s Certificate, in "Financial Accounting". Currently she is working on Doctrine: "Problems of national production growth in Georgia And the main directions of their solution."

## 150. Integrated Environmental and Economic Accounting to Calculate Green GDP of Industrial Sector

A Faroby Falatehan, Rizal Bahtiar

### ABSTRACT:

West Bandung Regency is a developing district in West Java, Indonesia. As a developing city, the industrial sector is one sector that has a large share of Regional GDP in this district, which is 39%. On the other hand, based on the concept of sustainable development, the calculation of Regional GDP has not paid attention to aspects of resources depletion and environmental degradation. Therefore, Regional GDP is difficult to measure the business benefits of the industrial sector in the concept of sustainable development. This paper introduces concept of green Regional GDP and its contribution to regional income. This paper analyzes the value of depleted resources and degraded environments in the region, from 2015 to 2017. Resource depletion is focused on depletion of water resources. Whereas the degradation that occurs is focused on congestion and damage to water resources due to industrial waste. The industrial sector Green Regional GDP has resulted in a reduction in Regional GDP of 1.17% in 2015 and 1.10% in 2017. Depletion have always increased from year to year, as well as environmental degradation. Therefore, an appropriate policy is needed in overcoming this problem, especially reducing environmental damage, namely reducing congestion and reducing environmental pollution in order to achieve sustainable development.

*Keywords: Sustainable development, depletion, degradation, water, congestion, damage*

**Dr. A Faroby Falatehan** is Lecturer at Departmnet of Resources and Environmental Economics, Faculty of Economics and Management, IPB University. Head of Resources and Environmental Economics Program of Graduate School, IPB University. Expert of Social and Environmental Impact at Remark Asia, Re.Mark Asia is a consultancy services on sustainability and supply chains in the forestry and agricultural sectors. He completed his bachelor's program at IPB University at Bogor, Indonesia in Social Economics of Agriculture Program at 1998. He earned his master's degree at University of Indonesia in Planning and Public Policy Program, Faculty of Economics at 2005. He finished his doctoral program at National University of Malaysia in Resource and Environment Economics at 2016. He had attended Training for Development of CoE Government Accountability in Georgia State University, US at 2017. Futhermore, he joined Pilot e-Course about Sustainable Agricultural Land Management Projects: Soil Carbon Monitoring, conducted by The World Bank Institute at 2013.

**Rizal Bahtiar**, SPi, MSi is Lecturer at Departmnet of Resources and Environmental Economics, Faculty of Economics and Management, IPB University, Bogor, West Java, Indonesia. He finished his graduate in Brawijaya University, Indonesia, focus on Social Economics of Fisheries at 2003. He got his master degree at IPB University, Indonesia, focus on Marine Resources Economics at 2008. His expertise in Resources Economics, especially in natural resources accounting, Green GDP and payment environmental services. There are many researches that he was conducted, one of them is about Economic Impact of the unnatural Lapindo mudflow in the region of Porong, Sidoarjo, East Java, Indonesia.

## 151. Sectoral Impacts of International Labour Migration and Population Ageing in the Czech Republic

Martin Stepanek

### ABSTRACT:

The study assesses macroeconomic, sectoral and occupational impacts of the projected population ageing, brain drain and migration in the context of the Czech Republic. Specifically, constructing a bespoke, computable OLG-CGE model with 14 industries, 350 productivity groups of agents and two regions, the analysis models in detail the interactions between agents' characteristics and preferences as they evolve with age, socio-economic structure of the population and labour force, and the micro- and macroeconomic impacts in the different sectors of the economy. Through a number of scenarios differing in labour force and broader population changes – such as a sudden return of a high number of skilled professionals vs their continuous emigration abroad, or different levels of cross-sectoral migration of employees due to retraining – the program calculates the effect on endogenously determined variables such as sectoral wages, prices, capital accumulation or pensions. The preliminary results show that the real estate and healthcare sectors are going to face increasing demands for products and services in the years to come and that continuous emigration of skilled workers leads to higher prices of goods and services particularly in the information technology and professional services sector, leading to higher imports and lower capital accumulation.

*Keywords: OLG, CGE, migration, simulation, macroeconomics*

**Martin Stepanek** is a Ph.D. student at the Institute of Economic Studies, Charles University in Prague, Czech Republic and a Research Fellow at RAND Europe in Cambridge, United Kingdom. His research focuses on productivity of labour force and the associated topics, such as population ageing, migration, social security systems, or workplace environment. Together with his colleagues at RAND Europe, he has also published numerous high-impact studies on employee health and wellbeing or international migration commissioned by various institutional and private organisations, such as the European Commission or the UK Government.

## 152. Marketing of Imported Agricultural Products and Its Effects on Producers and some Hinterlands (UPN) Households in the City of Kinshasa/RDC from 2012 to 2018

Bwama Meyi Marcel, Mashala Bitwakamba Grégoire, Romeo Ciminello, Sylvestre Ruremesha

### ABSTRACT:

Our goal was to understand the behavior of sellers and consumers of imported agricultural products (corn, rice, chicken and pork) vis-à-vis local products. To test our hypotheses, we used methods of analysis and surveys using documentary techniques and the interview. The results reveal that 4.4% of respondents say they buy imported rice because it is cheaper and is found in abundance; 22.4% say it is of better quality and 6.9% say it is in good taste. This confirms our first hypothesis. Our analysis shows that 70.7% of respondents believe that local cereals are of better quality and 29.3% of respondents believe that imported cereals are not better. 58.6% of respondents prefer imported fresh food; 39.9% prefer local fresh food and 1.7% did not give their opinion. The vast majority, 86.2% of the respondents, want local products to be sold by the producers themselves, 5.2% want it to be a farm product and 3.4% to have a local brand. These results support the sustainable economy in the community. However, 22.4% of respondents complain of being exposed to cholesterol which can lead to cardiovascular diseases in the short and long term following consumption of live spawns without prior checks of health and public health officials; on the other hand 77.6% are abstraction, following the precariousness of life and poverty in Kinshasa. At the national level, taking into account the agricultural sector is inevitable for sustainable development. The state must take responsibility by feeding its own population with organic products of good quality. So, we must work and invest in the agricultural sector in the DRC, to reduce the food and economic dependence that the country is going through. The tax policy on imported fresh food would be one way to support local production and reduce imports so much that makes the balance of trade deficit in the DRC.

*Keywords: Marketing, imported agricultural products, Hinterlands households, Kinshasa, DRC*

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**Mashala Bitwakamba Grégoire** (1959), Sex: M; Nationality: Congolese; Function: Teacher; Grade: Teacher; Duty station: University Notre-Dame of Kasayi (U.K.A.) and Catholic University of Congo (UCC / KIN); Specialization in Development Economics and Environment; Province: Kasai Central / DRC. PhD in Economics (2008) with a specialization in Economics of Development. Area of research and specialization: - Economics of Development; - Specific issues of Food Security, Poverty and Economic Development.

**Prof. Romeo Ciminello** (1952) is Rector of Hermes Popular Private University ets in Rome ([www.unihermes.org](http://www.unihermes.org)). Teaches Ethics and Development in the Faculty of Economics and Development of the Catholic University of Congo DRC - Kinshasa ([www.ucc.cd](http://www.ucc.cd)); he has taught since 1991 at several Italian universities: Cassino, (Business Banking) Salerno (Project Finance) Trieste (Corporate Finance, 1991-2005). He has taught at the Pontifical Gregorian University Faculty of Social Sciences (Economics of Development, 1994-2012). Degree in Political Science (1978); Specialization in Foreign Trade and International Marketing (1981); specializing in foreign exchange (1981); specialization in Business Banking (1985); certificate of civil Ombudsman (2011); Member of the UCC Board of Directors; supervisory manager at Banco di Roma - Unicredit (1976-2012); is President of the non-profit organization promoting ethics committee ([www.certificazionetica.org](http://www.certificazionetica.org)) is Scientific Director at the Company 4metx Ltd. ([www.4metx.it](http://www.4metx.it)). He is the author of several publications including Ethics Finance and Markets (Tipar Ed.1999); The Christian meaning of work (Tipar Ed.2006); The Christian meaning of Corporate Social Responsibility (Tipar ed. 2008); author of the blog Diary of ethics([www.agenda-etica.blogspot.com](http://www.agenda-etica.blogspot.com)); promoter of several conferences on topics of ethical-social-political-economic and author of several articles in the specialized press. Research fields: development, ethics, economics, finance.

**Sylvestre Ruremesha**, Goma University/RDC Phd Student



## 153. The Potential for Green Job Growth in Saudi Arabia

Cian Mulligan

### ABSTRACT:

A key selling point of green growth as a policy strategy is the hope that it results in employment gains, often known as “green jobs”. Much research has been carried out on the potential of green jobs to boost employment and solve labour market imbalances, and many international organizations and also national statistics agencies are interested in quantifying and analyzing them. This paper examines the potential for employment gains in Saudi Arabia should a public investment policy focus on green growth. It will argue that while the country does have great potential for green growth, the potential for associated employment growth for Saudi nationals will be hampered due to skill imbalances and a reliance on cheap foreign labour in the construction sector, where most of the jobs will reside. A conclusion will offer policy recommendations to remedy some of these factors.

*Keywords: Labour economics, green growth, Gulf Labour Markets, GCC, green jobs, renewable energy, energy efficiency*

**Cian Mulligan** is a Senior Research Associate at the King Abdullah Petroleum Studies and Research Center (KAPSARC) in Riyadh. His research is focused on Gulf labour markets and the employment possibilities resulting from energy transition. He has an MSc in Economics from Tilburg University and a BA in Economic and Social Studies from Trinity College Dublin.

## 154. Shaping the Common Labour Market between Denmark and Sweden: Lessons for Sustainable Development

Kate Plaskonis

### ABSTRACT:

Though Denmark and Sweden have had a similar historical development over years, the differences in their labour markets have become more visible than ever. While labor shortage is increasing in Copenhagen, there is a high number of unemployed individuals with a larger proportion of vulnerable groups among them in Sweden. Despite some appealing factors (such as less governed labor law, the simplicity of employing and the high wages), the interest of Swedes to work in Copenhagen area has decreased and as a result, the number of commuters has fallen. Could it then be employers' attitudes towards foreign-born individuals that differ? Through interviewing Swedish and Danish employers and foreign-born population, Fördomsfönster Öresund project investigates if the attitudes differ and how social sustainability and utilizing the existent competence frame a common regional labour market. Interviews show that there are some concepts that might be crucial the issue: language, prejudice, leadership. By informing and responding to these problem areas, there is a strong possibility of greater integration, competence-based employment and greater revenues in commuting within the region.

*Keywords: Diversity, competence, social sustainability, labour market, green commuting*

**Kate Plaskonis** is a marketing director of MINE, southern Swedens largest NGO for diversity and inclusion, and a project manager of Fördomsfönster Öresund, a three-year Interreg-sponsored project. The main aim of the project is to investigate whether senior management in the private and public sector have different attitudes towards foreign born individuals in Sweden and Denmark. The findings of the project intend to broaden the knowledge in sustainable leadership, foreign-born integration and more effective labor market. Gender equality and human empowerment lie in the core of Kate Plaskonis' everyday activity - in her current position, she educates companies, public sector and academia in norm critical thinking and diversity management.

## 155. Digital Exclusion in the Labor Market in European Countries: Causes and Consequences

Izabela Czaja, Maria Urbaniec

### ABSTRACT:

Changes in the labor market in Europe, as well as around the world, evolve and are caused by many factors whose impact is difficult to predict. The assessment of the main causes of the state in 2016 differs from 2018. In 2016, cultural, sociological, demographic and economic reasons changing work environments, natural change, natural resource constraints and the transition to a greener economy, rising geopolitical volatility, longevity and aging societies, have gained importance. However, in 2018 four „disturbances” (urbanization, population aging, accelerating technological change and global connections) were considered the main causes of changes on the labor market. Technological changes, the universality of communication and control solutions requiring new skills and advanced IT knowledge on programming of cooperating devices will result in exclusion from the labor market of people who will not be able to handle advanced machines and devices. The aging of the population will increase the number of people excluded. The purpose of the article is to identify the causes and effects of technological exclusion on the labor market in the European Union. A review of mainstream literature will be conducted followed by document-based research (descriptive analysis of secondary data, especially the method of critique analysis of the literature). Moreover, the statistical databases will be used for the analysis. The results of the analysis show that attitudes towards modern technologies, educational and professional activity as well as economic behaviors (business activities) on the labor market in the context of finding or creating sources of income and jobs are varied and depend on the age of people.

*Keywords: Digitalization, digital exclusion, labor market, causes, consequences*

**Dr. Izabela Czaja** is an Assistant Professor at the Department of Entrepreneurship and Innovation of the Cracow University of Economics (Poland). Scientific and research interests include: entrepreneurship, evolutionary economics, microeconomics, history of economic thought, modeling of small and medium business development, innovation, dynamics of the sector private sector.

**Dr. Maria Urbaniec** is an Assistant Professor at the Department of Entrepreneurship and Innovation of the Cracow University of Economics (Poland). Her research focuses on sustainable development, sustainable entrepreneurship, eco-innovation and industrial relations, industry 4.0.

## 156. Aging Societies in Technology Times on the European Labor Market: Adoption and exclusion

Izabela Czaja

### ABSTRACT:

Technological changes, the universality of communication and control solutions requiring new skills and advanced IT knowledge about programming cooperating devices will result in digital or technology exclusion from the labor market of people who will not be able to handle advanced control panels as well as machines and devices. The aging of the population will magnify the number of people who are excluded. Attitudes towards modern technologies, educational and vocational activity as well as economic behaviors (economic activity) on the market in the context of finding or creating sources of income and jobs are varied and depend on the age of people. The aim of this presentation is to analyze the consequences of aging societies in technology era and to assess the influence of silver entrepreneurship on digital exclusion exemplified by European countries. The results of the analysis show that digital exclusion in the labor market depends on many factors, for example technological progress; high speed mobile internet; artificial intelligence; widespread acceptance of big data analytics; and cloud technology in the period 2018-2022. To be able to meet these challenges, silver entrepreneurship seems to be an effective solution to deal with digital exclusion.

*Keywords: Aging, society, labor market, silver entrepreneurship, generation Z, technology, digital exclusion*

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## 157. Development of an Integrated Game Based Assessment Approach – The Next Generation of Psychometric Testing

Cătălin Gabriel Ioniță, Alina Stanciu, Adrian Toșcă, Dan Florin Stănescu

### ABSTRACT:

Game-based assessment have received a lot of attention in the last decade. In a recent study of human resources practitioners, 75% of participants indicated that they would consider using gamification as part of their own recruitment and selection strategy in the near future. Following the methodological approach previously used in educational environment, two approaches to building and using GBA in the organizational environment can be distinguished: gamified assessment – by gamifying (already existing) psychometric test; psychometric play - use of a game to gather evaluation data. Previous studies highlighted that those applying for a job are eager to use game-based assessment for self-evaluation, especially when these games are available for free. Game-based assessments can also help maintain a high commitment during the evaluation, which reduces the likelihood of some candidates dropping out in the process and also increases the amount of time that data can be collected. Current paper aim at presenting the preliminary efforts made to gamify two psychometric tests, namely spatial and verbal reasoning.

*Keywords: game based assessment; recruitment; spatial reasoning; verbal reasoning*

**Cătălin Gabriel Ioniță** is a diligent, competent and high-performing professional with over 10 years of professional experience and expertise in development and successful implementation of projects. Expert in the implementation of large projects within public administration and IT&C sector, with more than 9 years of experience in project management and over 20 projects managed during his career. Focus on deep understanding of emerging trends and disruptive technologies such as Block Chain, Robotics Process Automation, Artificial Intelligence, Big Data, Data Analytics, Internet of Things. Interested in continuous learning, and able to adapt the theory into the best practices.

**Alina Stanciu**, Structural Management Solutions, is currently involved in a research and development project for online recruitment that integrates gamification and artificial intelligence techniques. With a work experience of over 10 years, prior to joining the project, Alina worked as a project implementation consultant, providing consultancy in project management and public procurement. She graduated from the University of Bucharest with a master's degree in Human resources management. With a desire in continuous learning, Alina attended various courses on business analysis, project management and information technology service management.

**Adrian Toșcă**, Structural Management Solutions has more than 15 years of experience in the IT industry, and has extensive knowledge in designing, architecting, building, implementing and re-engineering applications with a variety of technologies. He co-authored several articles in distributed computing domain and algorithms design. His passion for crafting software is influenced by the interest in design and science and is applying universal design principles in every activity he undertakes. Currently is involved as technical coordinator in several research and development projects that integrate gamification and artificial intelligence techniques like computer vision machine learning and natural language processing.

**Dan Florin Stănescu**, PhD, National University of Political Studies and Public Administration – associate professor at the Faculty of Communication and Public Relations and coordinator of the Social

Cognition & Communication of Emotions Laboratory of the National School of Political and Administrative Studies, Bucharest. PhD in psychology at Hamburg University since 2006, Dan currently teaches "Strategic Management of Human Resources. Organizational Change", "Occupational health" and "Organizational counselling" courses within different Master programmes. His research interests are primarily focused in areas such as human resources development, emotions study, organizational psychology, lifelong learning and clinical psychology.

## 158. Life Course Events, Residential and Job Relocation and Commute Time in Australian Cities

Solmaz Jahed Shiran, John Hearne, Elizabeth Taylor

### ABSTRACT:

This study uses Mobility Biographies approach as the theoretical background that suggests changes in travel behaviour have a certain relation to important key events in life course. The data comes from the Household, Income and Labor Dynamics Survey in Australia (HILDA) to model a set of life course events and their interaction with the commute time. Changes in the journey-to-work travel time is used as an indication of travel behaviour change in this study. Results of a linear regression model for change in commute time show a significant influence from socio-demographic factors like income and age, the previous home-to-work commute time and remoteness of the residence. Residential relocation and job change have significant influences on commute time. Other life events such as birth of a child, marriage and divorce or separation have also a strong impact on commute time change. Overall, the research confirms previous studies of links between life course events and travel behaviour.

*Keywords: life course events, travel behaviour, residential mobility, job change, commute time*

**Solmaz Jahed Shiran** is a PhD student at RMIT University, Australia. She is studying Urban Planning on interactions of residential mobility and travel behaviour with a focus on factors affecting residential mobility and hence travel.

**Prof. John Hearne** focuses on Applied Mathematics and Operations Research in the School of Science, RMIT University, Australia. Professor Hearne's main interest is in the use of quantitative techniques to solve or to give insight into complex management problems.

**Dr. Elizabeth Taylor** is a Senior Lecturer in Urban Planning and Design at Monash University, Melbourne, Australia. Dr Taylor's research explores the intersections of housing markets and urban planning, focusing on patterns of planning system conflict.

## 159. Cyclical Economics (Alternative to Profit Economics) - Purpose and Application

Rishabh Khedia

### ABSTRACT:

Present day economic order has hypnotized humans to endlessly accumulate and consume. The theory of cyclical economics enables humans to feel secured, optimally utilize resources and obliterate the tendency of exploitation. The paper contains, purpose and application of the theory. Cyclical because when the resource of body, mind (will) and wealth are deployed upon natural environment, product is obtained, the product becomes the basis of nutrition, protection and conservation of our body. On the basis of this output's nutrition and conservation, humans become capable of manufacturing more product. This is the cyclical order of means. Through this method human will experience prosperity and feel enriched, as product can always be manufactured more than the requirement. In this Family Oriented Self Performing Organization, each and every activity carried out by a human being is conducive to achieve human goal of 1. Resolution in each individual human being, 2. Prosperity in each family, 3. Trust in Society 4. Co-existence with Nature. All activities that are necessary and sufficient to be undertaken by human beings as individual or as collectives in the form of family or social institution are identified and classified in 5 groups as follows and five defined dimensions (together as human programme): 1. Education and understanding (values); 2. Justice and security; 3. Production & work; 4. Exchange and Banking; 5. Health and restraint (discipline). The paper discusses the design of application of this human program at various stages in the world order, starting at the village level.

*Keywords: Present, Scarcity, unlimited wants, alternative, defined needs, surplus production*



## 160. The Interplay between Inter-firm Collaboration and Dynamic Capability in an Agri-food Supply Chain Sustainability

Harun Magoti Daniel, Hogset Heidi

### ABSTRACT:

As the world population increases while economic growth leads to increasing purchasing power, the demand for food to feed the expected future human population also increases. However, the world faces greater volatility and other challenges including economic crises, social exclusion and climate change. In addition, this increase in the world population has a huge impact on supply chain sustainability and agri-food industry in particular. We found that although sustainability is widely studied, there is still insufficient key conceptual and methodological framework that address the concept. We also, found that agri-food supply chains face complex challenges in achieving sustainable development in the triple bottom line, i.e., the economic, environmental and social aspects. To ensure that this complexity in agri-food supply chain sustainability is resolved, interfirm collaboration among stakeholders is often required. Interfirm collaboration promotes information exchange, commitment and trust among stakeholders, which is important for achieving sustainability in agri-food supply chains. However, we found that collaboration cannot work on its own to achieve sustainability. Rather firms' dynamic capability and appropriate governance structure help to effect the role of collaboration on sustainability and agri-food industry in particular. This research paper contributes to the development of a thorough food supply sustainability framework and strategies to accommodate these challenges.

*Keywords: Collaboration, Sustainability, Agri-food supply Chain, Dynamic capability, Literature, Governance structure*

**Harun Magoti Daniel** is a PhD Research Fellow from Molde University College, Norway. His major research project is agri-food supply chain sustainability and inter-firm collaboration. Has a BSc degree in management science from University of Dar Es Salaam, Tanzania. Took Masters' degree in Logistics; supply chain management at Molde University College, Norway, and now admitted as PhD Research Fellow in logistics since early March 2019.

**Dr. Hogset Heidi** is an associate Professor at Molde University College, Norway. Has a degree in civil agronomy from the Norwegian Agricultural University College (now NMBU) (1987), and has experience from Norwegian Agricultural Management (1987-98). Took a master's degree at Purdue University (2000) and PhD at Cornell University (2005) in the US in agricultural economics. Has been affiliated with Molde University College since 2007. Is now a participant in an international research project on links between local and global food supply chains, with partners in the UK, the Netherlands, and several Asian countries. Research interests are sustainable food production and food supply, especially in tropical countries. Has participated in a research project on the commercialization of agriculture in tropical Africa. Has experience from field work in Kenya, Tanzania and Malawi.

## 161. Effective Financing of Environmentally Adjusted Multifactor Productivity Growth in Sustainable Development Framework - An International Comparative Study

Viktor Prokop, Jan Stejskal, Petr Hajek

### ABSTRACT:

Sustainability in innovation activities financing is undoubtedly one of the important requirements that determine the business environment in all developed countries of the world. Different countries apply different innovation models or policies, ways to support or finance their entrepreneurial innovation activities respectively. They significantly shape or cultivate an innovative environment in which different relationships and linkages between actors take place. Therefore, it is necessary to analyze individual determinants, their sustainability, and their efficiency in view of the expected outcomes – environmentally adjusted multifactor productivity growth. We used data from the OECD statistics 2009-2013 for all developed countries in the world. We used the super-efficiency DEA (Data envelopment analysis) method for our international comparative study. Our results show that the developed countries use analyzed financial resources the most effectively. They use the combination of private and public financial sources. These are countries that can be perceived as a benchmark - it is therefore possible to compare even partial values of indicators and define public policies for support of selected entrepreneurs. The DEA software also allows you to obtain a numerical benchmark of inputs and outputs for every country. Our finding contributes to the theoretical debate on innovation models in framework of sustainable development. The results of the analysis confirm the importance of financial sources and sustainable public sector interventions that influence the environmentally adjusted productivity growth.

*Keywords: environmentally adjusted productivity growth, sustainable development, financing, OECD*

**Viktor Prokop**, Ph.D. is a professor assistant at Institute of Economics Sciences, Faculty of Economics and Administration, University of Pardubice. The author is co-researcher of the grant project: Modelling knowledge spill-over effects in the context of regional and local development; and explores the issue of measuring the knowledge economy in his dissertation.

**Jan Stejskal**, Ph.D. is an associate professor with the Institute of Economics, Faculty of Economics and Administration, University of Pardubice, Czech Republic. His domain is connection of the public economy in the regional scope and view. Especially, he analyses regional policy, tools of the local and regional economic development, and public services.

**Petr Hajek**, Ph.D. is an associate professor with the Institute of System Engineering and Informatics, Faculty of Economics and Administration, University of Pardubice, Czech Republic. He deals with the modelling of economic processes (especially in the field of public economics and public finance).

## 162. Creating Eco-Innovations for Sustainable Entrepreneurship and Development within European Countries

Viktor Prokop, Jan Stejskal, Petr Hajek

### ABSTRACT:

Firms are forced to come up with new or significantly improved goods, services as well as organizational and marketing practices. However, countries, firms and policy makers are facing great environmental challenges for sustainable development and entrepreneurship, which create large demand for Eco-innovations with environmental benefits nowadays. For these reasons, we are analyzing different factors influencing creation of firms' Eco-innovations in the EU. We are using own neuro-fuzzy-regression models and latest available data form CIS 2012-2014 created by Eurostat. Our results show that firms' Eco-innovations are influenced by different factors according to the nature of innovation (product, process, organizational, marketing) in the EU. Public financial subsidies and firms' environment (e.g. existing environmental regulations, taxes, charges or fees, market demand, and costs of inputs) play key role in the process of creation Eco-innovation with environmental benefits. These results show possible ways how support sustainable entrepreneurship and regional (national) development not only within analyzed countries. We provide initial analysis dealing with different kinds of Eco-innovations and its determinants that could help firms to develop and enhance their corporate innovation and environmental policies. These results could also inspire policy makers at different levels because we propose some practical implications.

*Keywords: eco-innovations, sustainable development, environmental benefits, entrepreneurship*

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**Petr Hajek**, Ph.D. is an associate professor with the Institute of System Engineering and Informatics, Faculty of Economics and Administration, University of Pardubice, Czech Republic. He deals with the modelling of economic processes (especially in the field of public economics and public finance).

## 163. The Role of Multinational Enterprises in Achieving Sustainable Development - The Case of Huawei

Sue Claire Berning

### ABSTRACT:

The aim of this paper is to investigate the relationship between business and sustainable development, particularly the role of multinational enterprises (MNEs) as possible driving force for achieving sustainability. By following an inductive case study approach and referring to the Sustainable Development Goals (SDGs) of the United Nations, the sustainable undertakings of the Chinese MNE Huawei are explored. Published data on Huawei's website and online resources like annual reports, news announcements, sustainability and corporate social responsibility reports are used for this purpose. The main findings indicate that Huawei can promote sustainable development internationally on three different levels: (1) products/services, (2) business operations and (3) social contributions. Based on these findings, a systematic framework is derived to help illustrate possible and classify existing MNE's sustainability activities, as well as the related main stakeholders. This paper is useful for scholars and practitioners alike as it shows the compatibility of success in business with sustainability, as well as the potential of MNEs to contribute to sustainable development.

*Keywords: Sustainable Development Goals, business, multinational enterprises, emerging markets*

**Dr. Sue Claire Berning** is a Senior Research and Teaching Associate at the Business School of the Technical University Ingolstadt, Germany. She earned her PhD at the Chair of International Management of the University of Erlangen-Nuernberg, Germany. Her main research interests include international business and sustainability, emerging market firms, internationalization strategies and cross-cultural marketing and management. Some of her papers have been published in "Management International Review", "Journal of International Business and Entrepreneurship Development", or "Management Review Quarterly". She has work experience from Germany, China, Japan and the Netherlands. She is born in South Korea and a German national and fluent in German, English, French and Chinese.

## 164. Corporate Drivers of Sustainability Reporting Practices in Financial Services Sectors of North America

Joseph Oluwadebi, Jia Zhai, Dalu Zhang

### ABSTRACT:

The study examines critically the corporate attributes that drive the practice of extent and quality sustainability reporting. The drivers are grouped into two namely; internal corporate drivers (profitability, size, age, and corporate governance structure) and external corporate drivers (media visibility and listing status). The research hypotheses use signalling, legitimacy, institutional, agency and stakeholder theories. The study is based on quantitative approach using content analysis technique to measure the sustainability reporting from the firm's annual report or standalone reports. The sample is drawn from the financial services companies in North America that are listed in sustainability disclosure database of Global Reporting Initiative (GRI) from 2014 to 2018. A three point-scale measurement was constructed to evaluate the quality reporting using the GRI G4 specific standard disclosures. The study is aim to find the causal relationship between the corporate drivers and the sustainability reporting practices of financial services. The research provides insight to relevant stakeholders on sustainability reporting strategies in the North America. It also helps to underscore the corporate characteristics that have significant relationship with quality and not only extent reporting practices of sustainability and the effects of quality sustainability reporting practices in firm's financial performance.

*Keywords: Sustainability reporting; GRI G4; Content Analysis; Financial services*

**Joseph Oluwadebi** is a research student in Salford Business School of the University of Salford, Manchester, UK. He had worked in various divisions of investment banking in financial service industry for over a decade before going into academic. He is a chartered accountant and a dealing clerk Nigerian Stock Exchange. He had MSc in International Corporate Finance from Salford Business School and also a holder of MBA. He is presently doing research on financial sustainability to know the factors that influence the practice of corporate sustainability reporting in financial industry and the impact of this report in their financial performances.

**Dr. Jia Zhai** is a Lecturer in Finance at Salford Business School. Prior to joining the University of Salford in January 2016, she was a Lecturer in Finance with Ulster Business School, Ulster University, UK, and University of Liverpool Xi'an Jiantong, China. She also held visiting positions in the Management School, University of Henan, China and University of Dongbei Finance and Economics, China. Her research is mainly in the areas of FinTech, asset pricing, derivatives, and applied financial econometrics. She has published a number of articles in leading international journals, including the Journal of Expert System with Applications, Decision Support System, Review of Quantitative Finance and Accounting, and the European Journal of Finance.

**Dr. Dalu Zhang** is a Lecturer in Finance at the University of Leicester. Prior to that, he worked in University of Salford, Loughborough University, and University of East Anglia. He was awarded a PhD in Economics by University of East Anglia. He is a Financial Economist and Econometrician, whose research interests lie in Time series analysis, Forecasting, Copula methods, Dependence analysis and Banking. He has published papers in the International Review of Financial Analysis, the European Journal of Finance, the Journal of Operational Research Society and the Journal of Banking Regulation.

## 165. The Framework of the Civil Servants' Education in the Conditions of Sustainable Development of the Republic of Belarus

Irina Sidorchuk, Aleksei Akhrymenka, Volha Basko, Alexei Grigoriev, Anton Parfenchyk

### ABSTRACT:

Achieving the goals of sustainable development largely depends on the state machinery effectiveness and the professionalism of civil servants. Continuous education (life-long training) is an effective tool for ensuring competence level of civil servants. According to the results of the analysis of the education system of civil servants, it can be argued that in the Republic of Belarus it has developed a mixed framework of education for civil servants, which is characterized by a combination of innovative and traditional forms and teaching methods aimed at their professional and personal development. The training of civil servants is carried out within the annual governmental order. The existing educational framework was developed before the adoption of the 2030 Agenda, in this regard, the education of public servants does not fully take into account the paradigm of sustainable development. The solution is seen in the transition from the annual government order for training of civil servants to long-term, medium-term and short-term planning of their training, which correlates with the Sustainable Development Goals. It is also important to implement the principle of inclusion in education. This will entail not only the improvement of the scientific and methodological support of the educational process and the creation of new educational programs, but also an increase in the requirements for the level of teachers training and the intensification of the students role. We also believe that the use of advanced foreign experience in the learning process will strengthen the personnel capacity of the state machinery and promptly implement changes to reflect the new realities. The listed aspects of the civil servants education framework transformation in the Republic of Belarus can become potential growth points that in the long term will allow Belarus to achieve the Sustainable Development Goals.

### *Keywords:*

- Dr. Irina Sidorchuk** is Deputy Director of the Institute of Information Technologies, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus. Recently, she investigates on EU project "The Support of Regional and Local Development in Belarus", participated in the Belarusian-Swedish Project "Studying the Problems of Red Tape Reduction in Primary-level Local Governments and the Quality of Territorial Public Self-government Bodies", and UNDP Project "Strengthening Inclusive Local Governance in Belarus" funded by the DANIDA.
- Dr. Aleksei Akhrymenka** is Director of the Institute of Information Technologies, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus. Recently, he participated in UNDP Projects "Strengthening Inclusive Local Governance in Belarus" and "National Report on Human Development: Competitive Advantages of the Regions of the Republic of Belarus". He analysed the practice of working with electronic appeals on the web-sites of state bodies and organizations.
- Dr. Volha Basko**, Leading Specialist at the Information and Analytical Support Department of the AIS "Reserve" at the AIS "Reserve" Support Center, the Academy of Public Administration under the aegis of the President of the Republic of Belarus, Minsk, Belarus. She participated in UNDP Project

“Strengthening Inclusive Local Governance in Belarus” funded by the DANIDA. The sphere of her scientific interests includes issues of self-education and professional development of civil servants.

**Alexei Grigoriev** is Director of Legal and Human Resources Department of the State Supervisory Department for Telecommunications of the Republic of Belarus. After studying at the Belarusian State University he worked as a researcher, senior researcher and government official for International, State and Civil Law in the Belorussian Institute of State Building and Legislation, National Centre of Legislative Activity under the Auspices of the President of the Republic of Belarus, Belarus President Administration, Academy of Public Administration under the aegis of the President of the Republic of Belarus. He published more than 90 academic papers.

**Anton Parfenchyk** is Researcher at the Section of Research in the Field of State Organization and Society Development, International Law at the Institute for Legal Research, the National Centre of Legislation and Legal Research of the Republic of Belarus, Minsk, Belarus. He has defended two Master's theses in Law and in Public Administration. He participated in UNDP Project “Strengthening Inclusive Local Governance in Belarus” funded by the DANIDA. He is author of more than 40 academic papers.

## 166. Citizen e-Participation as an Important Factor for Sustainable Development

Magdalena Musiał-Karg, Izabela Kapsa

### ABSTRACT:

Citizen e-participation – in times of a very dynamic grow of ICT - is an important factor of development of contemporary democracies. The use of electronic tools of involvement cause many changes in the relation of citizen and public institution, especially by growing up citizen activity in decision making. Civic participation is a key factor in determining effective and inclusive governance at the local and national level. As many organizations notice, contemporary democracy faces to ensure responsive, inclusive, participatory and representative decision-making process, emphasizing the importance of those factors for sustainable development. Also National Councils for Sustainable Development were once considered critical to achieving integration in decision-making and participation, two dimensions that were at the heart of the concept of sustainable development. An article presents citizen e-participation as an important factor for sustainable development. The purpose is to explain theoretical and empirical meaning of citizen e-participation for sustainable development. To achieve this goal the authors used the following research methods: critical review of the literature and quantitative data analysis (those data come from own research (2018) regarding to use and willingness to use e-government tools by Poles). Research results may be an important contribution to develop civic participation, which is its implicit value.

*Keywords: citizen participation, e-democracy, e-government, e-participation, Poland, sustainable development*

**Magdalena Musiał-Karg**, Assoc. Prof. at the Department of Political Systems at the Faculty of Political Science and Journalism (Adam Mickiewicz University in Poznań). Since September 2016 - Vice-Dean for Research and Development. In October 2014 she was granted a 3-year stipend for the young excellent scientists funded by the Polish Minister of Science and Higher Education. Her research interests focus on direct democracy and the use of modern technologies (ICT) in democratic systems (mainly in electoral processes – e-voting). She’s also dealing with the role of women in public space and with the cross-border cooperation in the Polish-German border area. She is the initiator and coordinator of the Research Group “Helvetic Initiative” ([helwecja.amu.edu.pl](http://helwecja.amu.edu.pl)). President of the Center for Research and European Education.

**Izabela Kapsa** is political scientist, Assistant Professor at Kazimierz Wielki University in Bydgoszcz, Poland. Member of editorial board of “Athenaem. Polish Political Science Studies” and member of Polish Association of Political Science. Member of team working on project: E-voting as an alternative voting procedure in state elections. Experience of selected countries and the perspectives of e-voting implementation in Poland. Member of team analyzing attitudes and behavior of young adults, especially their political preferences and political participation. Research interest focus on electronic democracy, e-politics and e-participation. Author of publications devoted to contemporary political systems, political parties and party systems, electronic participation and e-voting.



## 167. Policy Priority Inference for Sustainable Development

Omar A. Guerrero

### ABSTRACT:

Determining policy priorities is a challenging task for any government because there may be, for example, a multiplicity of objectives to be simultaneously attained, a multidimensional policy space to be explored and interdependencies between these dimensions. Altogether, these factors generate a complex landscape that governments need to navigate in order to reach their goals. Traditionally, governments have relied on policy advice based on regressions that use development-indicator data. Unfortunately, the coarse-grained nature of such data prevents these techniques from properly dealing with the challenges previously mentioned. In addition, development indicators are not exogenous variables that can be easily manipulated through policy interventions. Instead, they are the result of a policymaking process mined with uncertainties and inefficiencies. To overcome these challenges, we have created the research program of Policy Priority Inference (PPI, <https://bit.ly/2DA9IKy>). By specifying the policymaking process through a political economy game on a network of spillover effects, PPI accounts for the -recently documented- network of interdependencies between policy issues (such as the sustainable development goals), as well as well-known political economy problems arising from budget assignment (e.g. corruption). Built in the core of PPI is an agent-based model that simulates -from bottom up- the observed dynamics of development indicators. This tool allows us to circumvent several limitations of traditional statistical methods (e.g. losing country-specificity from cross-national estimates). In this talk, we introduce the PPI methodology (<https://bit.ly/2r4W9FN>) and demonstrate some of the various applications where it sheds new light on economic policies for development, for example, in estimating policy resilience (<https://bit.ly/2EoRl4p>); studying ex-ante policy evaluation (<https://bit.ly/2IMa9A4>); quantifying policy coherence (<https://bit.ly/2TbXlrl>); and assessing the effectiveness of governance reforms in the fight against corruption (<https://bit.ly/2NB4VGb>). In addition, we will discuss the direction that PPI is taking towards the SDG 2030 agenda and ongoing collaborations with the UNDP.

*Keywords: SDGs, policy priority, development indicators, agent-based model, development economics, policy*

**Omar A. Guerrero** is a Senior Research Fellow at UCL Economics and the Alan Turing Institute. He has a PhD in Computational Social Science from George Mason University and studies problems related to economics and public policy. Previously, he was a fellow at the Oxford Martin School, the Saïd Business School and the Institute of New Economic Thinking at the University of Oxford. His current interests lie in development economics, sustainable development, inequality, firm and labor dynamics and the improvement of policy-making through computational analysis.

## 168. Environmental Policy Integration in Ukraine and the EU

Liudmyla Golovko, Olena Yara, Maksym Kutsevych, Tamara Hubanova

### ABSTRACT:

Environmental policy integration into other policy areas is one of the most important tasks of the present. The purpose of our scholarly work is to explore actual problems of harmonization of legislation of Ukraine in the sphere of environmental policy integration with EU law and development of proposals for the improvement of Ukrainian legislation. The state of environmental policy integration in Ukraine was assessed. Government strategies, programmes, concepts and plans in Ukraine and EU were analyzed. Based on comparison analysis differences and common problems of environmental policy integration in Ukraine and EU member states were determined and recommendations on the measures to be taken to ensure better integration of environmental policies in sectoral policies in Ukraine were made. The findings of the research are based on evaluation and comparison of strategic documents of Ukraine and the EU and practices of their implementation. The methods of comparative, analytical, statistical and logical analysis were used.

*Keywords: Environmental policy integration, sustainable development, strategic environmental assessment*

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**Olena Yara** is dean of the National University of Life and Environmental Sciences of Ukraine, professor of the Department of Administrative and Financial Law of the National University of Life and Environmental Sciences of Ukraine.

**Maksym Kutsevych** is Doctor of Juridical Science, associate professor, deputy dean of the Faculty of Law and associate professor of the Department of Criminal Law and Criminology of the Faculty of Law of Taras Shevchenko National University of Kyiv; expert on criminal law and criminal procedure of the joint project of the European Union and the Council of Europe "Strengthening and Protecting the Rights of Women and Children in Ukraine TRES"; expert on criminal law and criminal procedure of the non-governmental organization "Women's Consortium of Ukraine"; consultant of the Committee of the Verkhovna Rada of Ukraine on Legislative Support of Law Enforcement.

**Tamara Hubanova** is Doctor of Juridical Science, associate professor, honored lawyer of Ukraine, director of Private Higher Educational Institution "Financial-Legal College"; author of more than 100 scientific works and monographs. Scientific interests: administrative law and process, financial law, information law. Research studies are devoted to the evolution of the formation and development of the modern network of colleges of Ukraine as higher educational institutions.

## 169. Criminal Enforcement of Copyright as an Important Safeguard for Economic and Security Interests

Ioana VasIU, Lucian VasIU

### ABSTRACT:

Intellectual property provides a major contribution to the economic and technological development. The effective protection of intellectual property rights fulfills a key role in the advancement of innovation, the creation of new jobs, and development investments. Nevertheless, in the digital economy, the protection of copyrighted works poses numerous and very difficult challenges. The protected works that usually targeted by criminals are motion pictures, software, video games, and musical compositions. The estimated or actual harm to copyright holders can amount to millions of dollars. Moreover, these offenses are sometimes perpetrated in connection with other crimes, such as conspiracy to commit racketeering or money laundering. The criminal enforcement of copyright plays a vital role in safeguarding economic and security interests. In this paper, we explain what constitutes willful infringement of a copyrighted work. Next, based on a theoretically-informed, yet empirically driven approach, which takes into account a large corpus of data, consisting mostly of cases brought to courts, the paper outlines the main methods used to illegally infringe protected works and the potential or actual consequences of such cases. Finally, the paper proposes a number of measures that could be taken, in order to provide better protection for copyrighted works.

*Keywords: Copyright, Economic Development, Cybercrime, IPR Infringement, Security, Loss*

**Prof. Dr. Ioana VasIU** is member of the Babeş-Bolyai Scientific Council and Coordinator of the Faculty of Law's Cybercrime Research Unit; Member of the Board of Directors 2014-2019 of the International Association of Penal Law (AIDP-IAPL); and External Affiliated of the Ostrom Workshop Program on Cybersecurity and Internet Governance, Indiana University. Prof. VasIU was partner and lead researcher on several projects funded by the European Commission, Dutch Council for the Judiciary and other entities. She chaired several International Conferences, worked as expert for the European Commission and the UNDP Romania, and was keynote speaker or moderator at numerous professional events organized by prestigious organizations, such as OECD or UNDP/RCPAR. Her research focuses on cybercrime nature, prevention, and litigation.

**Dr. Lucian VasIU** is an expert in information systems security and cybercrime prevention.

## 170. Citizens Inclusion in the Political Decision Making Process as a Determinant of Sustainable Development Implementation

Alina Kaszkur, Izabela Kapsa

### ABSTRACT:

All efforts to involve the society in the affairs of local communities are an important aspect of the implementation of the principle of sustainable development. Citizen's involvement in decision making processes not only positively correlates with their sense of action, but also affects the quality of decisions made by public authorities which gain the opportunity to learn more about the needs and expectations of citizens. The best conditions for the implementation the principle of sustainable development, basing on the dialogue with citizens, are on local level - in the cities. Moreover, using new information and communication technologies opens a number of possibilities to even more fully activation of local communities. As a consequence, the residents have greater impact on the quality of political decisions, that take into account their needs and expectations, it is also a chance to improve the quality of their life. The main research goal of the article is to answer the question - what characterizes sustainable development of the city and how the use of information and communication technologies by public authorities may affect a more complete implementation of the principle of sustainable development. The research method is an analysis of the documents and source materials.

*Keywords: civic engagement, sustainable development of the cities, e-participation, information and communication technologies, local authorities*

**Dr Alina Kaszkur** is political scientist, Assistant Professor at Kazimierz Wielki University in Bydgoszcz, Poland. Assistant to the Editor of "World of Ideas and Politics" and member of Polish Association of Political Science. Member of team working on project: E-voting as an alternative voting procedure in state elections. Research interest focus on electronic democracy, e-participation and public innovation.

**Dr Izabela Kapsa** is political scientist, Assistant Professor at Kazimierz Wielki University in Bydgoszcz, Poland. Member of editorial board of "Athenaem. Polish Political Science Studies" and member of Polish Association of Political Science. Member of team working on project: E-voting as an alternative voting procedure in state elections. Experience of selected countries and the perspectives of e-voting implementation in Poland. Member of team analyzing attitudes and behavior of young adults, especially their political preferences and political participation. Research interest focus on electronic democracy, e-politics and e-participation. Author of publications devoted to contemporary political systems, political parties and party systems, electronic participation and e-voting.

## 171. The Impact of Staffing Moratoria on the Delivery of Quality Health Care Services in KwaZulu-Natal

Nduduzo Ndebele, Ndlovu

### ABSTRACT:

South Africa by international standards has a poor public healthcare system. The democratic South Africa in 1994 inherited a highly fragmented, inequitable health system due to the Apartheid regime. There has been a substantial increase in the literature on reforms such as austerity measures to improve healthcare service delivery in government health institutions. A small scale mixed method pilot study design was adopted to assess the impact of the KwaZulu-Natal's Department of Health austerity measures at the Ngwelezana Tertiary Hospital. Interview was conducted to 1 Hospital's EXCO member and 4 questionnaires were issued to healthcare workers from all four departments at Ngwelezana tertiary Hospital. Ngwelezana Tertiary Hospital is only public hospital under King Cetshwayo health District rendering tertiary health services for Zululand and Umkhanyakude population. Empirical evidence shows that staffing moratoria introduced by South Africa's National Treasury in 2015 which can be seen as an austerity measure have resulted in severe staff shortages and subsequently negatively affected the provision of healthcare services at the hospital. As a result, using the case of Ngwelezana Tertiary Hospital, this paper argues that the country's current economic status has resulted to budgetary pressures on the provincial departments of health which led to government implementing cost-containment measures. Severe staff shortages, increased patient mortality, request for transfers and mistakes due to the amount of pressure were amongst other challenges mentioned by healthcare workers. Moreover, this paper maintains that freezing of posts should not be part of health cost-cutting measures considering the substantial human resources crisis currently facing the health sector in the country.

*Keywords: Healthcare; Public Services Delivery; Staffing Moratoria; Budgetary Pressures; Austerity*

**Nduduzo Ndebele** is a doctoral candidate at the University of KwaZulu Natal, Howard College under the School of Social Sciences. His research interests is on Public Administration, Public Policy (Formulation, implementation and evaluation), Public Sector Human Resources, and Issues relating to graduate employability.

**Ndlovu** is a senior lecturer at the University of KwaZulu Natal under the discipline of Cultural and Heritage Tourism, he has public a number of articles his research interests include Tourism and Gastronomy, Tourism Enterprises and Sustainable Development, Destination branding & tourism marketing cultural heritage and Community Based Tourism

## 172. Social Support for Poverty Reduction in EU Countries: An Aspect of Socio-Economic Sustainability

Rasa Balvociute

### **ABSTRACT:**

As a consequence of the rising income of the population in the European Union absolute poverty is moderate, but relative poverty in many countries is increasing over the last 20 years. It is recognized that income inequality is one of the most important problems in ensuring socio-economic sustainability, for which appropriate measures are still being sought. Social assistance provided to low-income people should reduce their poverty, but research shows that the impact in different EU countries is not the same. Due to these differences countries with stronger economic and greater social support attract more internal immigrants, who often work in lower-skilled jobs despite their education. Meanwhile, donor countries are losing their working age population thus weakening their economic and social potential. These and other problems related to income inequality and poverty promote the development of accurate and effective social protection systems across the EU. The objective of the study provided in the proposal is to assess the impact of social assistance on the poverty of the population in the EU and its individual groups of countries.

*Keywords: Socio-economic sustainability, relative poverty, income inequality, gap of poverty, social assistance*

**Dr. Rasa Balvociute** is Associate Professor of Siauliai State College. Research interests: socio-economic sustainability, welfare state, income inequality, poverty, social support.

## 173. Co-operative Investment Policy as a Tool to Accelerate the Entrepreneurship and Improve the Poverty Condition in Bangladesh

Raju Mohammad Kamrul Alam, MD Nazmul Hossain, Al Humssi Ahmed

### ABSTRACT:

Bangladesh is one of the poorest countries in the world with low GDP/capita and minimum purchasing power. A third of the total population (24.3%) lives below the national poverty line (\$2/day) while a half of them do live in extreme poverty level (\$1.25). It's now a national issue as high rate of poverty is the cause of permanent economic downturn and socio-economic depression in Bangladesh. Many policies have been applied by government and NGOs since its independent in 1971 to alleviate the poverty but no policy has brought a remarkable outcome. The main purpose of this study is to examine the causes for high rate of poverty in Bangladesh and insufficiency of the government agencies that are working to alleviate the poverty and propose innovative approaches to growth of entrepreneurship to bring sustainable development and improve the poverty condition. The study is based on structural and semi-structural questionnaires and face to face interview. A total of 60 structural and same numbers of semi-structural questionnaires were given to 100 recipients of various age, sex, education, profession and economic levels regarding the factors to get feedback. In this research, a cooperative investment policy and a government action plan have been drawn up based on coordination between the various agencies, which allow the impoverished section of the population to save and invest collectively in order to involve them in entrepreneurship to lift them out of the poverty cycle and bring sustainable development.

*Keywords: Impoverished Population, Co-operative Investment Policy, Entrepreneurship, sustainable Development and Government Performance*

**Raju Mohammad Kamrul Alam**, I'm a Ph.D. holder and Senior Lecturer at the faculty of Economic, department of National Economy in the Peoples' friendship University of Russia (RUDN University), Moscow. I'm an expert on structural changes in economy for the developing countries of Asia and Ecological problems for economic development. My teaching areas are green economy, economy of sustainable development and national economy. I am current researching on the impact of poverty alleviation on socio-economic and ecological sustainability. I am intended to dedicate my future research on socio-economic and ecological sustainability for modernization of economy in developing and list developed countries.

**MD Nazmul Hossain**, I'm a Ph.D. student. I'm doing Ph.D. at RUDN University, Moscow, Russia. My field of research is-Micro saving based cooperative investment policy to improve the poverty condition in Bangladesh. The aim of the research is to see the impacts co-operative investment policy to growth of entrepreneurship and improve the poverty condition. A mechanism has been developed which allow the impoverished section of the population to save and invest collectively in order to involve them in entrepreneurship to lift them out of the poverty cycle and bring sustainable development. I'm self-motivated and extroverted and it's my passion to involve in social well fear activities.

**Al Humssi Ahmed**, I completed my Bachelor degree in 2008: specialization Economics - Accounting, Damascus University, Damascus, Syria. 2013 Master's degree: Economics - Accountant - Analyst

for Economic Projects – Title "Organization and improving analysis of accounting of fixed assets for enterprises» Tambov State University, 2013 Tambov Russia. 2017 PhD in specialization: International Economics, title of desertion: Syria Foreign economic relations: Status and Prospects for Development, RUDN University, Moscow – Russia 2017. I Have 1 monograph in international economics, and more 25 articles in accounting, Statistics, Financing Economics and International economics. Participated in regional and global conferences for example: 7th INTERNATIONAL SCIENTIFIC FORUM, ISF 2017, 7-9 February, Oxford, UK. III International Scientific Congress, Financial University under the Government of the Russian Federation 2015, Moscow – Russia. All-Russian Scientific Conference 2013 Tambov State University "Tambov – Russia.



## 174. National Human Rights Institutions and Sustainable Development with Specific Reference to Selected African Examples

John C Mubangizi

### **ABSTRACT:**

The United Nations has, through several resolutions, acknowledged the important role national human rights institutions can and do play in the promotion and protection of human rights. The 2030 Agenda for Sustainable Development makes explicit references human rights throughout its text. The Sustainable Development Goals also “seek to realize the human rights of all”. In other words, the 2030 Agenda and human rights are tied together in a mutually reinforcing way. Given their unique mandate and role, national human rights institutions (NHRIs) can play an important role in the implementation and follow-up of the Agenda, and the realisation of SDGs. Since the last decade of the last century, there have been unprecedented political and constitutional changes in Africa as several African states have enacted new constitutions in an attempt to transform themselves into democratic societies. In the context of human rights protection, one of the main outstanding features of these new constitutions is that most of them contain bills of rights and the other is that they establish national human rights institutions. The purpose of this paper is to discuss and determine the role that these institutions have played in promoting and protecting human rights in those countries and the implications for sustainable development. Due to the nature of this study, the paper will adopt a case study approach. This entails a discussion of human rights institutions from selected countries. The ultimate objective is to identify best practice and the lessons that can be learnt therefrom. Accordingly, the paper will conclude with lessons and recommendations on how the role and effectiveness of these institutions can be enhanced and how these institutions can be an asset for sustainable development.

*Keywords: Human rights institutions, human rights, sustainable development, Africa*

**Prof. John C Mubangizi** is the Dean of the Faculty of Law at the University of the Free State. He holds a Bachelor of Laws (LLB), a Masters in Public Law (LLM) and a Doctorate in Law (LLD). He also holds certificates in Human Rights, International Humanitarian Law, Leadership and Management of Higher Education, and Management of Higher Education Institutions. He is the author of the book entitled *The Protection of Human Rights in South Africa: A Legal and Practical Guide* (Juta & Company: 2004 and 2013) and has published numerous peer-reviewed journal articles on human rights. He has also presented papers at several national and international conferences. Professor Mubangizi is a Member of the Academy of Science of South Africa (ASSAf) and served as Advisor and Member of the ASSAf Council (2012 - 2015). He also served as the Chair of the Higher Education Quality Committee (HEQC) and a Member of the Council on Higher Education (CHE) of South Africa (2016-2019).

## 175. Welfare Policy of Professors and Academic Excellence for National Development in Nigerian Universities: Cost Implication Analysis

Terungwa Azende, Luper Iorpev, John Ayoor Ivungu

### ABSTRACT:

This paper is to explore the relationship between welfare of professors and academic excellence in Nigerian universities for national development with emphasis on cost implications. A survey design was adopted for this study. Pearson Correlation was used in analyzing the collected data to test whether or not there is any relationship between one set of variable and another. Findings reveal that lack of welfare for professors have a significant and negative influence on academic excellence and cost management in Nigerian universities. This paper recommends that universities should have a clear and standing policy on welfare of professors and other academic staff so as to enhance academic excellence and also save cost in running the university.

*Keywords: welfare policy, Nigerian universities, professors, cost implication*

**Dr Terungwa Azende** is the Head, Department of Accounting, Benue State University, Makurdi-Nigeria. Having worked in the university in a developing nation like Nigeria for over 13 years, he is worried about the welfare of professors in university system. He is investigating the effect of welfare policy of academics on academic excellence. He is interested in academic excellence because of its importance to economic development of any nation.

**Dr Luper Iorpev** is a lecturer at the Department of Accounting, Benue State University, Makurdi-Nigeria. He has worked in this university for about 10 years. He is interested in sustainability of the educational system in Nigeria which is why he co-authors this work.

**John Ayoor Ivungu** is a lecturer at the Department of Accounting, Benue State University, Makurdi-Nigeria. He has worked in this university for about 3 years. He is interested in welfare of lecturers because they are vital to human development in Nigeria which is why he co-authors this work.

## 176. Monitoring and Evaluation Critical to Sustainable Livelihoods in South Africa's Rural-Based Municipalities

Betty Claire Mubangizi

### ABSTRACT:

In South Africa, as in many other countries, municipalities are at the coalface of service provision, with communities relying on municipal performance for life-impacting services like the provision of water and sanitation, electricity, and transport – to mention but a few. The impact of effective service delivery or the lack thereof is particularly significant for the poor and rural citizenry who generally lack safety nets to cushion themselves against the inadequacies of poorly resourced, mainly rural, municipalities. In many instances, municipalities depend on other entities and invariably call on the effort, information or compliance from other actors to provide public services. In such a scenario, where variously positioned actors contribute to the attainment of the public good and public value, the role of monitoring and evaluation becomes a critical process as it ensures compliance by each of the role-players and effective delivery for the sustainable livelihoods of poor, mainly rural communities. What then are the complexities of service delivery processes in rural municipalities? What are the processes through which M & E takes place in rural municipalities? In what way are the beneficiaries of municipal services included in M & E, and what might be the critical contributors to a functional and all-inclusive M & E process in rural-based municipalities? This conceptual paper, posited in complex systems theory, draws on relevant literature and sector reports to answer the afore-mentioned questions, with a view to suggesting possible recommendations and areas for further research.

*Keywords: Rural municipalities; partnerships in service provision; monitoring and evaluation; community participation*

**Prof. Betty Claire Mubangizi** is a full professor of public governance. She holds the DST/NRF Research Chair of Sustainable Rural Livelihoods. The aim of the Research Chair in Sustainable Local (rural) is to support the capacity of researchers and public administrators to formulate and support effective public administration processes in responding to poverty and social exclusion within the framework of sustainable livelihoods.

## 177. Impact of Microfinance Banks on the Growth of Small and Medium Enterprises in Lagos Metropolis

Olufemi Adepoju Aladejebi

### ABSTRACT:

Small and Medium Enterprises (SMEs) play major role in the Nigerian economy especially in terms of Employment, growth, productivity and poverty alleviation. The purpose of this study was to examine the impact of Microfinance Banks on the growth of SMEs in Lagos metropolis. The data for this study was collected via questionnaires given to the owners of SMEs that had accounts with microfinance banks in Lagos metropolis. Out of 209 questionnaires distributed, 205 were viable and analyzed using SPSS package. The questionnaire contained 2 sections. Section 1 for general information while section 2 contains questions on effects of micro savings on financial performance, effects of micro credit on financial performance of the SMEs, effects of training on financial performance of the SMEs and financial performance. The outcome revealed that the savings among SMEs is encouraging because of higher interest rates compared to deposit banks, faster loan disbursement, failure of MFBs to conduct trainings for SMEs, while majority of SMEs experienced financial growth using MFB products.

*Keywords: SMEs, Microfinance, Growth, Lagos Metropolis & Central Bank of Nigeria*

**Dr. Olufemi Adepoju Aladejebi** is a fellow of Institute of Chartered Accountants of Nigeria, Fellow Chartered Institute of Taxation of Nigeria, Member Institute of Directors, Nigeria and member of The John Maxwell Team (USA). He obtained a Doctoral Degree in Business Administration (Entrepreneurship) from Walden University, USA. He has thirty years working experience. He has diversified experience in Accountancy, Audit, Taxation, Financial Advisory, Training, Entrepreneurship, Outsourcing and Recruitment. Currently, he is the Managing Consultant of The Great Business Clinic Ltd (TGBCL), Lagos Nigeria. He has undergone training both locally and overseas. He has written many published Articles and books on SMEs and Entrepreneurship. He has consulted for over 150 Small and Medium Enterprises in Nigeria.

## 178. SMEs and Access to Financial Capital: Exploring Islamic Microfinance for Sustainable Poverty Alleviation in Nigeria

Oluwakemi Amudat Ayanleye

### ABSTRACT:

SMEs play a significant role in the socio-economic development of Nigeria constituting about 90 percent of businesses and creating more than 80 percent of employment in the country. However, in spite of their importance, most SMEs do not grow beyond the level of subsistence and many fail within a few years of commencement. A major constraint to the development and sustainability of SMEs is access to financial capital and credit facilities. Addressing this challenge has been a priority for successive governments leading to the conceptualisation and implementation of various programmes aimed at making finance accessible to SMEs. The microfinance scheme being the current of such programmes is aimed at providing credit to SMEs. However, these initiatives have failed to yield the expected result due to a number of factors, chief among which is the cost of funds and securitisation. This paper explores the Islamic finance approach to microfinance in Nigeria as a potential financing scheme for SMEs. Underpinning Islamic microfinance is the avoidance of interest and encouragement of entrepreneurship. The paper posits that Islamic microfinance will bring about socio-economic development of SMEs as it is a vehicle for financial intermediation between the financial sector and the real sector of the economy.

*Keywords: Financial Capital Access, Islamic Microfinance, Poverty Alleviation, SMEs, Sustainability*

**Oluwakemi Amudat Ayanleye** is Lecturer in the Department of Business and Industrial Law, Faculty of Law, Olabisi Onabanjo University, Ago Iwoye, Nigeria. She teaches Law of Contract and Commercial Law, Intellectual Property Law and Maritime Law. Her research interests include intellectual property law, regional integration and international trade law. Before joining the academia, she was in active legal practice. She is currently a doctoral student at Babcock University, Ilishan-Remo, Ogun State, Nigeria, researching on Protection of Intellectual Property Rights and Promotion of Indigenous Technology in Nigeria. She has authored several journal articles and chapters in books.

## 179. Exploring the Nexus between Business Sustainability and Corporate Governance

Renata Konadu

**ABSTRACT:**

The concept of business sustainability encompasses three main dimensions of economic, social and environmental performance, which amalgam to ensure corporate survival. However, recent corporate scandals and companies' collapse have deepened the need to probe businesses sustainability engagements through corporate governance lens. The crucial roles of the board of directors in making business sustainability decisions makes it highly essential to explore their diverse governance elements. As such, unlike previous studies that selectively examine the corporate governance traits and sustainability, this paper takes a step further to employ the different pillars of corporate governance and all the three sustainability dimensions. Using panel fixed effects and Generalized Methods of Moments for endogeneity, the results indicate that indeed the corporate governance pillars have different impact on business sustainability. We found that board structure, strategy and shareholder rights are significantly and positively related with social and environmental performance. For economic performance, only board structure and compensation were found to be positively and significantly linked with Tobin's Q. The intriguing discovery of board structure as the key corporate governance pillar, which spans across all sustainability dimensions, has strong policy, managerial and practical implications for companies in the quest of improving sustainability for long-term survival.

*Keywords: Business sustainability, economic performance, social performance, environmental performance, corporate governance*

**Dr. Renata Konadu** is a Lecturer in Accounting and Finance at De Montfort University in the Leicester Castle Business School. Her research interest lies in the areas of Environmental Reporting, Environmental Accounting, Corporate Social Responsibility, Business Ethics and Corporate Governance. She has published in leading journals including Business Strategy and the Environment Journal, Corporate Governance: An International Journal of Business in Society and Journal of Economics and Business Review.

## 180. Human Security and Faith Based NGOs' Poverty Alleviation Programmes (PAP) in Nigeria - Case Study of the Zakat and Sadaqat Foundation

Adeejat-Kubra Adenike Kolawole

### **ABSTRACT:**

Human security in the context of this study includes the security of people's means of livelihoods, their access to (rights to) food, shelter, clothing and a healthy environment. Nigeria is currently embroiled in a number of issues which have profound effects on its ability to fulfill its constitutional obligation of ministering to the welfare and security of its citizens. Faith based NGOs' Poverty Alleviation Programmes (PAP) have therefore moved in to stand in the gap. This study investigated the PAP initiative of an NGO called the "Zakat and Sadaqat Foundation". The researcher finds that the NGO adopted a unique scheme in its pool of resources thus surmounting the oft excuse of lack of adequate funding by government oriented PAP. The researcher measured the impacts of this NGO's PAP in a section of a Lagos community and finds that the provision of vocational and skill acquisition training and tools of trade were beneficial. The paper recommends that with proper accounting mechanism, the Nigerian government may device a public private partnership with faith based PAP, thus fulfilling her end of the pact of enhancing the human security of her citizen.

*Keywords: Faith based NGOs, Human Security, Poverty Alleviation Scheme, Zakat & Sadaqat*

**Adeejat-Kubra Adenike Kolawole**, (nee Adelaja) bagged her LLB degree from the Ogun State University (now Olabisi Onabanjo University), Ago-Iwoye, Nigeria in 1989. She was called to the Nigerian Bar in December 1990. Her LLM degree was obtained from the University of Ibadan in 2004. Currently, she is a Lecturer at the Department of Private Law, Faculty of Law, Olabisi Onabanjo University, Ago Iwoye, Nigeria and also a Doctoral student of the School of Law and Security Studies, Babcock University, Ilishan -Remo, Ogun State, Nigeria.

## 181. Proper Enforcement of Extant Rules on Health in Nigeria: A Penacea to Better Health Delivery System

Akinrinmade Gbade

### ABSTRACT:

It is indisputable that the existence of a safe, well-structured and properly managed health care delivery system impacts positively on the economic and environmental sustainability of a Nation. Nigeria, despite its abundant human and economic resources, has an appalling health care delivery system. Its health system is poorly developed, not properly managed, and has suffered several backdrops in terms of funding, manpower, amongst a host of other shortcomings. Though there are extant legal provisions that provides for a better health delivery system for people, in spite of this; a large number of Nigerian still suffer poor quality health services. The problem is not with the law, rather in its implementation, bad governance, poor infrastructure, inadequate manpower, in-adequate funding, the existence of unregistered/quack health professionals, failure to adequately enforce existing legal regime by the regulatory authorities. It is in the light of this that this paper set out in the main to examine the current state and structure of the health care delivery system in Nigeria and its challenges, with the view of proffering some solutions which will assist in improving the safety of its present and future generation.

*Keywords: Enforcement, Extant rules, Economic Sustainability, Environmental Sustainability Health Care Delivery*

**Dr. Akinrinmade Gbade**, is the Head of Department of International Law and Jurisprudence of the Faculty of Law, Olabisi Onabanjo University, Ago-Iwoye, Ogun State Nigeria. His area of interest include Product Liability Laws, Jurisprudence and International Law.



## 182. Empirical Research on the Latent Factors that Facilitate the Individuals' Interaction with the Community

Ion Tudor, Cristina State, Valentina Nicolae

### ABSTRACT:

The communion of interests and the open, voluntary membership which characterise social economy enterprises are a challenge we will be trying to deal with in this paper. Our dilemma regarding the existence of some conditionality between the individuals' expectations from their community and their availability to get involved in solving community problems has become the main objective of the study. Solving this dilemma came as a natural consequence of the initiation of a questionnaire-based study, including separate sets of questions concerning the perception of the participants about how the community meets their expectations, combined with questions about their availability to act to the benefit of the community. The work hypotheses were tested with the IBM Statistics and Microsoft Excel applications. The results obtained after testing the hypotheses signal two important aspects: on the one hand, the availability of the participants in the study to act for the benefit of their communities is not conditional on the expectations they have from the community and, on the other hand, at the time of the survey, the preference of the study participants to act for the benefit of the community is not sufficiently well defined.

*Keywords: communities, social economic enterprise, solidarity, social implication*

**Ion Tudor** is a PhD Student at the Bucharest University of Economic Studies, Romania. Due to the fact that he works as a Manager in a company specialized in road assistance services, his main research interest is in organizational communication in assistance services.

**Dr. Cristina State** is an Assistant Professor at the Bucharest University of Economic Studies, Romania. Her main research interests are related with Business Communication & Negotiation, Organizational Communication and Human Resource Management. She is a member of the International Centre of Training in Business Administration (CIFAA).

**Dr. Valentina Nicolae** obtained her PhD at the Bucharest University of Economic Studies, Romania. She is a passionate researcher in the field of Social Economy.

## 183. Volunteering – an Efficient Collaborative Practice for the Local Communities Sustainability. Empirical Study

Daniela Dragne-Predeteanu, Dan Popescu, Valentina Nicolae

### ABSTRACT:

The scientific research we have conducted concerns volunteering as a collaborative practice and as a basis for the sustainable development of local communities. Identifying the suitable practices capable of transforming a group of individuals into a prosperous and sustainable collaborative community has become our priority concern. Therefore, the main objective of the study was outlined as a response to the question: “which are the tangible and intangible effects of the acts and facts of the collaboration identified in the communities where the participants in the study came from?”. The answer was prefigured as the outcome of an exploratory analysis that also revealed to us the motivation, satisfaction and results obtained by the participants in the survey, as a consequence of their personal experience in relation to their community. The quantitative analysis of collected data was performed in IBM SPSS software and the qualitative analysis with the Atlas Ti application. Despite the poverty of information sources in the field, our exploratory research has succeeded in highlighting the role of volunteering as a factor of sustainable social cohesion and practice in local communities. And this is at least one of our reasons useful to continue our theoretical and applied researches related to the emergence and sustainable development of collaborative communities.

*Keywords: exploratory analysis; collaborative community; sustainability; social economy enterprise; social innovation*

**Daniela Dragne-Predeteanu** is a PhD Student at the Bucharest University of Economic Studies, Romania. Her thesis subject and main research interest is related with organizational communication in airline industry.

**Dr. Dan Popescu** is a Professor at the Bucharest University of Economic Studies, Romania. His main research interests are related with Business Communication & Negotiation, Organizational Communication and Human Resource Management. He is also the President of the International Centre of Training in Business Administration (CIFAA).

**Dr. Valentina Nicolae** obtained her PhD at the Bucharest University of Economic Studies, Romania. She is a passionate researcher in the field of Social Economy.

## 184. Theoretical Foundations of Optimising Processes in Energy Conversion Systems to Increase the Effectiveness and Ecological Safety of Their Functioning

Irina Suvorova, Oleg Kravchenko, Dmitriy Veligotskiy, Vitaliy Goman

### ABSTRACT:

A methodological approach based on using system analysis is suggested to increase the effectiveness and ecological safety of operating complex energy-technological systems. The approach involves identifying the actual mechanism of functioning of an energy conversion system and building an adequate model of developing complex physico-chemical processes and technologies comprising the system. In the study, the concept of an energy conversion system is defined as a multitude of its elements – technologies, physico-chemical and chemical technology processes, and their separate stages united by common rules and interaction algorithms, which impart to the system as whole new qualities that are absent in each of its elements. Such an approach allows accounting for the entire multitude of technologies and processes, on which the functioning is based.

*Keywords: large system, correlation analysis, hydrocavitation activation, energy conversion*

**Irina Suvorova**, Project leader in creation of multi-function hydrocavitation systems of energy transformation for producing the new qualitative composite liquid fuel oils (CLFO) with high power and ecological indices and their effective incinerating. An authority in the field of mathematical and computer modeling.

**Oleg Kravchenko**, Head of Non-conventional Energy Technologies of The A. Podgorny Institute of Mechanical Engineering Problems (IPMash) of The National Academy of Sciences of Ukraine (NAS of Ukraine), Kharkiv, Ukraine.

**Dmitriy Veligotskiy**, Leading Engineer of Non-conventional Energy Technologies of The A. Podgorny Institute of Mechanical Engineering Problems (IPMash) of The National Academy of Sciences of Ukraine (NAS of Ukraine), Kharkiv, Ukraine.

**Vitaliy Goman**, Leading Engineer of Non-conventional Energy Technologies of The A. Podgorny Institute of Mechanical Engineering Problems (IPMash) of The National Academy of Sciences of Ukraine (NAS of Ukraine), Kharkiv, Ukraine.

## 185. Nuclear Energy and Sustainable Development

Vladimir Grachev, Natalia Kuryшева

### ABSTRACT:

The authors have conducted a systematic analysis of how the use of nuclear energy influences the achievement of Sustainable Development Goals. The analysis was based on 20 ecological, 3 economic, and 4 social indicators and showed that natural gas and nuclear energy are the most advantageous energy sources for the achievement of all the 17 Sustainable Development Goals pronounced by the United Nations in 2015. Along with solar energy, wind energy, and hydropower, nuclear generation is nature-like and allows solving the global climate change issue. Together, these energy sources constitute the Green Square that ensures future sustainable development. The authors have shaped an agenda for Sustainable Development Goals implementation. The agenda is based on the vast capabilities of the Russian nuclear industry, which secures an acceptable and fair development of the economic and social spheres as well as of the environment.

*Keywords: sustainable development, nuclear, sustainable development goals*

**Dr. Vladimir Grachev** started his career in 1960s as an engineer at the Penza Compressor Plant; from 1974 to 1991, he was a lecturer and later held a chair at the Penza State Polytechnical Institute. 1990, he was elected a People's Deputy, Deputy Chairman of the Committee on Higher Education and Training at the Supreme Council of the Russian Federation. 1993-1999, Dr Grachev was the Chief of the Federation Council's Committee on Science, Culture, Education, Health and Ecology. 1999-2007, he was elected a deputy of the State Duma, the Chairman of the Committee on Ecology. Since 2008 he has been an Adviser to the Director General of Rosatom. Dr Grachev is a PACE honorary member, Chairman of the Public Council under Rostekhnadzor, member of the Rostekhnadzor Collegium, member of the Commission of the Russian Federation for UNESCO, President of the Vernadsky Nongovernmental Ecological Foundation, President of the Russian Ecological Academy.

**Dr. Natalia Kuryшева** graduated from Ivanovo State Medical Academy in 1986 and applied for an internship at the Ophthalmology Department of the same university. In 1987, she finished the internship and enrolled for residency training at the same department. 1990-1993, she was taking up a full-time postgraduate study at the same department. In 2000, she applied for ophthalmology doctorate at the S.N. Fyodorov Eye Microsurgery Complex and received it in 2004. Dr Kuryшева has 25 years of working experience as an eye surgeon and ophthalmologist. Today, Natalia Kuryшева occupies the position of Head of Ophthalmology Diagnostic Centre at Burnasyan Federal Medical Biophysical Center of Federal Medical Biological Agency in Moscow, Russia. She is also a professor at the Ophthalmology Department of the Federal Biomedical Agency Advanced Training School, in Moscow, Russia. Natalia Kuryшева is a member of the Russian Ophthalmology Society, the American Academy of Ophthalmology, the European Glaucoma Society.

## 186. Experimental Analysis of Wind Interaction with Olive Grove and the Atmospheric Surface Boundary Layer

María Jiménez-Portaz, María Clavero, Miguel A. Losada

### ABSTRACT:

The emblematic olive grove covers 17% of the South Spain territory. Last years, intensive farming has been developed around its exploitation. This causes many environmental and social problems, ecological interactions and environmental variables are modified, accentuating the climate change effects. The aim of this work is optimize the layout to allow a sustainable agricultural production, adapting the exploitation to the climate change and minimizing alterations over environmental variables. Thus, interaction between the Surface Boundary Layer (SBL) and olive groves has been analyzed experimentally. Wind tunnel reduced-scale tests were carried out for different setups: grid with homogeneous tree models, over a flat surface and over a hill, and simulating different vegetation covers. The same tests were replicated with staggered pattern and heterogeneous tree models. Wind velocity and turbulence kinetic energy profiles were obtained using Hot Wire Anemometry, taking measurements between models and behind them. It has been proved that olive grove spatial layout and the presence or absence of vegetation cover modify the SBL dynamics. Consequently, not only fundamental environmental variables are altered, for example, the moisture flux and the evapotranspiration, but also important variables for human health are modified, as pollen flow dispersion to urban areas.

*Keywords: Olive grove, environmental management, sustainability, wind tunnel*

**María Jiménez-Portaz** is a researcher in the Environmental Fluid Dynamics Research Group of the University of Granada, Spain and She is part of the Andalusian Institute for Earth Research System. She obtained her MSc in Forestry Engineering and Environmental Hydraulics. She is carrying out her PhD in Atmospheric Dynamics and its interaction with Ecosystems and Renewables Energies, working in experimental wind tunnel tests and their application to the Environment, environmental impacts and the Climate Change.

**María Clavero** is Assistant Professor of the University of Granada with 15 years' experience in the field of physical modelling. During the last 10 years is the responsible of the Environmental Fluid Dynamics Lab of the University of Granada. She obtained her MSc in Civil Engineering and she has developed tests in the areas of maritime engineering and wind engineering. She has been involved in all the projects developed in the laboratory.

**Miguel A. Losada** is Professor Emeritus of Coastal Engineering at the University of Granada with more than 40 years' of experience in the field of maritime engineering, coastal structures and coastal morphodynamics. He founded the Environmental Fluid Dynamics Group of the University of Granada and has been the Head of the Andalusian Institute for Earth System Research for the last 7 years. He has published more than 150 peer-reviewed journal papers, led more than 40 research projects and supervised over 45 PhD students. He is a member of the Spanish Royal Academy of Engineering and received the prestigious International Coastal Engineering award in 2011 given by the American Society of Civil Engineers.

## 187. The Status Quo's Role in Improving the Estimation of Willingness to Pay in Choice Experiments

Alexandru Maxim, Teodora Cristina Roman

### ABSTRACT:

European household consumers have seen a gradual increase in the cost of their electricity bill, partly due to ambitious support policies for the development of renewable energy. Some consumers may have a higher willingness to pay (WTP) for clean energy, which could constitute a competitive advantage for electricity suppliers branding themselves as "sustainable". A discrete choice experiment has been used in order to estimate the WTP of households for renewable energy. For the last decade, researchers have debated whether to add a "status quo" / "not willing to pay for changes" option in the experimental design, as this may generate complications and not add sufficient benefits. In this paper we use an original approach based on two parallel model estimations applied to the same sample of respondents in order to demonstrate the effect of adding a "status quo" option. Our results show that not including it would have led to an overestimation of about one third of the respondents' WTP. While more research on the topic is needed, we demonstrate the risk of simplifying the experimental design and propose a facile method of enhancing the experiment with a dual model design.

*Keywords: discrete choice experiment, status quo, renewable energy, household consumers, willingness to pay*

**Assist. Prof. Alexandru Maxim**, Alexandru Ioan Cuza University of Iasi, is a member of the Department of Marketing, Management and Business Administration. He is director of a research grant entitled "Influence factors and implications of the attitudes of household electricity consumers regarding the development of the renewable energy sector in Romania" (Ministry of Research and Innovation, CNCS-UEFISCDI, project number PN-III-P1-1.1-PD-2016-1864). He has been involved in the management and implementation of 9 projects focused on ecosystem services, energy and environmental policies and economic development (Horizon 2020, COST etc.). He also has several years of practical experience in the strategic assessment of the energy sector (working for GE Energy Europe). He has a PhD in Marketing (Summa cum Laude rating) during which he analyzed household consumers' preferences regarding renewable energy. His current research interests include: marketing, sustainable development, EU socioeconomic and environmental policies and energy markets.

**Prof. Teodora Cristina Roman**, Alexandru Ioan Cuza University of Iasi, is a member of the Department of Marketing, Management and Business Administration. She is the project mentor for a research grant entitled "Influence factors and implications of the attitudes of household electricity consumers regarding the development of the renewable energy sector in Romania" (Ministry of Research and Innovation, CNCS-UEFISCDI, project number PN-III-P1-1.1-PD-2016-1864). She has extensive research experience, throughout which she published 19 books, 85 articles (7 in top WoS journals, out of which 4 were awarded for research excellence), 12 research projects, reviewer of 3 academic journals and presenter/board member in 30 academic conferences.

## 188. Navigating the Waters of “The Engine of Development”- Small Medium Enterprises (SME) in India

B. Vishnupriya, A. B. Abirami

### ABSTRACT:

SMEs are considered to be the spine of the Indian economic structure which has on a continuous basis proved to be the bulwark of the country's economy, providing it the resilience to ward off economic shocks and the sustaining capacity in many financial adversities and calamities. These have relentlessly contributed to the overall growth of national GDP and also has generated employment to millions and export to the worldwide economy. While, SMEs are the engines of development in the current scenario, their growth is hindered by factors like low capital basis, availability of low-cost credit, poor technology, lack of quality and sufficiency in material and human resources, infrastructural constraints, lack of market awareness, globalization of trade, increasing competition and timely restructuring when stressed. The motive of this research paper is to analyze and understand the impediments in the growth of SMEs in the Indian context and to suggest solutions to overcome them. The paper also seeks to explore the impact of growth of these SMEs at a global juncture.

*Keywords: Small medium enterprises in India, Engines of development, Economic shocks, National income, Lack of market awareness*

**B. Vishnupriya**, 3rd year law student of SASTRA deemed to be university, Thirumalaisamudram, Thanjavur, India hailing from a family where father works in a private banking institution and seeks to research on small and medium enterprises and its effect on Indian economy.

**A. B. Abirami**, 3rd year law student of SASTRA deemed to be university, Thirumalaisamudram, Thanjavur, India is from a family whose main background is agriculture and seeks to research on the small and medium enterprises and its effect on the Indian economy. Where the utmost interest devolves upon the study of Indian economy and its development, this would enhance the research which is carried out.

## 189. A Pioneering Platform: Strengthening Environmental Democracy and Justice in Latin America and the Caribbean

Giada Ferrucci

### ABSTRACT:

Latin America is considered the most dangerous region in the world for environmental defenders due to increasingly deadly conflicts over natural resources. After a six-year negotiation process, on March 4, 2018, 24 countries in the Latin American and Caribbean regions signed the Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters, the region's first ever legally binding treaty on environmental rights. The Regional Agreement, also known as Escazú Convention, represents a major step forward in developing conceptions of global environmental justice. While most definition of environmental justice have referred to issues of equity and distribution of environmental benefits and damages, today elements as access to information, public participation in the decision-making processes, and protection of environmental defenders are more important than ever to address environmental injustices. This paper examines how the provisions of this Convention can help us develop conceptions of global environmental justice and reduce barriers that undermine vulnerable communities' ability to exercise their environmental rights. The existence of these different elements of environmental justice demonstrates the importance of a unified theory and practice of environmental justice through the legislation embodied by the Escazú Convention as a pioneering agreement.

*Keywords: Environmental Justice, Environmental Democracy, Information Access, Participation*

**Giada Ferrucci** is a Doctoral Student of Media Studies, University of Western Ontario, London, Canada. She holds a Bachelor Degree in Economic Development and International Cooperation from the University of Florence, Italy, and later completed an Master in International Studies from the University of Aarhus in Denmark. As part of her Master Program, she worked in El Salvador at intern for CRIPDES, a local environmental NGO, and for ACAFREMIN, the Central American Alliance Against Mining. During her work in El Salvador she has participated in several activities and research projects focused on environmental activism, regional alliances and environmental justice theory. Currently she is a member of the Centre for Environment and Sustainability at the University of Western Ontario. Her research focuses on environmental activism, social movements and framing environmental communication with a specific focus on the Latin American region.



## 190. Language of Rights and Gifts of Love: Revisiting Inheritance in Eastern India

Amrita Mondal

### ABSTRACT:

Since the late 1990s, development institutions and research have established the benefits of women's ownership of land and property in transforming inequality and poverty through extensive use of language of rights in research, policy and practice. Development academia has simultaneously emphasized that it is not just an increase in women's command over property but also the processes through which this increase occurs that has a crucial bearing on gender relations. This paper is a response to the strategies, tensions and challenges associated with 'rights advocacy' by arguing that property ownership does not lie outside of gender relations as a separate mechanism having potential to transform existing gender relations; rather it is in itself a relation that is profoundly embedded in and manifested through gender relations and kin-work. Analysing ethno-data of a village in West Bengal this paper re-evaluates affinal, conjugal and natal relations of women within marriage, kinship and domesticity to locate possibilities of new spaces of negotiations to redefine gendered property relations in everyday realities. Pushing the boundary of liberal feminist and progressivist development paradigm, these sites of strategic action as well as emotive association suggest a probable moral alternate where principles of inheritance operate beyond claim of rights.

*Keywords: Inheritance rights, Gender, Gift of love, Domesticity*

**Amrita Mondal** is an engaged development professional in gender and livelihood security with a Master's degree in Sociology, an Advanced European Master's degree in Global Studies and presently a doctoral candidate of the special research group "Local Politicization of Global Norms" at Max Weber Centre, Erfurt. At the Centre, she investigates the socio-legal processes of gendered land relations by analysing inheritance laws. Prior joining the doctoral program in 2015 Amrita worked in gender justice based applied research and capacity development programme for over 9 years, in international organizations like GIZ, Welthungerhilfe and Women without Borders. She has in-depth expertise in social policy research, diversity management and extensive multicultural experience in working and living in South Asia, East Africa, the Caribbean and Europe. She is passionate about adult education and teaches in Community College of Erfurt. She speaks English, German, Hindi and Bengali.

## 191. Business Life Expectancy of Manufacturing Sector from Montería, Córdoba - Colombia

Juan Angel Chica Urzola, Ciro Alfonso Serna Mendoza

### ABSTRACT:

The Sustainable Development (SD) of a community is intimately linked to business. This topic turns out to be of great relevance for the economy and sustainability of a certain territory. Companies provide solutions to different factors that take shape within the company, but its origin and consequences are in all dimensions of the DS. The importance of companies in the SD has been recognized by the UN by making them co-responsible in at least 11 of the 17 Sustainable Development Goals - SDGs (UN, 2015). For a company, life expectancy is determined by the different factors that affect it positively or negatively. This is fundamental. What factors influence the duration of the companies? This document presents the results of an investigation to establish the life expectancy of the manufacturing companies of the city of Monteria, Colombia during the period 2013-2018, based on the analysis of the official data contrasted with a hypothesis and interviews with the actors to determine possible causes and relationships.

*Keywords: Manufacturing Sustainable Development, business life expectancy, business sustainability*

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**Ciro Alfonso Serna Mendoza**, Professor and Investigator. Senior investigator. Director of the Doctoral Program in Sustainable Development from the University of Manizales, Colombia.

## 192. Identification of Risk Factors of Food Losses in Food Processing Plants

Beata Bil ska, Marzena Tomaszewska, Danuta Kołozyn-Krajewska

### ABSTRACT:

Losses take place along the entire food chain and they need to be analysed and monitored due to their impact on the development of the food sector. In addition to quantitative losses, irrational use of food contributes to the depletion of natural resources (water and energy) and poses a threat to the environment, constituting a barrier to sustainable development of the food sector. Food losses have an impact on the food system and its balance in three dimensions economic dimension: • causing economic losses; • social dimension; • environmental dimension – due to the waste of resources used to produce food that is never eaten and due to greenhouse gas emissions. The aim of this study was to establish the causes and consequences of food losses in food industry plants and to propose mitigation measures. The material for the study was data on losses collected in six food industry plants located in Poland. The study was conducted on the basis of a survey. In the studied plants 20 causes of the loss were diagnosed. A fundamental role in food production is played by access to raw materials of appropriate quality. In any enterprise the key factor responsible for the formation of errors is human. In summary, risks of food losses must be prevented by eliminating any errors that may result in a product of inadequate quality characteristics.

*Keywords: food losses, causes of food losses, consequences of food losses, risk factors, food industry plants*

**Beata Bil ska**, Assistant Professor, a member of Polish Food Technologists' Society. She works at Food Hygiene and Quality Management Chair at the Warsaw University of Life Sciences-SGGW. Her research focuses on the food waste and food losses in the food chain – the scale, causes, the possibility of limitations, food quality assurance (especially regional and traditional products), the quality of catering services with particular emphasis on the quality of the food served. At the moment she is the member of the consortium implementing the project called "Developing a system for monitoring wasted food and an effective program to rationalize losses and reduce food wastage" (acronymed PROM) funded through the National Center of Research and Development.

**Marzena Tomaszewska** is associated with the Faculty of Human Nutrition and Consumer Sciences, Warsaw University of Life Sciences since 1996. First, as a student, then the participant doctoral studies and next as an assistant professor. Her scientific interests are: production technologies for meals with extended life (e.g. cook-chill and cook-freeze method); the use of vacuum and modified atmosphere in production of ready meals; verification of the compatibility of technological process in catering establishment with GMP/GHP principles; design of catering establishments, issues related to food waste. Marzena Tomaszewska participated in national projects of a scientific and didactic, for example: "Model reduce losses and food waste for the benefit of society", "Developing a system for monitoring wasted food and an effective program to rationalize losses and reduce food wastage" (acronymed PROM) "ABC of Healthy Eating". She is an author or co-author of approximately fifty scientific publications.

**Danuta Kołozyn-Krajewska** is Professor of food technology, hygiene and quality management at Warsaw University of Life Sciences and V-President of Polish Food Technologists' Society. She is a member

of Polish Academy of Science (Committee of Food Sciences) and member of Polish Committee of IUFOST. The main scientific area: food hygiene, food microbiology (especially predictive food microbiology), probiotic bacteria, food quality assurance, Risk Analysis. She has an extensive functional expertise in the area of food quality and safety, obtained by providing a HACCP training in food industry, and conducting the studies on food safety in Poland. She managed several scientific project financed by Polish institutions; now is the leader of the consortium implementing the project on the rational use of food in the food chain, funded through the National Center of Research and Development. She has published over 400 scientific papers, popular science, academic textbooks (Hygiene of food production), textbooks for high school students (Commodities and Commodity food) and books (eg Food Safety Management).

## 193. Food Waste in Catering Establishments - Analysis of Causes and Consequences

Marzena Tomaszewska, Beata Bilska, Danuta Kołożyn-Krajewska

### ABSTRACT:

The scale of food waste is different, depending on the element of food chain. The majority of food waste is generated in households (42%), followed by distribution (39%), food service sector (14%) and retail and wholesale sales (5%). The aim of work was to indicate causes and consequences of food waste in food service sector. The research was conducted in catering establishments using a specially designed questionnaire. The study was conducted in the Mazowieckie Voivodship (Poland) in the year 2019. Forty two questionnaires were collected. The scoring of most questions was based on 5 point scale (e.g. 1 - never to 5 - always). Based on the results obtained in the practical part, it was found that the most frequently wasted product in catering establishments was bread (37.8% of indications), withered fruit and vegetables (24.5% of indications). The most frequent reason for throwing out food was: preparing too many meals (mean = 2.5), too large purchases (mean = 2.25) or non-considered shopping (mean = 2.0). The results of this study may play an important role in the prevention of food waste in the catering establishments by indicating which areas of employees' practice and knowledge should be strengthened by educational activities.

*Keywords: food waste, causes of food waste, food service sector, catering establishments, waste of bread, waste of fruit and vegetables*

**Marzena Tomaszewska** is associated with the Faculty of Human Nutrition and Consumer Sciences, Warsaw University of Life Sciences since 1996. First, as a student, then the participant doctoral studies and next as an assistant professor. Her scientific interests are: production technologies for meals with extended life (e.g. cook-chill and cook-freeze method); the use of vacuum and modified atmosphere in production of ready meals; verification the compatibility of technological process in catering establishment with GMP/GHP principles; design of catering establishments, issues related to food waste. Marzena Tomaszewska participated in national projects of a scientific and didactic, for example: "Model reduce losses and food waste for the benefit of society", "Developing a system for monitoring wasted food and an effective program to rationalize losses and reduce food wastage" (acronymed PROM) "ABC of Healthy Eating". She is an author or co-author of approximately fifty scientific publications.

**Beata Bilska**, Assistant Professor, a member of Polish Food Technologists' Society. She works at Food Hygiene and Quality Management Chair at the Warsaw University of Life Sciences-SGGW. Her research focuses on the food waste and food losses in the food chain - the scale, causes, the possibility of limitations, food quality assurance (especially regional and traditional products), the quality of catering services with particular emphasis on the quality of the food served. At the moment she is the member of the consortium implementing the project called "Developing a system for monitoring wasted food and an effective program to rationalize losses and reduce food wastage" (acronymed PROM) funded through the National Center of Research and Development.

**Danuta Kołożyn-Krajewska** is Professor of food technology, hygiene and quality management at Warsaw University of Life Sciences and V-President of Polish Food Technologists' Society. She is a member

of Polish Academy of Science (Committee of Food Sciences) and member of Polish Committee of IUFOST. The main scientific area: food hygiene, food microbiology (especially predictive food microbiology), probiotic bacteria, food quality assurance, Risk Analysis. She has an extensive functional expertise in the area of food quality and safety, obtained by providing a HACCP training in food industry, and conducting the studies on food safety in Poland. She managed several scientific project financed by Polish institutions; now is the leader of the consortium implementing the project on the rational use of food in the food chain, funded through the National Center of Research and Development. She has published over 400 scientific papers, popular science, academic textbooks (Hygiene of food production), textbooks for high school students (Commodities and Commodity food) and books (eg Food Safety Management).

## 194. Education in Biosphere Reserves to Enhance Intercultural Competence between Japanese and Russian Youth

Aida Mammadova

### **ABSTRACT:**

Japan and Russian youth has many stereotypical cultural perceptions about each other's culture, which in many times leads to cultural misunderstandings with negative effects. In this study we decided to use Biosphere Reserves (BRs), which are highly recognized areas under UNESCO's MAB Programme for their conservation, learning and sustainable development initiatives, to enhance the cultural competence and awareness in youth of both countries. 50 Japanese students were divided into two groups and visited 3 Russian BR with 4 universities, with 2 weeks' duration of each trip. Later 14 Russian students visited Japanese Mount Hakusan BR and participated in the academic BR training course for 3-weeks. We have conducted the specific survey to evaluate the changes in students' knowledge, attitude and skills towards each other's culture, and it was observed that all 3 elements were increased in all students. Besides 90% of students replied that they were strongly agree, that BR helped them to understand cultural diversity of each county. 87% replied that community interaction was the most effective way to break cultural stereotypes. This kind of cross-cultural communication in BR, showed very positive results and can be used as the new methodology for the future environmental education.

*Keywords: Environmental Education, Sustainability, Biosphere Reserves, Culture, Awareness*

**Dr. Aida Mammadova** is an Associate Professor for Organization of Global Affairs, Kanazawa University, Japan. Her research is focused on the environmental education and sustainable development in rural and urban areas.

## 195. Social and Cultural Aspect in Foreign Language Motivation Defined by Integrative and Instrumental Factors

Valbona Softa

### ABSTRACT:

This paper aims to investigate the social and cultural aspect in foreign language learning motivation, with main focus English language, as a compulsory course in the official education curricula in Albania, from primary level to Master's Study Programs. The indicators in this study are the integrative and instrumental variables. Based on literature review and empirical research data, two research questions are presented in this paper: 1. At what extent are students oriented to learn English language in terms of integrative and instrumental motivation? 2. Which factor is the best predictor to motivation in language learning? A quantitative method was approached and data was analyzed through SPSS, 18. Attitude Motivation Test Battery was applied in a sample of 1800 subjects. The reliability Alfa Chronbach coefficient of the Test was ( $=.88$ ). The findings showed that best predictor variable to motivation in language learning is the integrative factor, at values  $\beta=0.476$ ,  $t=21.110$ . This result is statistically significant at value  $p<0.001$ . The study also found that students are moderately motivated because of integrative reasons, mean value ( $=4.83$ ) out of (6) and  $SD=0.86$ , and the students are slightly motivated in terms of language functional role, mean value (4) out of (6).

*Keywords: Integrative and instrumental role, motivation, foreign language learning*

**Dr. Valbona Softa** is Lecturer of English Language for Specific Purposes (ESP) and Evaluation Methods in Education in the Second Cycle of Studies, Master of Science Study Program in Non Public and Public University of Tirana, Albania. Dr. Softa is Head of Research and Foreign Relations Office at "Wisdom" University College, Tirana, Albania and member of Institutional Quality Assurance Group for Higher Education. The implications of the duty include policy making in research in Human Sciences, application of research result in Higher Education and implementation and deepening of foreign cooperation in Higher Education.



## 196. Criminal Policy as a Basis for the Sustainable Development of Public Security

Andrejs Vilks

### **ABSTRACT:**

Sustainable development of society is possible in an environment where there is no clear threat to its successive evolution and there are sufficient operational conditions. The greatest threats to public security are related to criminal acts: organized crime, terrorism, trafficking in human beings and their organs, drug and arms smuggling, cyber threats. Despite the continuous increase in resources for public and national security, the use of new technologies to strengthen public security does not reduce the level of threats. Sustainable development of public security should be based on a balanced, rational and effective criminal policy. Criminal policies can be perceived, valued and also implemented as a set of scientific theories and concepts on the conceptual, strategic and tactical elements of preventing and combating crime and other anti-social phenomena. The fight against crime can be recognized as an element of the cultural environment. It is not possible to achieve the effective functioning of society and its legal system without relying on general human norms and values. The criminal justice approach reflects the common values of the society, which are directed to the interests primarily protected. Criminal policy is concerned with the detection of criminogenic processes, crime, their determinants and the effectiveness of measures to prevent and combat crime.

*Keywords: Crime Criminal policy, societal development, public security*

## 197. Vulnerability Index Elaboration for Climate Change Adaptation in Peru

Marta Tostes Vieira, Alfredo Villavicencio Vieira, Claudia Motta Villa García

### ABSTRACT:

This paper evidences one of the most relevant information gaps of climate change adaptation in Peru: its vulnerabilities. First, it contextualizes main national level impacts and progress made in adaptation measures definition from prioritized thematic areas. Then, it addresses the difficulty of finding tools to measure climatic risk level. For instance, this arises the need to focus on the vulnerability associated with climate change adaptation efforts. Therefore, a vulnerability index based on a multi criteria analysis is proposed, with three parts. In the first one, three-work axes were chosen following the fifth IPCC report guidelines: climatic phenomena dangers, territorial exposure, and subjects' vulnerability. The territorial area analysis was carried on at district level. With regard to subjects, five indicator groups were identified, and measurable variables were chosen: population; species and ecosystems; functions, services, and environmental municipalities' assets; economic, social and cultural assets; and infrastructure. Next, data was searched for each variable and it was systematized in a multi-criteria database. Finally, an index (0-15) was developed to calculate socio-climatic vulnerability of all the Peruvian District Municipalities. They were classified according to social, climatic, and socio-climatic vulnerability range. This facilitates a targeting instrument for public policies that can generate better climate change risk management and contributes to commitments fulfillment of the Sustainable Development Goals.

*Keywords: Climate change, Vulnerability, Climate change adaptation, Socio-climatic vulnerabilities, Climate risk, Sustainable Development Goals*

**Dr. Marta Tostes Vieira**, Main professor at Pontificia Universidad Católica del Perú (PUCP) in the Management Science Academic Department, Marta Tostes is doctor from Sevilla University, master and a graduated Economist from Rio de Janeiro Federal University, and specialized in innovation, project management and sustainable development. She is author and coauthor of many academic articles and books, has taught in many universities in Peru, like La Molina Agrarian University, and in other countries, like Rio de Janeiro and Sevilla. Furthermore, she is CEO of EXCEDESA consultant group, where she has wide experience in strategic management coordination processes of different organizations, developments projects and public policies.

**Alfredo Villavicencio Vieira**, EXCEDESA's Senior Researcher, Alfredo Villavicencio is a graduated Economist from Pontificia Universidad Católica del Perú (PUCP), specialized in environmental economics, and a Columbia University's School of International Affairs 2019 Candidate for its Master of International Affairs, with concentration in Political and Economic Development. He has been part of the elaboration groups of several Peruvian environmental policies, such as the National Strategy on Green Growth, the Action Plan of the Agriculture and Irrigation Sector against Climate Change, and the Financial Plan of the National Service of Natural Protected Areas. Currently, he is EA Consultants Global' Associate, and is senior researcher at the consultant group Excelencia y Desarrollo SAC.

**Claudia Motta Villa García**, Main researcher at group Excelencia y Desarrollo SAC, Claudia Motta, is Social Manager from Management Faculty of Pontificia Universidad Católica del Perú (PUCP), specialized in stakeholders' management, development projects and sustainable development. She is coauthor of several academic articles, including the use of methodology based on networks approach to study cases about strengthening social capital for Community Forest Management. In EXCEDESA consultant group, she has experience in coordination of strategic management process in different organizations, including prospective, developments projects and public policies evaluation.

## 198. Conquest of Sustainable Development through Reformative Mechanisms of ADR

Rachel Jacob Tharakan, Kanika Lahoti

### ABSTRACT:

An ever booming world population in the recent years have made a significant impact on the environment and a proportional rise in environmental issues. Amicable dispute settlement in environmental conflicts seem a far-fetched dream with the vastly different judicial systems of countries worldwide and thus, there exists a need for reinventing dispute resolution mechanisms to achieve the Sustainable Development Agenda. Goal 16 of the Sustainable Development Agenda calls for peace, justice and strong institutions and in furtherance of the same, The United Nations Environment Programme have discussed Alternative Dispute Resolution in Environmental Disputes as a part of Access to Justice. Like any other system, ADR also has its barriers to practical implementation. Moreover on a philosophical level, it is significant to question the ethics of environmental ADR as a form of restorative justice. With the help of this paper, the authors aim to examine and reconcile the identified benefits and issues of environmental ADR while focusing on the aspect of sustainable development. The authors also aim at evaluating the effectiveness of ADR on a global level and bring out the practicality of the mechanism in the same domain before concluding the paper with derived and intended suggestions.

*Keywords: Alternate Dispute Resolution Mechanism, Environmental Conflict, Sustainable Development, United Nations Environment Programme*

**Rachel Jacob Tharakan** is a third year BBA LLB (Hons.) student at School of Law, Christ (Deemed to be University), India. She has a keen interest in humanitarian, environmental and international law. She was drawn to legal studies due to her passion for human rights and she wishes to pursue the same in future. Moreover, she is also intrigued by the concept of alternate dispute resolution mechanisms. In furtherance of this fascination, she has completed a training course in negotiation and plans to become a trained mediator and arbitrator in the coming days. Coming from a lineage of academic professionals, she also hopes to pursue a career in legal academia.

**Kanika Lahoti** is a third year BBA LLB (Hons.) student at School of Law, Christ (Deemed to be University), India. She has a keen interest in laws relating to Alternate Dispute Resolution and Commercial aspects of laws in several domains. Her work on Parallel Disputes in Construction Industry has been adjudged as the best paper in a National Conference on International Law organized by KIIT School Of Law, India. She has presented several papers in conferences in India that deal with Commercial and Environmental law. She hopes to join the judicial services of India in the future.

## 199. Equalizing Development Levels of Regions in the Socialist System on the Example of the Polish People's Republic

Edyta Czop

### **ABSTRACT:**

After the end of World War II, the Polish authorities had to face post-war reconstruction, integrate the country's economic development within new borders, but also solve problems inherited from the Second Polish Republic: leveling civilization differences between individual regions. These issues were reflected in the plans to modernize the country, promoted by the communists. These plans contained elements of the pre-war modernization concept, but these visions were fundamentally different. The need for industrialization of backward areas proclaimed by the communist authorities was associated with political and social goals. The elimination of regional differences through balanced economic development was combined with the expansion of the working class and the elimination or marginalization of layers considered "capitalist". Additional elements, in fact playing a very large role, were the adoption of the Soviet model of modernization, which was associated with greater or lesser subordination of Moscow's goals and fulfillment of economic tasks resulting from belonging to the CMEA. The problem of sustainable development of the country was particularly strongly emphasized to half of 1.50. While the country managed to integrate within the new borders, the investment policy did not reduce regional disparities. The location of new industrial plants led to disharmony in the development of Poland. The problem was also not solved in the following years. The reason was: failure of a centrally controlled economy, dominance of obsolete technologies, cyclical breakdowns in the economy, leading to socio-political crises.

*Keywords: Sustainable development, modernization, centrally controlled economy, investment policy, socialism*

## 200. Comparative Analysis of Sharing Bike Systems Based on Sustainable Indicators

Yurui Han, Serge Rohmer

**ABSTRACT:**

With the growing importance and widely application of the sharing bike system in public transportation systems in China, many relevant problems emerged, which brought serious influence to the sustainable development of the system. The aim of this paper is to deeply understand the evolution of bike sharing systems in cities from a sustainable point of view. The methodology consists first in understanding indicators that express the sustainability of mobility services in cities. Then, after the description of the different generations of sharing bike systems, indicators are selected and applied to evaluate the generations of sharing bike systems. The comparison allows us to analyze which characteristics of sharing bike system could adopt to sustainable urban development and which characteristic of the sharing bike system could improve or change in order to cater to the active demand of the city sustainable development.

*Keywords: Sustainability, urban mobility, indicators, sharing bike system*

**Yurui Han** is a PhD student, Université de technologie de Troyes, France.

**Serge Rohmer** is an Associate Professor at UTT. Research interest: sustainability, ecodesign frugal innovation.

## 201. Assessment of Investment Projects Based on Economic Flow and not in Cash Flows

Halil Kukaj, Fisnik Morina

### ABSTRACT:

In terms of global competitiveness, taking the investments decisions has a great impact to remain in the market. For this, when evaluating the investing projects it is necessary to apply the methods of profitability and liquidity. However, the question arises, if the profitability evaluation of investing project should be made according to the cash flow or the data from the economical flow statement. The aim of this paper is to give arguments why the economical flow statement should be applied instead of cash flow statement for the evaluation of profitability of investing projects. The paper is based on a hypothetical example whereas arguments are derived while applying the indicators: the Net present value and internal norm of profitability.

*Keywords: Evaluation of investing project, economical flow, net present value, internal norm of profitability*

**Dr. Halil Kukaj** is an associate professor at Univeristy "Ukshin Hoti" in Prizren and also a Dean of the Faculty of Economics at this university. Dr. Halil Kukaj is the author of several scientific papers and books in the field of corporate finance, investment and international business. Professor Halil Kukaj completed his doctoral studies in 2005 at the Faculty of Economics of the University of Prishtina. He has an international experience in the field of scientific research and has been a participant in many international scientific conferences.

**Fisnik Morina** is a teaching assistant professor at University "Haxhi Zeka" in Peja, Kosovo. The author is at the end of his doctoral studies in the field of finance at South East European University in Macedonia. This author has published a large number of scientific papers in international scientific journals with impact-factor. Over the last few years, he has been an active participant in many international scientific conferences and has completed several study mobility at the Universities of European countries.

## 202. Central Industrial District as an Attempt to Implement the Principles of Sustainable Development in the Inter-War Period Poland

Paweł Grata

### ABSTRACT:

The interwar Poland was a poorly developed and unevenly developed country. The difference between regions was well to see between well-industrialized and so-called western "Poland A" and backward, agricultural and poor "Poland B" in the east. In the second half of the thirties of the twentieth century, Deputy Prime Minister Eugeniusz Kwiatkowski proposed taking action to eliminate the development differences between individual parts of the country. The government decided to build the Central Industrial District (COP), which was located in backward areas located in the central part of the country. The aim of the project was to implement a number of industrial and infrastructure investments and to make the first step on the way to blur the differences between "Poland A" and "Poland B". Further, the creation of another industrial district east of the COP was assumed. In 1938, E. Kwiatkowski announced the so-called Fifteen-year plan, which was to bring the level of economic development to the level of the entire country until 1954. The large-scale implementation of investment under the COP was interrupted by the outbreak of World War II, but it turned out that the investments undertaken in the second half of the 1930s had a lasting effect. Established in this period, enterprises still play an important role in the economy of present-day south-eastern Poland (Podkarpacie region) and constitute an important element on the way to sustainable development of the country.

*Keywords: Second Polish Republic, Central Industrial District, state modernization, leveling of development, Eugeniusz Kwiatkowski*

**Paweł Grata** – PhD, Professor of University of Rzeszow. Dean of the Faculty of Sociology and History, President of the Polish Association of Economic History. Scientific interests: social and economic history, social policy, economic policy. Selected books include *Przemysł gorzelniczy w II Rzeczypospolitej* [Distillers industry in the Second Polish Republic, 2002], *Monopole skarbowe w polityce podatkowej Drugiej Rzeczypospolitej* [Fiscal monopolies in the tax policy of the Second Polish Republic, 2009], *Polityka społeczna Drugiej Rzeczypospolitej. Uwarunkowania – instytucje – działania* [Social policy of the Second Polish Republic. Determinants – institutions – activities, 2013], *Czas przełomu. Polska polityka społeczna w latach 1944-1950* (The breakthrough time. Polish social policy in the years 1944-1950, 2018).



## 203. Media Market as an example of a Deregulated Labor Market. Historical and Social Analysis of the New Media Segment

Jarosław Kinal, Edyta Czop

### ABSTRACT:

The development of new technologies creates more and more new professions that require previously unknown skills. SEO Specialist, Google AdWords and? Google Analytics or Buzz moderator - the names of these professions, or rather specialty, many Poles do not say anything, although they are increasingly sought after in the labor market. They are also a visible effect of the rapid development of new media - above all social media. The new media market is an example of a market that is completely deregulated insensitive to social roles and functions. Persons operating on the market do not need to certify their education in the majority. Personnel selection is of a competence nature. The purpose of this article is to show the changes that have occurred in the new media market and structural changes in terms of employment and income segments. The second objective of this text is to show that new media and electronic business are an element of the fight against social inequalities because electronic business does not require any infrastructured infinite spaces but only an idea and persistence in the implementation of the idea.

*Keywords: Sustainable development, modernization, investment policy, labour market, unemployment*

**Jarosław Kinal**, PhD, is an Assistant Professor at the Institute of History, Collegium Humanisticum University of Rzeszow, Poland. From 2016 to 2019 he was a deputy Dean at the Faculty of Sociology and History. He is media researcher, sociologist. Author of 2 monographs, editor of 21 research monographs, autor and co-author of more than 60 articles in journals and chapters in monographs. His research interests include issues related to the history of media systems, social and cultural aspects of the media, new media and the economics of new media.

**Edyta Czop**, Department of Economic and Social History, Institute of History, University of Rzeszów. Research interests: socio-economic and political transformations in People's Poland.

## 204. Impact of Gender, Age and Management Style on the Success of Family Business in Kosovo

Rifat Hoxha, Hamdi Hoti

### ABSTRACT:

Family business is the most contributing category in the economic development of all countries. Both Developed and Developing Countries and Less Developed Family Business plays an important role in reducing unemployment and is a catalyst for developing creative ideas and innovations in all business activities. In this paper we will address some of the characteristics of managers of this business category, such as their gender, age, and style of management, and their impact on the development and growth of these businesses' performance. The paper is part of the survey conducted by the survey of over 300 family businesses in Kosovo and was used by the author for the preparation of doctoral dissertation. This paper is fulfill from the survey which is realized with professors of Economic field in University of Prizren "Ukshin HOTI" in Prizren. From those finding results of research we give some modest recommendations and it's more raising awareness especially business management from female gender as an opportunity to duplicate the potential for a development and performance of those business. This is based on the fact that the more thought we have, the more ideas come about how we can manage a family business with contemporary style, without a gender or age complex, which can guarantee success not only in our country, but to become competitive and penetrate the markets of the most developed countries.

*Keywords: Family business, Gender, Age, Management style*

**Prof. Ass. Dr. Rifat Hoxha**, born December, 1985 in Prizren, I graduated in high school in the economy. I graduated Doctor of Economics at the European University of Tirana. I work as a Professor at the University of Prizren and Business College.

**Prof, Assoc. Dr. Hamdi Hoti**, born in Carralluka, has graduated from high school, where he has a master's degree and doctorate Faculty of Economics at the State University of Tirana, Tirane (Albania). Currently he is Professor of the Faculty of Economics at the University of Prizren, in Kosovo. Has the title of Prof. Assoc.

## 205. Youth Resilience in Albania

Geranda Mulla

**ABSTRACT:**

Youth is the most valued human capital of a country. In Albania youth takes a significant ratio but 28.6% of young people between 15-29 years old are not in employment, education or training (NEET). Being for a long time not in employment and with no hard or soft skills expose them to risk and poverty lacking the access of other healthy services. The aim is to describe how resilience can help NEET young people to achieve a sustainable development. The paper will include the most relevant theories of resilience and its implications. Fostering resilience can have broad impact on NEET youth wellbeing and society.

*Keywords: Resilience, NEET, Youth, sustainable development, wellbeing*

**Geranda Mulla** is a Ph.D. student in the Faculty of Social Science, University of Tirana, Albania. Her interested field of research has been always related to the sustainable development especially for young people. Combining with her expertise in human resources area she is always seeking for new approaches and methodology to lead the continues learning and development process mainly for the inclusion of vulnerable young people.

## 206. Factors Affecting Employees' Pro-Environmental Behaviour: the Role of Guanxi in Chinese Society

Hao-Fan Chung, Kai-Jun Sun, Qi-Ming Song, Wei-Wen Sang

### ABSTRACT:

In the light of the extreme importance of sustainable development and employees' pro-environmental behaviour (PEB), combined with the very limited theoretical research that has considered a Chinese context, this study aims to investigate how the practices of firms relate to employees' environmental behaviour in the workplace in a Chinese context. Drawing on cultural theory and the theory of guanxi (which is a Chinese term signifying human connection), this research aims to help green enterprises' managers increase their knowledge of the variables by integrating the findings from a field survey of 306 employees from the Jiangsu province of China to measure individuals' intrinsic motivations (i.e. environmental knowledge, environmental concerns and moral obligations), alongside their workplace networks and supervisor-subordinate guanxi that may play a role in influencing their ecological behaviour within Chinese society. The valid questionnaires were analysed using Structural Equation Modelling (SEM) to test the research hypotheses. The results of this paper have helpful insights into how managers should enhance their guanxi initiatives in order to improve environmental performance. The theoretical and practical implementations are then discussed.

*Keywords: Environmental knowledge, environmental concern, moral obligation, sustainable development, supervisor-subordinate guanxi, pro-environmental behaviour (PEB), Structural Equation Modelling (SEM).*

**Dr. Hao-Fan Chung** is an Associate Professor of School of Management Engineering, Nanjing University of Information Science and Technology, China. He received his PhD from Loughborough University (UK) and now conducts research in the area of knowledge management, positive psychology and organisational behavior, with a specific focus on cross-cultural comparison.

**Kai-Jun Sun** is the Director of International Affairs, Huaiyin Institute of Technology, China. He has extensive practitioner experience in the fields of information behaviour and educational development.

**Dr. Qi-Ming Song** is a Researcher of School of Higher Education Institute, Nanjing University of Information Science and Technology, China. His research interests focus on educational psychology and adolescent behaviour.

**Wei-Wen Sang** is a student of Department of Information Management, Huaiyin Institute of Technology, China. She now pays more attention to MIS and IT behaviour.

## 207. Structural Transformation of the Turkish Economy under the Scope of Sustainable Development

Hacer Simay Karaalp-Orhan

### ABSTRACT:

The distribution of the labour force by sectors and the country economic structure indicate the economic development level of countries. The traditional sectoral transformation is observed in all countries during the economic development process. Since the establishment of the Turkish republic, industrialization has been one of the fundamental development policies to be achieved. As an inevitable result of the development, the sectoral distribution of production and employment changed in Turkish economy over the years. This structural transformation is associated with the transition from primary sector to capital (and knowledge) intensive production structure in which the manufacturing and the service sectors expand while the agricultural sector shrinks. However, the agricultural sector is still important in Turkey. Today, approximately one-fifth of the labour force is employed in the agricultural sector. This shows the developing country feature of Turkish labour market. Despite the industrialization and urbanization policies and the structural changes in recent years. In this context, the aim of this study is to analyze the sectoral transformation of Turkish economy under the scope of the share of sectors in Turkish GDP and the share of sectors in the total employment, the changes of structure of the labour market and the urbanization level.

*Keywords: Economic Development, Structural Transformation, Turkish Economy*

**Dr. Hacer Simay Karaalp-Orhan** is Professor at the department of Labour Economics and Industrial Relations, Pamukkale University, Turkey. She received her Assoc. Prof. degree in 2008, PhD in Economics at Adnan Menderes University, and MA in Economics at Pamukkale University and a second MA in European Integration at Middle East Technical University. She has coauthored a book on Current Macro Economic Issues in Turkish Economy and published research papers extensively on economic development, international trade, labour markets and linear time series methods.

## 208. Climate Literacy and Individual Consumption Behavior: An evaluation of the Indian Experience

Kanwal D. P. Singh, Aakriti Mathur

### ABSTRACT:

Climate change education and awareness are essential for any effective action on climate change. While regulatory policies and taxes influence consumer behavior, these measures are significantly more successful when the stakeholders are made aware of the larger policy objective underlying such measures, especially the exact extent and nature of the impact of climate change, if greenhouse gas emissions continue unabated as also the significant impact small everyday individual choices can have on reducing the individual greenhouse gas emissions. This paper will examine the extent of awareness regarding the causes and consequences of climate change as also the government programs and policies for climate change mitigation and adaptation. It will also evaluate the impact of climate literacy on individual consumption habits and attitudes towards climate change mitigation and adaptation. The methodology adopted in this research paper will be empirical and analytical and the authors will collect primary data through the means of a questionnaire administered to a random sample of 300 respondents belonging to the age group of 18 - 60 years, selected from urban areas in India. The research paper shall show the relationship between lack of climate literacy and high greenhouse gas emissions through individual consumption habits and behavior and make recommendations for increasing climate literacy in India through effective outreach programs.

*Keywords: Climate Literacy, Climate Change Awareness, Climate Change Outreach, Individual Carbon Footprint*

**Prof. Kanwal D. P. Singh** is the Dean of the University School of Law and Legal Studies, Guru Gobind Singh Indraprastha University. She has a teaching experience of twenty years in taxation, corporate laws and land laws. She is the author of two leading textbooks on the subjects of Land Laws and Capital markets. She has authored over forty research papers in international and national journals. She is actively involved in organizing and conducting research projects, seminars and moot court competitions and is frequently invited to judge moot court competitions and as a resource person for seminars, conferences and talk shows. Her areas of interest include Law Poverty and Development, Environmental Law and Policy, Taxation Laws, and Corporate Laws.

**Aakriti Mathur** is a Ph.D. research scholar at the University School of Law and Legal Studies, Guru Gobind Singh Indraprastha University. Her area of research relates to Climate Change and she is testing the feasibility of a Carbon Consumption Tax for India. She is practicing as an Advocate in the Supreme Court of India and the Delhi High Court specializing in socio-economic offences and customs and trade laws. She is also actively involved in teaching International Trade Law as a visiting lecturer at various universities in New Delhi. Her areas of interest include Climate Change Law and Policy, International Environmental Law, International Trade Law and Laws relating to Socio-Economic Offences.

## 209. The Western Mediterranean and the New Generations: Culture for Sustainable Development and Intercultural Dialogue

Albino Cunha, Mafalda Leitão, Manuela Ferreira

### ABSTRACT:

The UNESCO Universal Declaration on Cultural Diversity states that "it is the common heritage of humanity and should be recognized and affirmed for the benefit of present and future generations" (article 1). It is in this context that we have been defining and developing our research work and more specifically on the raising of awareness of the new generations in the role of preserving cultural heritage and diversity and encourage intercultural dialogue. According to UNESCO, culture shapes our identity and the development cannot be sustainable without including culture (Sustainable Development Goals). We have done our research work in the Western Mediterranean area with a research on young people from Portugal, Spain, France, Morocco, Algeria, Tunisia about their concerns, values and interests. We verified that, despite the socioeconomic and socio-cultural differences that continue to exist between them, their values (freedom, respect, trust); concerns (education, unemployment, violence, poverty) and interests (culture, travel, internet and sport) converge. In relation to Sustainable Development in this area, we believe that the valuation and knowledge of a common cultural heritage and the promotion of a sustainable intercultural dialogue, it is necessary, through the new generations, to change and evolve the perceptions and attitudes towards the Other.

*Keywords: Sustainable Development; Cultural Diversity; Intercultural Dialogue; Western Mediterranean; Cultural heritage; New Generations*

**Albino Cunha** is Assistant Professor at Instituto Superior de Ciências Sociais e Políticas – University of Lisbon and researcher in the Centre of Studies on Migrations and Intercultural Relations of Universidade Aberta – UAb (Portuguese Open University), in the Research Group: Intercultural Communication. PhD in Educational Sciences, Speciality: Intercultural Education, he has developed his career in the Mediterranean and North African studies, more specifically, the importance of youth and intercultural school for rethinking cultural relationships between Europe and the Maghreb, highlighting the legacy of the Mediterranean as the thread to rethink those relationships.

**Dr. Mafalda Leitão** is researcher in the Centre of Studies on Migrations and Intercultural Relations of Universidade Aberta – UAb (Portuguese Open University), in the Research Group: Intercultural Communication. She was teacher of physics and chemistry on secondary school, in Portugal. PhD in Educational Sciences, Speciality: Teaching learning methodology, she investigates on water (education, fresh water resources and access, sustainability) and education for sustainable development, with especially focus on Africa Portuguese speak countries, where develops studies in self training teachers (skills in education for sustainable development and water literacy). Other interests are: education for global citizenship; communities of practice; and environmental migrants.

**Prof. Manuela Ferreira** is researcher in the Centre of Studies on Migrations and Intercultural Relations of Universidade Aberta – UAb (Portuguese Open University), where she is the head of Research

Group: Intercultural Communication. PhD in Educational Sciences, Speciality Geography in Education. She has developed her career in Methodology of Research in Social Sciences, Geography in Education, Intercultural Education and Education for Sustainability.



## 210. Decision Making and Behaviour Patterns in Network Relations

Anna Garai

### ABSTRACT:

The present study is focusing on the characteristics of relations and self-images in the world of internet. Humans as social beings develop new characteristic features due to living in the network system. At present there is a tendency that keeping contact with others and monitoring them is not just an opportunity but rather a force by the individuals and the environment. Young people living in virtual networks feel the necessity of contacting to prevent themselves from being deprived of information vital to being visible in the society. Their purpose is to be familiar with the context of the network that they are part of, by adapting existing patterns. The following questions are raised in the study: What exactly are individuals involved in networks interested in when checking others' profiles? What influences their behaviours and how do they make decisions? What behaviour patterns do they imitate? How can the network system motivate, honour or sanction the involved individuals? The method of research involves interviews with university students attempting to reveal what images young people living in the world of internet have about themselves and their special world. The research results can contribute both to making everyday communication and education in academic institutions more efficient.

*Keywords: network, hubs, self-esteem, interviews, values*

**Anna Garai**, Associate Professor at Széchenyi István University, Faculty of Economics, at the Department of International Communication. Graduated from Szeged University as a teacher of history and German studies in 1982. She got PhD title at Pécs University in 2006. Her research include linguistic and sociolinguistic aspects of corporate communication and economic press language. At the university she teaches subjects like Intercultural communication, Management communication and International negotiations. She consults the university students on their thesis work and scientific essays. She keeps contact with other universities in Hungary and other countries to have a deep scientific cooperation. She regularly attends scientific conferences as a presenter and publish her findings in journals and conference proceedings.

## 211. Professionalism and Non-Professionalism: A Critical Approach in Virtual Networks

Julianna Náдай

### ABSTRACT:

Professionalism and non-professionalism seem to merge in any fields of reality, and those of virtual existence. Due to the prevailing growth of the opportunities to share information and personal opinions in multiple online forums, individuals develop the illusion of unlimited autonomy. Authentic forms of information resources are more and more ignored and kept in the background. The instinctive trust in sciences and scientific institutions have dramatically fallen as a result of new opportunities provided by the internet. Various networks attract individuals to join, depriving them of the ability to define their identification of being authors or readers as the roles converge. The aim of the present study is to reveal how individuals manage to filter proper information in the network of global critiques. The method of research is based on semi-structured interviews conducted with university students from European countries, on how much they find it important to express opinions about different contents and who they trust in case of critical incidents. The focus is also on how much the results vary concerning the cultural background of the students involved in the research. The aim is to enable students to make decisions about authenticity of information in a more conscious way.

*Keywords: networks, authenticity of information, criticism, cultures, autonomy*

**Julianna Náдай**, Associate Professor at Széchenyi István University, Faculty of Economics, Department of International Communication, in Győr, Hungary. She got PhD title at Pécs University in 2008. Her main research field includes international communication and negotiations, corporate culture and economic press. At the university she teaches subjects related to her research fields and consults students on their thesis work and other scientific works. The department is involved in international projects researching into the relations of small and medium size enterprises between Hungary and neighboring countries. She regularly takes part in conferences as a presenter and publishes her research results in international and domestic journals and conference proceedings. She keeps contact with other universities in Hungary and other countries to have a deep scientific cooperation.

## 212. Teenagers' View on Improving Language Proficiency Gained through New Media

Boglárka Boldizsár

### ABSTRACT:

There is a wide range of evidence to support the view that new technologies serve an integral part of teenagers' life. However, in Hungary it seems that even though the facilities are provided in most of the educational institutions, these are not in regular use due to teachers' lack of competence or willingness of using them or their constant operational problems. Using a qualitative small-scale study conducted in the form of semi-structured focus group interviews (N=8) with 15 participants in five Hungarian primary schools, the study aims to uncover how teenagers can relate their foreign language advancement to their use of digital devices in their free time. Furthermore, the paper examines their views on FL instruction supported by ICTs at school as well as which digital devices and for what purposes they would preferably use them in FL classes. According to the results, teenagers' attitude towards institutional foreign language learning seems to be quite traditional, as they cannot relate their free time activities spent with digital devices to study purposes at school. Although participants are conscious about the effectiveness of ICTs promoting language learning, they think that watching films, instructional videos, or working with projected tasks connected to coursebooks are the major reasons for using digital devices for classroom purposes.

*Keywords: ICT, digital devices, digital competences, foreign language learning, teenagers' needs*

**Dr. Boglárka Boldizsár** is a Senior Lecturer at Széchenyi István University Apáczai Csere János Faculty, Győr, Hungary. Her main research area is the use of ICTs in foreign language teaching with the focus on primary and secondary education. She examines foreign language teachers' and students' digital competencies, attitudes and needs in formal and informal settings. Lately she has been examining the impact of students' use of digital devices on their foreign language advancement. She is also a member of a research group investigating student teachers' beliefs and attitudes towards Multilingualism. Her other research fields are Speech Perception and Comprehension of young learners of English and Teaching English for Children with Specific Learning Difficulties (esp. Dyslexia).

## 213. The Importance and Influence of Destination Advertising

Andrea Csapó-Horváth

### ABSTRACT:

The tourism industry has become a kingpin industry worldwide. The high proportion of individual travel demonstrates the need for effective advertising. In particular, there is a need to focus not so much on what motivates people to travel, but rather to influencing their choice of destination. Tourism advertising, especially destination advertising, an under-investigated field of research, seems to play a significant role in influencing consumers such as future tourists. This paper explores the question of whether Hungarian university students are influenced by destination advertising when choosing their destinations. Using a questionnaire (N=125), this study examines the question of which advertising elements have the greatest impact on the students. Furthermore, the paper aims to find answers to these questions: How important are media channels within the context of destination choice? Is it the language or the image which plays a crucial role in the transmission of the advertisement's message? What might be the most important elements in the actual language used in destination advertising? The research will shed light on which particular linguistic devices increase the impact of the advertisements and which of these devices can be adapted to the Hungarian context.

*Keywords: destination advertising, questionnaire survey, linguistic devices, effective advertising*

**Dr. Andrea Csapó-Horváth** is an associate professor at Széchenyi István University, Győr, Hungary. Her main research topic is the printed advertisements of tourism, in particular destination advertisements, more specifically the study of advert headlines. She examines destination advertising from a linguistic point of view: of pragmatic, lexico-semantic, morpho-syntactic and stylistic descriptive fields of the language. Furthermore, she focuses on how to use tourism advertisements in teaching German as a foreign language. Her second research field is teaching German as a foreign language and her areas of expertise are the development of grammatical competence and teaching literature.

## 214. Eco-psychological/Phenomenological Approach to Sustainability

Larry W. Riggs, Sandra Hellyer-Riggs

### ABSTRACT:

Our purpose is to show the value of eco-psychology and phenomenology for a cognitive paradigm fostering sustainable development. Our hypothesis is that those fields help lay the groundwork for truly sustainable development. Our method is a review of scholarly and theoretical work on the origins of the modern paradigm that has governed conceptions of development, and on eco-psychology, phenomenology, cognitive science, and sustainable development. Our contribution is a well-informed understanding of psychological and socio-cultural issues relevant to sustainability. The prevailing conception of development derives from the origins of modern science in seventeenth-century Europe. Francis Bacon and René Descartes elaborated a vision of development, or material progress, based on exploitation of a nature without inherent value, as a source of raw materials for human purposes. Eco-psychology aims to repair the rift between humanity and nature. Our dominant idea of development implies the alienation from nature that makes it difficult to prioritize authentic sustainability. Maurice Merleau-Ponty makes the crucial point that "we can never grasp the world in its totality but we grasp it according to the mode in which we inhabit it." What will we sustain? How will we negotiate the socio-cultural and psychological obstacles and achieve reconciliation? What are some examples of meaningful, practical movement toward sustainability?

*Keywords: Eco-psychology, Phenomenological, sustainability, mindset paradigm, Mindfulness*

**Dr. Larry W. Riggs** is Professor of French at Butler University in Indianapolis, Indiana. He received his Ph.D. in French literature from the University of California at Santa Barbara. Among Dr. Riggs's scholarly and teaching interests are early modern literature and culture, eco-criticism and eco-psychology, sustainability, imperialism/colonialism and neo-colonialism, critical thinking and transformative learning, globalization, and green cultural studies. He has published books and articles and presented papers on literature, drama, film, the culture of modernity, global and historical studies, and a variety of pedagogical issues including transformative and contemplative learning, teaching for diversity, and online teaching. His current projects focus on the uses of phenomenology and cognitive science for appreciating modern literature and culture.

**Dr. Sandra Hellyer-Riggs** teaches at IUPUI, which is a large, diverse, urban university. Sandra earned her Ph.D. at Indiana University. She is a Licensed Clinical Social Worker and has been a mental health therapist for at risk teenagers at a local hospital and at a clinic for disadvantaged children. She teaches various Psychology courses including Child Development, Social Psychology, Intro Psychology, and Human Development. Her research interests are Sustainability, Critical thinking, Transformative Learning, Pedagogy, Online pedagogy, Qualitative Approaches to Psychology, and Diversity.

## 215. Sustainability, CSR and Performance in Pharmaceutical Sector- a Question Unresolved?

Kanika Saxena, Sunita Balani, Pallavi Srivastava, Aaruni Saxena

### ABSTRACT:

This study is an attempt to explore the relationship among CSR, Sustainability practices and the organizational performance in pharmaceutical sector on the basis of available scientific evidence. 235 research papers were collected from various journals available at different online databases systematically. Three important key themes were identified: environment, community and growth represented by sustainability, CSR and organizational performance. Key findings included under aforementioned themes are: (a) Environment - Green chemistry has revolutionized pharmaceutical sector by decreasing manufacturing cost, minimizing environmental footprint and improving compliance to regulation. Strict regulation has been the reason behind use of sustainable practices; (b) Community - Community goodwill and company image have gained importance under the influence of external and internal stakeholders. Employee commitment is a significant factor behind organizational performance; (c) Growth- A weak relationship exists between CSR and organizational performance, however, more engagement in sustainability practices led to increased market performance. Effective integration of social and environmental goals with business strategic planning process helps in sustainability of profits in long term. There is limited literature on use of sustainability practices in comparison to CSR in pharmaceutical sector. This study could serve as a raw material for future research and further in depth sector specific studies.

*Keywords: Corporate Social Responsibility (CSR), Sustainability, Organizational Performance, Pharmaceutical*

**Kanika Saxena** is currently a research scholar working on the subject of CSR, Sustainability and Organizational Performance in Pharmaceutical Sector at Amity Business School, Amity University, Lucknow, Uttar Pradesh, India. Prior to her research career she has over 9 years of rich experience in Human Resource Management and has worked as Human Resource professional in KPMG, India and industries like life insurance and healthcare.

**Dr Sunita Balani** is an assistant professor at Amity Business School, Amity University, Lucknow, Uttar Pradesh, India. Her academic area includes Positive Psychology, Interdisciplinary Psychology, Counseling Psychology and Human Resource and research interest is in Mental Health Positive Psychology Gender Studies Adolescents. She has research publications in national and international journals. She is affiliated to American Psychological Association, Association of the Socio-Economic Development and Mental Health Care Forum.

**Dr Pallavi Srivastava** is an assistant professor and current Chair of HR&OB area at Jaipuria Institute of Management Lucknow, Uttar Pradesh, India. With an overall work experience of 15 years in management teaching, research and industry, she bears a consistently good academic and service record with multidisciplinary exposure. Currently she offers electives on Talent Acquisition, Training & Development and HR Analytics. She is a Fellow in Management (Doctorate) with specialization in HRM from MDI(Gurgaon), India and a certified trainer on DiSC profiling by Wiley. She has several research publications in various national and international peer-reviewed journals and conferences of repute including the prestigious Academy of Management Conference held in Boston, Massachusetts in 2012. She has more than 200 citations of her research papers in Google scholar with h-index of 5 & i10-index of 5.

**Dr Aaruni Saxena** is a clinician with interest in management and development of health plans and policy related to global health security. He has been working with international organization as consultant for screening of pharmacological therapeutics. He holds his doctorate in clinical pharmacology and was awarded United Nation fellowship for Master of Business Administration in Geneva. He has several national and international publications. He has more than 100 citations of his research papers with h-index of 4.

## 216. Water-Education as a Promoter of Education for Sustainable Development: Three Studies in Portuguese-Speaking African Countries

Mafalda Leitão, Albino Cunha, Manuela Ferreira

### ABSTRACT:

The present study is based on research in teacher self-training in Education for Sustainable Development (Leitão, 2013). Water was the motivating theme. The priority of a fair distribution of water, guaranteeing the consumption, in quality and quantity, to all mankind and living beings is urgent. To respond to water-related sustainability challenges, people worldwide need to acquire "water literacy" about various aspects of water use and management in order to ensure safer water consumption and to contribute to Disaster Risk Reduction (DRR). Three case studies were carried out in schools in three African countries: Angola Guinea- Bissau and Mozambique. A model of skills in education for sustainable development was applied (Sleurs, 2008). From the analysis of these case studies the theoretical assumptions of research were strengthened by the effective professional practice. But, on contrary, the results that the pillars of sustainable development presented in the basic research should be reviewed, placing the political dimension as transversal, thus strengthening education for sustainable development as fundamental for critical and responsible citizens of the present and of the future. This experience paves the way for future water-education and education for sustainable development projects; such as the follow-up of these three schools.

*Keywords: Sustainable Development; Education for Sustainable Development; Water-education and Water Literacy; Case Study*

- Dr. Mafalda Leitão** is researcher in the Centre of Studies on Migrations and Intercultural Relations of Universidade Aberta - UAb (Portuguese Open University), in the Research Group: Intercultural Communication. She was teacher of physics and chemistry on secondary school, in Portugal. PhD in Educational Sciences, Speciality: Teaching learning methodology, she investigates on water (education, fresh water resources and access, sustainability) and education for sustainable development, with especially focus on Africa Portuguese speak countries, where develops studies in self training teachers (skills in education for sustainable development and water literacy). Other interests are: education for global citizenship; communities of practice; and environmental migrants.
- Dr. Albino Cunha** is Professor at Instituto Superior de Ciências Sociais e Políticas - University of Lisbon and researcher in the Centre of Studies on Migrations and Intercultural Relations of Universidade Aberta - UAb (Portuguese Open University), in the Research Group: Intercultural Communication. PhD in Educational Sciences, Speciality: Intercultural Education, he has developed his career in the Mediterranean and North African studies, more specifically, the importance of youth and intercultural school for rethinking cultural relationships between Europe and the Maghreb, highlighting the legacy of the Mediterranean as the thread to rethink those relationships.
- Manuela Ferreira** is researcher in the Centre of Studies on Migrations and Intercultural Relations of Universidade Aberta - UAb (Portuguese Open University), in the Research Group: Intercultural Communication. PhD in Educational Sciences, Speciality Geography in Education. She has developed her career in Methodology of Research in Social Sciences, Geography in Education, Intercultural Education and Education for Sustainability.



## **217. Resuscitation of Wine Cradle : Implications of booming wine industry on smallholder viticulture and their survival strategies: Case of Georgian wine sector expansion**

Nino Berishvili

### **ABSTRACT:**

Going through the structural transformation processes since the 1990s, Georgia has opened its economy for export. This has been achieved by free trade agreements and governments' attempts at promoting and assisting stakeholders. Being a "cradle of wine", wine represents one of the most exported commodities of the country. This has been a result of partially, governments' policy implementations, and partially by strong winemaking tradition of Georgia. The proposed paper examines the effects of wine sector expansion on the livelihoods of smallholder viticulture in Kakheti, and strategies employed for the purpose of co-existence. The study uses qualitative data methods, and the empirical data is presented from semi- structured interviews within the case study context. The results indicated that favorable implementations do create opportunities for smallholder viticulture but at the same time threat arise due to increased competition. Some of the key challenges and gaps pertaining are: lack of physical and human assets, due to lack of skillset and the barriers to access the infrastructure; unfair competition where strategies employed are responses towards it. Availability of resources, capabilities and scope of operations effect the strategies. Despite, the differences, intensification and commercialization, diversification and long-term thinking are employed by different sector-players to co-exist in the competitive climate.

*Keywords: agricultural development, trade, structural transformation, smallholder viticulture, livelihood, strategies, wine sector*

**Nino Berishvili** is a Master of Science graduate in International Development and Management from Lund University. She also holds bachelor degree in Business Administration from Hult International Business School. Her career as a development practitioner includes working for grass-root and international civil society organizations, working with the socio-economic and environmental issues.

Ninos' key research interests include: economic growth, structural transformation, international trade and macroeconomics, agricultural development, food security.

Currently, as a researcher, Nino is focusing around the country-level progress made towards achieving the SDGs and how inclusive has it been.

## 218. The Impact of Poverty Alleviation and Education on Sustainable Development in South Africa and Uganda

Nicholas Ngonde

### ABSTRACT:

The success of a nation is often determined by economic growth which, however, cannot reduce poverty, create jobs and enhance the general standards of living on its own. Therefore, policy makers should focus on attaining sustainable development which, however, is greatly threatened by the high poverty rates in most regions of the world. This study therefore examines the impact of poverty alleviation on promoting sustainable development and achieving the Sustainable Development Goals (SDGs) in South Africa and Uganda.

This paper provides a literature review on both concepts as well as the progress achieved in the two countries. An Autoregressive Distributed Lags model (ARDL) is then used to achieve the aim of this study by analyzing the Human Sustainable Development Index, gross national income per capita (GNI), as well as, life expectancy, expected years of schooling and carbon dioxide emissions (metric tons per capita). The empirical findings in this study reveal that all the variables share a long run relationship in both countries and that a reduction in poverty has a significant positive impact on sustainable development. Additionally, the findings of this study indicate that achieving sustainable development does not solely rely on reducing poverty, but requires policy makers to design strategies that are inclusive and encompass the different aspects of sustainable development.

*Keywords: Poverty Alleviation, Sustainable Development, Human Sustainable Development Index, Autoregressive Distributed Lags model*

**Mr. Nicholas Ngonde** is a Ph.D. candidate and assistant lecturer at the school of Economics and Development, Nelson Mandela University, South Africa. He possesses a BCom Hons and MCom degree in Economics. His research and interests include promoting and understanding the linkages between sustainable development, poverty alleviation, financial inclusion and the environment. His Ph.D. thesis is titled "A comparative Study of Financial Inclusion and Sustainable Development in South Africa and Uganda."

## 219. Multi-Objective Ranking of Risk Assessment Techniques in Sustainable Risk Management In SMEs

Dr. Iwona Gorzeń-Mitka

### ABSTRACT:

Sustainable risk management is a process that provides a new set of tools to generate effective sustainability strategies and tactics in the organization. This is a complex challenge, especially for SMEs enterprises. Risk assessment is a key issue for the success of this process. The lack of accurate risk assessment method and technique or the improper risk management might cause problems to achieve company' strategic objectives.

There are a number of useful risks assessment technique. In this study, risks assessment technique will be ranked considering different factors influencing its selection. In this respect, assessing risks by relating to strategic objectives is a multi-attribute decision-making problem. In this study, the Multi-Objective Optimization by Ratio analysis and Full Multiplicative Form Method (MULTIMOORA) approach is proposed for the risk assessment technique selection. The final ranking is a useful tool that can be adopted to optimize the decision-making process in SMEs from a sustainable risk management perspective.

*Keywords: sustainable risk management, risk assessment technique, multi-criteria decision making (MCDM) method, MULTIMOORA method, SMEs*

**Dr. Iwona Gorzeń-Mitka** is Assistant Professor of Czestochowa University of Technology, Faculty of Management, Poland. Her research focuses on risk in decision-making process, enterprise risk management, business process planning, risk assessment methodology, risk in organizational culture. Her research has been published in the leading journals in management. She is author (co-author) of 3 books, 110 scientific papers. She has been a member of scientific committees of international journals and scientific international conferences (e.g. AOM, ISI). Among others member of Polish Economic Society, Polish Institute of Internal Control, The Global Association of Risk Professionals, Professional Risk Managers` International Association (PRMIA).

## 220. Municipal Waste Problems in Sustainable Urban Management

Dr. hab. Agata Mesjasz-Lech

### ABSTRACT:

Consumption and production processes are the source of waste in cities. Waste is the result of ineffectiveness in public behaviour and the evidence of waste of resources. Considering the nature of the functioning of a city, municipal waste is one of key problems. The increase in the amount of waste has put additional pressure on the authorities to manage waste in a more sustainable manner, not only through reducing waste, but also through seeking methods of dealing with it in a way that is friendly to both the environment and society. City management breeds solutions helping organize municipal waste management in order to encourage city dwellers to reduce the amount of generated waste and selectively collect waste which could not be prevented. However, financing of solutions in the field of sustainable waste management in the city becomes a big problem. For this reason, the aim of the article is to identify problems connected with waste flow in the city and to assess the relationship between waste management expenditure and the amount of municipal waste generated. The analysis focuses on the relationships between outlays on fixed assets for environmental protection on waste management and municipal waste collected (excluding collected separately) on urban areas by Polish voivodeships. Additionally, it was checked if the amount of municipal waste generated in selected European cities in 2010 differs significantly from the amount generated in 2016 and 2017. Data from the years 2010-2017 were analyzed. In the article the panel models and statistics tests were used.

*Keywords: municipal waste, sustainability, sustainable urban management, waste management*

**Dr. hab. Agata Mesjasz-Lech** is Associate Professor and Vice-Dean of Faculty of Management, Czestochowa University of Technology, Poland. She is member of the European Association of Environmental and Natural Resources Economists and member of the Polish Economic Society (Branch in Czestochowa). Her scientific interests concentrate on the issues of logistics and management, and in particular on:

logistics inventory management, application of quantitative methods in logistics,  
cost accounting formula for logistics processes effectiveness,  
use of the IT supporting supply chain processes,  
environmentally-oriented concept of logistics,  
sustainable development,  
electricity generation process and its impact on the natural environment.

## 221. Evaluation of Soja Productivity (Imperial Variete And Canada) in Association With Maize (Bamboo Variete) in the Ecological Conditions of Sustainable Use of Sake / Nord Kivu

Bwama Meyi Marcel, Mashala Bitwakamba Grégoire, Romeo Ciminello  
Viviane Musungay

### ABSTRACT:

With a view to using land capital in an efficient and effective manner with a view to encouraging sustainable development in this ecological area of North Kivu; and to help minimize land-use conflicts, we have thought of establishing a combination of crops (soybean and maize) as a technique that can help maximize yields / ha and household income, while maintaining the fertility gradient of the soil. The effectiveness of Soybean-maize associations offers interesting prospects for improving the sustainability of production systems. The trial was arranged in randomized blocks with 5 treatments and 3 replicates. For this study we used 2 soybean varieties that are: imperial and canada, with a variety of corn (bamboo). The arrangement of the association was of the type MBILI-MOJA which means two Soya lines intercepted by a corn line. The parameters studied were the phenological and productive parameters which are: survey rate, neck diameter, height at flowering, number of leaves per foot, average number of pods per plant for soybean, average number of seeds of soybean pod, percentage of pod burst, soybean biomass removal, number of ears per plant, weight of 100 soybean and corn seeds, plot production (in kg), yield per tonne per hectare and the LER.

The GENSTAT descovery software allowed us to analyze the variance of our data and the averages were separated using the PPDS at the 5% threshold. The performance of the associations was as follows:

Imperial: 1,6 L.E.R =, L.E.R> 1 (there is a productive advantage in this association with corn bamboo); Canada: 2,33 LER =, LER> 1 (there is a productive advantage in this association with bamboo maize.) In both cases, there is maintenance of biodiversity and soil fertility. With maize as the imperial variety, that of 2.33 by the performance of LER. Fertility of the soil has been maintained from this technique which promotes soil and atmospheric nitrogen which crops need for their growth and productivity.

*Keywords: Soybean, maize, Association, LER, SAKE / North Kivu*

**Bwama Meyi Marcel**, University of Kisangani (UNIKIS) and National Pedagogical University (UPN / KIN); Specialization in Development Economics and Environment; Province: Kasai Central / DRC. PhD in Agricultural Economics and Environment at the IFA / Y'BI (2008)

**Mashala Bitwakamba Grégoire**, University Notre-Dame of Kasayi (U.K.A.) and Catholic University of Congo (UCC / KIN); Specialization in Development Economics and Environment; Province: Kasai Central / DRC. PhD in Economics (2008)

**Prof. ROMEO Ciminello** (1952) Is Rector of Hermes Popular Private University ets in Rome ([www.unihermes.org](http://www.unihermes.org)). Teaches Ethics and Development in the Faculty of Economics and Development of the Catholic University of Congo DRC - Kinshasa ([www.ucc.cd](http://www.ucc.cd)).

**Viviane Musungay**, Goma University/RDC Phd Student.

## 222. Performance and Best Practice for Green Campus Buildings in Australia

Dr. Za Manaf

**ABSTRACT:**

There has been an increased interest in researching the importance of sustainability in higher education in Australia (A.D. Cortese, 2003). A number of universities in Australia provided Green Star rated sustainable spaces for teaching and learning within their campuses. Campus buildings that have been star rated according to Green Building Council Australia star rating is also on the increase. Worldwide, universities are ranked and rated according to the THE/QS criteria and students have used these rankings and ratings to finalize their choice of place to study. This phenomenon has led to the possibility of linkages between green star rated campus buildings and the ranking and rating awarded to them.

This proposed study is based on current green star rated campus buildings in Australia and the implications of their performances as a university on their world ranking/star ratings. This study will be carried out from two perspectives: firstly, on the strategic decision making level and secondly to identify a list of best practice.

*Keywords: Sustainability, Green Star rated, campus buildings*

**Dr. Za Manaf** is a senior lecturer in Property Development in the School of Business, Western Sydney University. Prior to this appointment, she has worked in the property industry in numerous aspects of property and asset valuations. Her research interest includes sustainable property development, sustainable education space, green building and WELLness in work/education space. She has published her work in international refereed journal and has presented in Australian and international conferences.

## 223. Support for climate change: social and economic determinants in Africa

Dr. Emmanuel Kwasi Adugu

### **ABSTRACT:**

This paper is titled: "Support for climate change: social and economic determinants in Africa". The paper seeks to investigate the role social and economic factors play in influencing support for climate change in Africa. The multivariate analysis used is based on nationally-representative datasets from Pew Research Center, in the United States of America. The data was collected from March 25 to May 27, 2015, using face-to-face and telephone interviews in the following African countries: Burkina Faso, Ethiopia, Ghana, Kenya, Nigeria, Senegal, South Africa, Tanzania and Uganda, with a total sample size of about 9,047. The paper offers much-needed insight into how citizens' awareness of climate change consequences are related to the social and economic contexts. These have implications for climate change policies.

*Keywords: Climate change, social, economic, sustainability, attitude, participation, Africa*

**Dr. Emmanuel Kwasi Adugu, Ph.D.** is a research methodologist and lecturer at the Department of Government, Sociology, Social Work and Psychology at the University of West Indies, Cave Hill Campus, Bridgetown, Barbados. His research and publication profile focuses on civic engagement & social change, sustainable development, political consumption, digital activism, future of work, and action research designs.

## 224. University campuses as models for engaging students/learners in social impact of Sustainable Biotechnology

Dr. Nagamani Bora, Kwon J Lee, Nemria Zilinskaite, Anastasiya Buryak

### ABSTRACT:

University campuses can serve as hubs or models for engaging students in their sustainability agenda. University of Nottingham has a smart campus initiative where dealing with plastic waste is one of the targets. An estimated 800,000 plastic bottles were sold last year between the University and Student Union. Over 98% of bottled water purchased by the University is plastic. Plastic waste is considered to be one of the key enablers of a circular economy, improving resource efficiency and sustainability along the value chain. Plastics have a positive impact on a range of aspects in LCA such as materials efficiency, energy efficiency, recyclability, biodegradability. A student led short project was initiated engaging students on Biotechnology course to develop bio-solutions for waste management on our campuses. The overarching aim is to drive resource efficiency in the first instance including engaging the end users and raising awareness on the use plastic on campus. This short term project generated experimental evidence on biodegradability of single use plastic. As future innovators, students from Biotechnology degree devised ways to raise awareness campaigns on single use plastic with an aim to reduce it usage and recycle. A group of selected students devised various ways of reaching the audience through their campaigns, blogs and in engaging the end user on the sustainability agenda on campus.

*Keywords: Social Impact, Sustainable Biotechnology Solutions, Engaged Users, Student Led*

**Dr Nagamani Bora** is the Director for Biotechnology Degree programs at School of Biosciences, University of Nottingham, UK. She has varied experience of working in both industry and academia. Research expertise and interests are in sustainability and waste management, search and discovery strategies for novel bioactive compounds, bacteriocins and novel enzymes. She is Senior fellow of Advance HE, UK and Fellow of Royal Society of Biology, teaches on sustainability and environmental issues modules and has extensive experience in curriculum design and development, embedding employability and personal development skills. She had specific expertise in transformative pedagogy and innovative learning strategies engaging students in subject specific activities.

**Kwon J Lee** is a final year student in Biotechnology who participated and contributed to the project.

**Nemria Zilinskaite** is a second year Biotechnology student who participated and contributed to the project.

**Anastasiya Buryak** is a second year Biotechnology student who participated and contributed to the project.



## 225. Relationships with Employees as one of the Areas of CSR Activity - Polish Perspective

Monika Sipa Phd

### **ABSTRACT:**

The study attempts to approximate selected issues related to the widely discussed and, increasingly popular, concept of corporate social responsibility (CSR). Activity of economic entities in this area refers to different groups of stakeholders, however their employees constitute the key group. Human resources available to the organization, their potential, commitment, openness to changes or willingness to develop are the foundation for the development and competitiveness of enterprises. In building relationships with employees, increasing their motivation and commitment, it is important to have suitable working conditions that give them satisfaction. It can also be noticed that activities within the framework of social responsibility are conditioned by the size of the organization. By assuming such a perspective, the main objective of the study was to indicate the level of employee satisfaction from working conditions, taking into account the scale of the entity in which they are employed. The analysis and inference was based on author's own research, which was carried out in 2017 among employees of Polish enterprises.

*Keywords: relationships with employees, satisfaction, human capital, CSR, SME*

**Monika Sipa Phd**, is an assistant professor of management at Czestochowa University of Technology, Faculty of Management in Czestochowa, Poland. Her work focuses on problems of functioning and development of small and average enterprises on the market. The closest and the most interesting for her are the questions connected with innovativeness and competitiveness of small enterprises.

## 226. Assessing Sustainability Learning and Leadership through the University of Calgary Certificate in Sustainability Studies

Dr. Dianne Draper, Dr. Sarah Skett, Becki Tyssen, Ashley Morrison

### ABSTRACT:

University of Calgary's new Certificate in Sustainability Studies launched in September 2017. This unique interdisciplinary two-year program provides students with opportunities to conduct applied sustainability research through campus and community partnerships. Through a Scholarship of Teaching and Learning (SoTL) grant we focused on student experiential learning in the core courses. Two key experiential learning components of the program, namely applied sustainability research projects and reflective journals, were assessed through Interviews in the initial two years of the program. Research findings demonstrate the successes and challenges in establishing sustainability foundations and applications so that undergraduates may collaborate with peers from a variety of disciplines to conduct real-world research projects with partners from private, public and NGO sectors. The goals of this project included a deeper inquiry into student learning in sustainability and the development of assessment tools. Presented in the form of a guidebook, the assessment tools are available for future instructors of the core courses and are shared globally with those seeking to assess sustainability learning in academia and beyond. The greater goal is to ensure students are offered the greatest learning opportunities to become sustainability leaders in their careers and communities to create a unified foundation for sustainable development.

*Keywords: Applied Sustainability Research; Experiential Learning; Learning Assessment; Sustainability Leadership*

**Dr. Dianne Draper**, University of Calgary, Alberta, Canada Dianne Draper is a Full Professor in the Department of Geography at the University of Calgary, Alberta. She is recognized for her research in sustainable tourism, ecotourism and tourism growth management, as well as planning and policy in water resources management. Current research foci include governance and quality of life issues in tourism and other communities as they work toward sustainability; managing growth and its impacts on communities, including wildlife, water resources, and parks and protected areas; and experiential learning through both international field studies and the Certificate in Sustainability Studies at the University of Calgary.

**Dr. Sarah Skett** is a Research Associate and Instructor in Sustainability Studies at the University of Calgary, Canada. An international development and sustainability specialist with over ten years of experience in researching, developing, implementing, monitoring and evaluating initiatives and projects. Her experience ranges across education, community development, at-risk youth and vulnerable populations, refugees, HIV/AIDS, and voluntourism. She has taught at the University of Calgary since 2010 in Geography, and more recently, Sustainability Studies. Her current work focuses on experiential learning and applied research opportunities for students in the Certificate in Sustainability Studies. She has a Master's from Queen's University and completed her Ph.D. at the University of Calgary in 2014.

**Becki Tyssen** is a research assistant in the Certificate for Sustainability Studies program at the University of Calgary. She is completing her Master's of Science in Geography on Sustainable Tourism. Her thesis is titled "Potential of geographic information systems to support environmentally sustainable

travel in Alberta's Bighorn Backcountry. The objectives of this research are to (1) identify how tourists perceive their role in supporting an environmentally sustainable tourism industry and (2) to identify how information relevant to the protection of the local environment may be presented in a way that promotes an active role in environmental sustainability.

**Ashley Morrison** is a research assistant for the Certificate in Sustainability Studies program at the University of Calgary. She completed her Bachelor of Arts in Political Science at the University of Calgary in 2019. She will be pursuing a Master of Science in Higher Education and Student Affairs at Miami University of Ohio this fall. Ashley has worked in Higher Education since 2015.

## 227. Corporate water management in an emerging economy

Prof. Lisa Bunclark, Prof. Gregory Scott

**ABSTRACT:**

Less than 3% of the earth's water is fresh and only around 0.5% is accessible to people and firms to meet their needs. In that context, leading companies around the world have begun to focus more of their attention on water-related issues. While considerable research has been carried out on corporate water management (CWM) in industrialized nations, much less has been published as relates to CWM in developing countries. This study provides an initial exploration of CWM in an emerging economy based on an analysis of Global Reporting Initiative reports, related secondary sources, and a select number of company case studies. In so doing, the paper seeks to provide an integrated framework for assessing CWM in such situations followed by its application to current CWM practices in a particular developing country: Peru. These steps then serve to present a typology of different management practices for CWM and their defining characteristics with an aim to facilitate broader and more in-depth CWM policies and practices in developing countries in the years ahead.

*Keywords: Sustainability- supply chain- water use/availability-stakeholders-developing countries-business -Peru*

**Prof. Lisa Bunclark** has over 10 years' experience developing and managing global sustainable development related projects across the private, public and NGO sectors as a practitioner, researcher and consultant. Working across Africa, Asia and Latin America, primarily in relation to water resources management for domestic and productive uses, as well as broader issues of climate change mitigation and adaptation, environmental sustainability and social welfare. PhD in Sustainable Water Management, Newcastle University; MA in Development Studies, University of East Anglia; MEng in Civil Engineering, Imperial College London.

**Prof. Gregory Scott** Over 30 years working in developing countries in Asia, Latin America and Sub-Saharan Africa on issues related agriculture and rural development, with a Ph.D., Agricultural economics, U. of Wisconsin-Madison; M.A., Philosophy, Politics and Economics, U. of Oxford, England, B.A., History and Philosophy of Science, U. of Notre Dame, USA.

## 228. Economic, Environmental and Human Cost of Road Distribution of Petroleum Products in Nigeria

Dr. Ahmed Tukur Umar

### **ABSTRACT:**

Despite having a large network of petroleum distribution pipeline in Nigeria covering thousands of kilometres between the Niger delta region and Northern Nigeria, refined petroleum products are still distributed by trucks. This has come with high economic, environment and human cost. The study used a different approach from existing studies in assessing the factors responsible for the inability of the government to enforce the use of existing oil pipeline distribution network in Nigeria despite high cost associated with the road distribution network. The study employed Exploratory Factor Analysis (EFA) in analysing the data collected from 150 respondents selected for the study. The study discovered corruption, easy diversion of petroleum products, and insecurity among major factors responsible for the inability of the government to enforce the use of pipeline. The study recommends improvements in security of oil pipeline, fight against corruption among transporters and government oil workers, enforce the use of oil pipeline to distribute petroleum products to reduce loss of lives and protect the environment.

*Keywords: Economic, environment, human-cost, petroleum distribution*

**Dr. Ahmed Tukur Umar** is a senior lecturer at the department of economics Modibbo Adma University of Technology Yola Nigeria. He is a specialist on environmental and energy economics. He has published a number of research papers in reputable journals on the impact of oil spill on the environment. In addition he has attended seminars/workshops both within and outside Nigeria.

## 229. Densification of Forest and Agricultural Biomass and Combustion of the Respective Briquettes

Aida Sanches, Vitor Ferreira, Ricardo Barbosa, Dr. Carlos Pinho

### ABSTRACT:

The possibility to vary the energy matrix, thus reducing the dependency on fossil fuels, has amplified the acceptance of biomass as an alternative fuel. Despite being a cheap and renewable option of waste from agriculture and forestry activities, the use of these materials has barriers due to its low density and low energetic efficiency, which can raise the costs of its utilization. Biomass densification has drawn attention due to its advantage in comparison to in natura biomass due to its better physical and combustion characteristics. Work has been carried out in this areas namely in the densification (briquettes) forestry wastes, kiwi and vine punning waste and their respectively elementary characterization. In a subsequent step, this work also presents the study of the thermal performance and combustion hygiene of the different briquettes produced in a burning hot water boiler. The thermal efficiency was determined by the direct method and it was found that the boiler thermal performance was quite similar for the different types of fuel tested and did not depend on the fuel feeding rate.

*Keywords: Economic, environment, human-cost, petroleum distribution*

**Aida Sanches** Areas of Expertise: Bioenergy and HVAC Systems Junior Consultant, has participated in AVAC projects and in consulting work in the areas of energy audits, energy certification of buildings, preventive and corrective maintenance of various equipment (boilers, air compressors) and support to the design of solar systems and biomass boilers. Master in Mechanical Engineering from the University of Trás-os-Montes and Alto Douro.

**Vitor Ferreira (MSc)** graduate in 2000 in Chemical Engineering at the School of Engineering of Porto Polytechnic, having followed to a specialization in fluid mechanics, in the same Faculty, receiving his master degree in 2002. Since 2004 he is part of INEGI's staff, when he integrated a research and development team with expertise in thermodynamics and combustion fields; then he was included in gas-water heaters development projects for Bosch. In more recent years, and now in Energy group, he has been collaborating in several projects in different areas of activity, namely energy efficiency; industry thermal energy optimization; bioenergy and solar energy. Currently he is responsible of many projects and for the team lab activity in the scope of tests: planning, bench preparation and execution.

**Ricardo Barbosa (MSc)** graduate in 1999 in Chemical Engineering at the Faculty of Engineering of Porto University, having followed to a specialization in fluid mechanics, in the same Faculty, receiving his master degree in 2005. In 2012 he enrol a Project Management training from Winning Management Consulting. In 1999 he integrated INEGI and since then he has been involved in projects regarding different domains of activity such as product development, thermodynamics, combustion, bioenergy, solar energy and energy efficiency. Currently, he is responsible for the management of INEGI's Group of New Energy Technologies and Energy Management (both human resources and financially). Between 2004 and 2006 he was Assistant Professor in the Department of Mechanical Engineering and Industrial Management of Polytechnic Institute of Viseu Technology School.

**Carlos Pinho (PhD)** Associate Professor with Agregation of the Department of Mechanical Engineering of the Faculty of Engineering of the University of Porto, is scientific coordinator of the group of new technologies and energy management of INEGI. In this role, it coordinated several projects in the Areas of Combustion, Fluid Mechanics, Industrial Thermal, Thermodynamics, heat and Drying.

## 230. Adoption and impact of integrated Striga and soil fertility management strategy in Mali

Felix Badolo, Nzungize John, Sidina Ali Diallo

### ABSTRACT:

The possibility to vary the energy matrix, thus reducing the dependency on fossil fuels, has amplified the acceptance of biomass as an alternative fuel. Despite being a cheap and renewable option of waste from agriculture and forestry activities, the use of these materials has barriers due to its low density and low energetic efficiency, which can raise the costs of its utilization. Biomass densification has drawn attention due to its advantage in comparison to in natura biomass due to its better physical and combustion characteristics. Work has been carried out in this areas namely in the densification (briquettes) forestry wastes, kiwi and vine punning waste and their respectively elementary characterization. In a subsequent step, this work also presents the study of the thermal performance and combustion hygiene of the different briquettes produced in a burning hot water boiler. The thermal efficiency was determined by the direct method and it was found that the boiler thermal performance was quite similar for the different types of fuel tested and did not depend on the fuel feeding rate.

*Keywords: Economic, environment, human-cost, petroleum distribution*

**Dr. Felix Badolo** is Scientist - Agricultural Economist at the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) in Bamako, where he undertakes applied research on impact assessment of agricultural technologies on farmers' livelihoods, adoption studies, cereal market participation, cost-benefit analysis of improved agricultural technologies, cereal value chains development, monitoring and evaluation issues, and macroeconomic analysis. His main areas of expertise include development economics, project analysis, and statistical and econometric analysis.

**Dr. Nzungize John** is a qualified agricultural scientist with a very strong experience in project management with proven successes in delivering project outcomes. Committed, result driven and team player with work experiences in many countries involving collaborations and partnerships with wide range of stakeholders and cultural backgrounds. Most of his research and development experiences come from work in Sub Saharan Africa particularly in East and West African Regions. Multilingual with excellent written and spoken French, English and Kinyarwanda; and very good fluency in Swahili and Lingala.

**Mr. Sidina Ali Diallo** After holding a master degree in Applied Agricultural Economics and Policy, he did a training on "Early Alert System" and he conducted some field surveys on food security issues, value chains analysis of groundnut, sugar pea, potato. Mr. Diallo worked during one year at ICRISAT in Bamako as research assistant. Currently, Mr. Diallo is Teaching Assistant at Faculty of Economic and Management Sciences at Bamako. His interest fields include Agricultural Economics, Macroeconomic Analysis and Econometric analysis.

## 231. Synergistic Effect of Biochar and Amino Acid on Biohydrogen Production: Optimization and Kinetic Study

Yong SUN, Gang YANG

### ABSTRACT:

The possibility to vary the energy matrix, thus reducing the dependency on fossil fuels, has amplified the acceptance of biomass as an alternative fuel. Despite being a cheap and renewable option of waste from agriculture and forestry activities, the use of these materials has barriers due to its low density and low energetic efficiency, which can raise the costs of its utilization. Biomass densification has drawn attention due to its advantage in comparison to in natura biomass due to its better physical and combustion characteristics. Work has been carried out in this areas namely in the densification (briquettes) forestry wastes, kiwi and vine punning waste and their respectively elementary characterization. In a subsequent step, this work also presents the study of the thermal performance and combustion hygiene of the different briquettes produced in a burning hot water boiler. The thermal efficiency was determined by the direct method and it was found that the boiler thermal performance was quite similar for the different types of fuel tested and did not depend on the fuel feeding rate.

*Keywords: Economic, environment, human-cost, petroleum distribution*

**Dr. Yong SUN** is an Assistant Professor (Lecturer) at Department of Chemical and Environmental Engineering, University of Nottingham Ningbo China, he has his expertise in biohydrogen fermentation, process intensification using fluidization and microstructured techniques and their application in the catalytic conversion of natural gas or biomass into hydrocarbons via Fischer Tropsch (FT) synthesis.

**Gang YANG** is a Professor at Institute of Process Engineering, Chinese Academy of Science, National Laboratory of Biochemical Engineering. His expertise focus on the green chemical process and renewable energy development.



## 232. Current and future prospects of small hydro power plants. Opportunities and risks

Aranit Shkurti

### **ABSTRACT:**

Small hydro power plants can be an alternative source of electrical energy due to several advantages like minimum maintenance and operating costs, well established technology, opportunity to balance the supply, positive socio-economic impact on rural isolated areas etc. Unlike large plants, small hydropower installations can have a minimum impact on the water ecosystems avoiding to exploit local resources. Overall, 15000 MW of hydroelectric resources have been identified in Albania, whereas, approximately 31% of the identified resources are operational, with 4500 MW of installed hydroelectric power. This paper describes the state of the art of the small hydropower concessions in Albania. The key factors that are taken under consideration are: the return of the investment, the nature and scale of impacts on local communities, and then the extent to which small hydropower might be considered distinct from other energy sectors in terms of externalities that they can generate.

*Keywords: Small hydropower plants, externality, rural communities, utilities.*

**Dr. Aranit Shkurti** is an Assistant Professor of Statistics, College of Engineering and Technology, American University of the Middle East, Kuwait. More than 10 years of Experience in the field. PhD University of Rome, "La Sapienza", Italy.

## 233. Economic Value of CH<sub>4</sub> Emitted From Palm Oil Mill Effluent (Pome) in Palm Oil Industry

Deffi Ayu Puspito Sari, A Faroby Falatehan, Dessy Fadilah S.T., Aqil Azizi

### ABSTRACT:

The palm oil industry contributes to the production of Greenhouse Gases (GHG) from the land conversion sector, energy use, industrial processes and the processing of residual oil palm waste. From wastes released by palm oil mills, empty bunches and liquid wastes have the potential to generate methane gas emissions which is one of the GHGs. In this study, the calculation of the amount of emissions produced from palm oil mills in the degradation process of Palm Oil Mill Effluent (POME) and Empty Fruit Bunch (EFB) was calculated using company's calculation standard and discussed using IPCC 2006 Volume 5 Chapter 6 concerning the Waste Water Treatment and Discharge. The high methane gas produced is utilized as alternative energy for biogas power plants. In addition to reducing the amount of GHG emissions, the use of methane has also reduced the costs for electricity used, so that there are economic benefits generated by the biogas power plant. The calculation results obtained by the average emissions produced in the waste processing sector annually 9,503 t-CO<sub>2</sub>/year and the economic value of electricity generated is IDR 1,866,370/day.

*Keywords: Biogas Power Plant, Climate Change, Emission Calculation, Greenhouse Gases, Renewable Energy*

**Deffi Ayu Puspito Sari, S.T.P., M.Agr., Ph.D** is a lecture and head of Research and Development Center of Bakrie University, she also an expert lecturer at Indonesia Defense University. She graduated from the Graduate School of Agricultural Science, Department of Resource and Environmental Economics, International Program of Human Security for Food and Agriculture, Laboratory of International Development Studies, Tohoku University, Japan and received a Master's and Ph.D in Biological Resource Science and Agricultural Science. She received his bachelor degree from the IPB University (Indonesia). Deffi had taught at the Sendai National College of Technology (Japan), as an assistant at Tohoku University (Japan), as a non-permanent lecturer at the Bogor Agricultural Institute. As a consultant for Promar Consulting, Japan (Biomass Project Indonesia); Dongi Senoro LNG (Trainer for Basic Technical Apprentice); Pertamina (Saving the Trees Project); USAID (Agricultural Market and Support Activities (AMARTA) II); Tasma Bioenergi (Biomass Power Plant). She had attended Training for Green Engineering and Low Carbon Development from UNEP in Copenhagen, Denmark; Collaborative Research in Climate Change Adaptation from IFS, Philippines; Indonesia-Taiwan Research Enhancement Workshop, Taiwan; The Economy and Environment Program for Southeast Asia (EEPSEA), Penang, MALAYSIA; Disaster Risk Reduction, JICA and I-Charm, Japan. With her team, she received National Award on Energy Efficiency, Ministry of Energy and Mineral Resources Republic of Indonesia.

**Dr. A Faroby Falatehan** is Lecturer at Department of Resources and Environmental Economics, Faculty of Economics and Management, IPB University (Indonesia). Head of Resources and Environmental Economics Program of Graduate School, IPB University. Expert of Social and Environmental Impact at Re-mark Asia, Re.Mark Asia is a consultancy services on sustainability and supply chains in the forestry and agricultural sectors. He completed his bachelor's program at IPB University at Bogor, Indonesia in Social Economics of Agriculture Program at 1998. He earned his master's degree at University of Indonesia in Planning and Public Policy Program, Faculty of Economics at 2005. He finished his doctoral program at National University of Malaysia in Resource and

Environment Economics at 2016. He had attended Training for Development of CoE Government Accountability in Georgia State University, US at 2017. Futhermore, he joined Pilot e-Course about Sustainable Agricultural Land Management Projects: Soil Carbon Monitoring, conducted by The World Bank Institute at 2013.

**Dessy Fadilah S.T.** is a Research Assistant at the Bakrie University Research and Development Center. She graduated from Bakrie University, Department of Engineering and Computer Science, Environmental Engineering Program. Dessy is a lecture assistant at Bakrie University for Basic Physics Laboratory. She has attended Training to Regulations and Technical Aspects of Environmental Management dan Training the Supervision Development of Occupational Safety and Health Norms.

**Aqil Azizi** Ph.D is a lecturer and Head of the Environmental Engineering Study Program at Bakrie University. Aqil Azizi completed his Bachelor of Science at IPB University in 2005. In 2009 Aqil completed his Master of Applied Science at the University of Tasmania, Australia in the field of aquaculture. Furthermore, PhD was achieved from the University of Science and Technology (UST), South Korea in the field of Marine Biotechnology affiliated with the Korea Institute of Ocean Science and Technology (KIOST).

## 234. Supply Chain Accelerated Recycling Model (SCAR) in Bushbuckridge Local Municipality

Fannie Machete

### ABSTRACT:

This study presents Supply Chain Accelerated Recycling Model (SCAR) which is a new model of doing recycling. The model was piloted in Bushbuckridge, one of the of local municipalities in South Africa (SA). SCAR was a must have in SA given the country's low levels (10%) of recycling performance, including in Bushbuckridge due to its low levels (7.5%) of formal refuse collection services. A participatory action research (PAR) research design was adopted and focus group (structured) discussions was used for data collection. Municipal officials and local recyclers were the participants in the study. The outcomes of this study was used to refine the SCAR model, improve recycling and municipal supply chain management policies and to integrate recycling into main stream municipal waste management systems. Significant contributions of this study to sustainable development goals included the creation of green jobs for many unemployed locals, development of small business opportunities for local recyclers, identification and expansion of recycled products markets and many more. Thus, the SCAR model proved to be successful in increasing recycling performance, creating green jobs and reliable recycling income in BLM, South Africa. SCAR is thus recommended for adoption in other countries as a model for sustainable recycling.

*Keywords: SCAR model, recycling performance, green jobs, municipal waste.*

**Prof. Fannie Machete** has completed his PhD at the age of 34 from University of South Africa (UNISA). He is currently an Associate Professor in the Department of Environmental Sciences at the University of South Africa. He is also a Chief Executive Officer at Machete Hotels (Ga-Machete Guesthouses Brand). He is currently law (LLB) student in his final second last year at UNISA and has published more than 10 journal papers, a book chapter and presented numerous conference papers. He has Masters and PhD students graduated under his supervision. Prof Machete's academic specialty is in environmental health and environmental management. He has worked at Mpumalanga Department of Health, eMalahleni Local Municipality, Govan Mbeki Municipality, Bojanala Platinum District Municipality, Tshwane University of Technology, and the Council of Scientific and Industrial Research (CSIR) in different portfolios before joining his current employer as an academic.

## 235. Challenges and Solutions for Organizational Design In Urban Digitalization

Máté Csukás, Viktor Bukovszki, András Reith

### ABSTRACT:

Digitalization in cities – often branded as smart city (SC) transition – carry the potential for highly inclusive, evidence-based decision making in urban planning, responding to the increasing pressures cities face. However, investments have thus far failed to deliver the expected impacts, thus the attention of the discourse is turning towards organizational structures to overcome complexity, scalability, and procedural challenges of SC transition. This study outlines the barriers inherent in common organizational models (public sector, private-supplier, academic-professional) to SC transition, and makes the case for alternative models, through an extensive literature review, a series of focus groups with key stakeholders involved in SC transition. The paper concludes with showcasing how a nested platform model based on open innovation and a lean approach to urban planning could overcome organizational barriers – using the work in progress, validated design features of a novel organizational model.

*Keywords: urban planning, platform, open innovation, assessment, smart city, organizational models*

**Máté Csukás** is a PhD student and research assistant, Corvinus University of Budapest, Hungary. Member of University Research Group where investigates on aspects of developing a smart, sustainable and inclusive society: social, technological, innovation networks in employment and the digital economy.

**Viktor Bukovszki** is a consultant at ABUD Mérnökiroda, Budapest, initiating and assisting research and development projects in the field of Smart City. He is an interdisciplinary researcher with special focus on the social performance on space.

**Dr. András Reith PhD** is the CEO and founder of ABUD Mérnökiroda, Budapest. He is an active architect and researcher, he has promoted sustainable design for two decades. His special fields of expertise are Integrated Design Process, ClimaDesign®, specialized façade design, design and consultancy of Net-Zero energy developments, and design in accordance with LEED, BREEAM and DGNB. He is an expert reviewer of the fifth report of UN IPCC (Intergovernmental Panel on Climate Change), a leading author of the Climatic and Energy Concept of the Budapest Urban Development Concept and former president of the Hungary Green Building Council.

## 236. Virtual Reality improving quality education: A case study of a Brazilian Amazon school

Thiago Leite Cruz, Wykli da Costa Nunes, Ingrid Rafaela da Silva Macedo

### ABSTRACT:

Ensure inclusive and equitable quality education is one of the Sustainable Development Goals adopted by United Nations, an issue of ultimate importance in underdeveloped countries. The present research assessed how to achieve it in the Brazilian Amazon region, using a Virtual Reality (VR) device to improve the educational process of elementary students from a public school located in the municipality of Belém/PA – Brazil. We tested the use of the MiritiBoard, a VR device consisted of an average smartphone and miriti, an abundant wood in the Amazon region. It is licensed by Intecereli/Google and uses the Google Expeditions app, but its license is for free for educational purposes in schools. We guided the students when constructing the MiritiBoard and using the Google Expeditions app for learning. In the process, they applied Math and Geometry concepts to construct the device, learned about the biological, cultural, geographic and economic importance of the miriti tree in the Amazon region and other subjects using the app. Several positive outcomes indicated the experience was successful. Students worked together, helping each other and were glad to have hands-on experiences in school. There is huge potential to improve the quality of education in underdeveloped regions using such device.

*Education. Virtual Reality. Amazon region. MiritiBoard.*

**MSc. Thiago Leite Cruz** has Bachelors' Degrees in International Relations (University of Amazon – Brazil, 2012) and Biology (Federal University of Pará – Brazil, 2015), a Postgraduate Certificate in Business Management (London School of Business and Finance – United Kingdom, 2017) and a Master's Degree in Sustainable Development (Vale Institute of Technology – Brazil, 2017). Currently, he works as a researcher at Vale Institute of Technology, where he studies the social and economic impacts of mining industry in the Amazon Region. Besides mining, he is very interested in applying sustainability in other fields such as education, technology, finance and law. He frequently gives lectures on Sustainable Development in international events.

**Wykli da Costa Nunes** has a Bachelor's Degree in Science, Maths and Language Integration from the Federal University of Pará (Brazil – 2018). His expertise lies in cyberculture, teaching and learning, and Teacher Training. His previous experiences include: working as Educational Collaborator at the Traffic Department of the State of Pará (Brazil); associate teacher at Intecereli/Google Partner; monitor at the teaching project Inverted Classroom, at the Federal University of Pará (Brazil); and a traineeship at the Science and Maths teaching support program. Wykli da Costa Nunes is also involved with Google's projects in technology for education, and has a Google's Certificate in Digital Citizenship. Currently, he is engaged in a Master's Degree in Cyberculture and Education at the Federal University of Santa Catarina, in Brazil.

**Ingrid Rafaela da Silva Macedo** has a Bachelor's Degree in Science, Maths and Language Integration from the Federal University of Pará (Brazil – 2018). Her expertise lies in Sciences, Psychopedagogy, Teaching and Learning, Teacher Training and Chemistry. She was awarded scholarships and traineeships to conduct research in many projects involving teaching Science. She's currently engaged in postgraduate courses in Special Education.

## 237. Economics of Running an Aviation School: The Philippine Experience

Marwin M. Dela Cruz

### **ABSTRACT:**

Sustaining the chain of economic development entails drastic capital investment in the recent years and acquisition, merging and joint ventures become a by-word. Transportation and communication is not spared from such circumstances primarily because sustaining the supply chain of economic value rely heavily in mobility of goods and services. One of the cheapest and safest mode of transportation is air transportation and its allied services. In this regard, education sector must be in the forefront of this development. Running an aviation school entails a holistic approach to answer this demand. Greater consideration must be given to quality of instruction by looking into curriculum, investing in adequate research, training and awareness and most specially partnership with the industry for career support so that students stay in the endeavor. Administrators need to look the cost of annual tuition fee while adopting to new technologies and other social cost of education. Corpus based investigation coupled with qualitative and quantitative researches will be employed. The findings of the study will pave way to the capacity to add or subtract the issues and concern in understanding a shared vision for more sustainable aviation education.

*Aviation School, Economics, Philippine State College of Aeronautics, Education*

**Prof. Marwin M. Dela Cruz** is currently the President of the Philippine State College of Aeronautics, the only state funded Higher Education Institution in the Philippines offering programs in the Aviation Sciences. He is a graduate of the University of Santo Tomas with the degree in Doctor of Philosophy in Development Studies (Cum Laude). A recipient of various scholarship grants and attended programs offered by the Commission on Higher Education (CHED-Philippines) Development Academy of the Philippines (DAP) and the Asian Institute of Management (AIM). A Career Executive Service Board (CESB) eligible. He is also connected at the University of Santo Tomas Graduate School, Manila and the Don Honorio Ventura State University, teaching philosophy and development studies. Former Dean of the College of Social Sciences and Philosophy and Vice President for Planning, Research and Extension of the Bulacan State University.

## 238. Sustainability advisory boards in German Governments

Dorothea Schostok

### ABSTRACT:

The development of a sustainability strategy according to the Good Governance criteria of the European Sustainable Development Network (ESDN) includes the reflexive development of the sustainability strategy, which is understood as the continuous questioning of decisions in a horizontal and vertical multi-level system. A central aspect addressed by the criterion of participation is the involvement of non-governmental actors in sustainability management.

According to the Good Governance criteria of the European Sustainable Development Network (ESDN), the development of a sustainability strategy should follow a reflexive approach, which is understood as the continuous questioning of decisions in horizontal and vertical multi-level system. A central aspect addressed by the criterion of participation is the involvement of non-governmental actors in sustainability management.

This presentation analyses sustainability management with a focus on sustainability architecture in Germany and its federal states. A particular focus is given to the sustainability advisory boards of governments, which assemble various non-state actors. Science can play a central role here: On the one hand, through proactive participation and, on the other hand, as organisers of these sustainability advisory boards. The second has many advantages for both partners - governmental and non-governmental actors, as this presentation will show.

Methodically, the presentation is based on desktop research and provides an overview of the existing advisory boards for sustainable development and compares the similarities and differences. This is completed by an impact analysis of the "TEAM Sustainability" and advantages and disadvantages as well as experiences with the unique sustainability architecture of the federal state of North Rhine-Westphalia (NRW).

The TEAM Sustainability was established to support research projects concerning the development and implementation of the sustainability strategy of NRW carried out by the Wuppertal Institute. It consists of sustainability-relevant social stakeholders from NRW and thus unites different social perspectives on the sustainability debate.

The presentation will be of interest to all state actors involved in the further development of their sustainability architecture. Non-state actors, especially the scientific community, can also benefit from the results in order to strengthen their role in state sustainability advisory boards.

*Sustainability Advisory Board, Sustainability Advisory Council, Government, Management, Sustainability Strategy, Sustainability Architecture, Participation, Non-State Actors*

**Dr. Dorothea Schostok** is a research fellow in the Department Future Energy and Industrial Systems at the Wuppertal Institute for Climate, Environment and Energy gGmbH. She graduated as Diplom Ökonomin and successfully completed her doctoral studies in economics at the Schumpeter School of Business and Economics at the Bergische Universität Wuppertal in spring 2018. Her work focuses on the analysis and development of sustainability strategies, as well as the research fields of corporate and economic development. Dr. Dorothea Schostok is currently leading the project "Experiences in implementing state sustainability strategies - case study sustainability strategy NRW". She has been working as a freelance moderator since 2006 and today mainly accompanies events from science and business.



## 239. Trend Analysis on Freshwater fish species in coastal provinces in Turkey between 2000 and 2017

Hasan Goksel Ozdilek

### **ABSTRACT:**

Turkish freshwater resources have been under hazard due to global climate change, damming, pollution, etc. Inland fish resources provide food (protein), income, and ecosystem functions and well-being. On the other hand, urban sprawl, biocides used in vast amounts in agriculture, water diversion to agriculture and industry, damming, land use and land cover change and many other factors impact freshwater quality and quantity and consequently freshwater species in terms of abundance and biodiversity. The Mann-Kendall test was used to analyse time series trends in fish catch. Raw data were taken from Turkish Statistic Institute. Fish catches have significantly declined in most of the Turkish freshwater resources. Environmentally sound management practices are recommended for each province to lower pressure on ecosystems in terms of freshwater fish resources. It was found, after completing the trend test (the Mann-Kendall trend test) for 19 different Turkish provinces, that many places show a decreasing trend for inland fish species. Only one species in Bursa, a metropolitan city, and only one species in Manisa, a metropolitan city, showed an increasing trend over the past 18 years.

*Fish catch, inland freshwater resources, trend test, pollution, sustainable water use.*

**Dr. Hasan Goksel Ozdilek** got his Ph.D. in Civil Engineering from Worcester Polytechnic Institute (USA) in 2002. He is an associate professor at Canakkale Onsekiz Mart University. He teaches Sustainable Development, Environmental Law, Environmental Impact Assessment and Hazardous Waste Management.

## 240. An Examination of Tenure Reforms in China's Collective Forests

Can Liu

### **ABSTRACT:**

The Chinese government has launched a new wave of reform of collective forestland tenure since 2003. The overall goals of the reform were to increase peasants' income while enhancing sustainable forest resource management. Using a dataset from more than 2,400 households in 162 villages selected from 54 townships of 18 counties in nine provinces, this study seeks to examine the effects of tenure reforms on family income in rural areas, and assess the impact of the new tenure arrangements on forest management. We find that the tenure reforms have resulted in an increase in the area of timberland allocated to villagers. In the study areas, forestry has become the second most important source of earnings. The tenure reforms have caused widespread forest fragmentation. The reduction in the size of forest plots has increased operating costs, making it difficult to achieve scale economy in forest management. A viable solution to the fragmentation problem is to foster the creation of cooperatives among peasants, enterprises and civic groups.

*Tenure reforms; Collective Forests; China; Sustainable management ; Peasants' income*

**Can Liu**, the Professor and Director of Rural Development Sector, China National Forestry and Grassland Economics and Development Research Center, the PhD of China Agricultural University, fellow of Leadership for Environment and Development. The main research fields are institutional economics, forestry economics, grassland economics, rural poverty reduction and sustainable development. He has chaired over 40 research projects funded by the World Bank, the Asian Development Bank, the Ford Foundation, etc., and published over 10 monographs and 200 papers in *Land Use Policy*, *International Forestry Review*, *Forest Policy and Economics*, *Journal of Forest Economics*, *Environmental Management*, *Renewable & Sustainable Energy Reviews*.

## 241. Access to Legal Information as a Factor in Achieving Sustainable Development Goal 16: Peace, Justice and Effective Institutions: Experience of the Republic of Belarus

Kovalenko Evgeny, Chuprakova Iryna, Marozau Dzmitry, Barkouskaya Volha

### **ABSTRACT:**

The presentation is devoted to the activities of the National Center of Legal Information of the Republic of Belarus, which ensures the development of the state system of legal information. In particular, there are considered issues of the functioning and improvement of this system, which ensures implementation of the rights to access to official legal information for citizens and legal entities, as well as the introduction of information technologies in these processes that form the corresponding segment of the electronic government of the Republic of Belarus. This directly contributes to the effective implementation of the tasks of promoting sustainable development, in particular in the field of strengthening the rule of law and promoting human rights.

*legal information, Sustainable Development Goal 16, computer technology in law*

**Mr. Evgeny Kovalenko** is a Director of the National Center of Legal Information of the Republic of Belarus.

He was born on June 26, 1980. In 2002 he graduated with honors from the Belarusian State University of Economics with a degree in Law, in 2005 - from the special faculty of foreign languages of the Minsk State Linguistic University with a degree in English, in 2016 he graduated with honors from the Academy of Management under the President of the Republic of Belarus with a degree in "State building".

## **242. An assessment of the impact of climate change on environmental and agricultural sustainability in northern Nigeria.**

Abdulkadir Ahmed, Abubakar Umar Alhaji, Hussaini Ahmed Pindiga

### **ABSTRACT:**

Environmental preservation has remained a challenge in the globalized world of 21 century. Rapid urbanization, industrial developments, technological developments and population growth are among the numerous factors that continued to create problem for the environment especially in Africa. These problems are multifaceted and their consequences are grave. Nigeria is one of the countries in the world grappling with the problem of environmental sustainability arising from climate change and these problem often resulted and exacerbated relentless clashes between herders and famers conflict especially in the northern par where desertification and desert encroachment moving fast and have since taken over farm lands and villages. This study therefore examined the impact of climate change on environmental sustainability in Northern Nigeria and how urbanization and population growth affected environmental sustainability. The study used both primary and secondary sources of data through interrogation of literature, questionnaire administration and interviews. The findings revealed that human activities such as urbanization, farming and indiscriminate felling down of trees are among the factors that inhibit environmental preservation. The study recommends legislation on environmental preservation, awareness campaign and policies that are geared towards environmental protection and sustenance.

*Environmental, Climate, Herders, Northern and Sustainability*

**Abdulkadir Ahmed** is part of the Political Science Department, Federal university Kashere. Abdulkadir obtained his B.Sc. and M.Sc from University of Maiduguri and Ahmadu Bello University Zaria-Nigeria respectively. Abdulkadir has published many articles in both local and international journals. His area of research interest includes international relations, governance and developmental issues.

## 243. An Assessment of the Impact of Government Policy on Rice Revolution in Nigeria

Mohammed Umar, Yusuf Abdullahi Manu, Mohammed Chubado Abubakar

### ABSTRACT:

As Nigeria came out of recession, the quantum of rice produced in the country has continued to make headlines in the national dailies. Over the years, the country depends largely on imported rice for domestic consumption thereby making locally produced and local producers unable to compete. This menace had, for several decades thrown the country at the receiving end or rather a dumping ground for all sorts of rice produced abroad especially in Thailand, India, China and Singapore among other countries. It is against this backdrop that the federal government decided to place a ban on rice importation into the country with a view to boosting homegrown rice. This study is an assessment of the effectiveness of this grand policy, an initiative of President Buhari's administration geared toward food security and sustainable development. It examined and analyzed the way and manner in which Nigerians have responded to the policy. It also employs the use of secondary data, personal or participant observation for the evaluation of the impact of this ban on rice importation into the country. The paper uses thematic approach in analyzing the secondary data collected in order to give policy recommendations. Incrementalist model of decision making theory is adopted as framework for analysis. However, the Private sectors, Non-Governmental Organizations, farmers and potential farmers will find the study useful for their decision making process. Researchers, students and academics are likely to benefit from this study, especially now that the economy is begging for diversification.

Revolution, Government, Policy and Rice

**Mr. Mohammed Umar** is a Lecturer with the Department of Political Science, FHMS, Federal University of Kashere, Gombe State, Nigeria with at least Ten (10) years working experience. In the course of these years, I held different administrative positions ranging from Level Coordinator, Staff Adviser to Examination Officer among others. However, in line with academic research and development, I have published a number of Journal Articles and Conference Papers mostly in my area of specialization i.e. Public Policy Analysis. Finally and most importantly, I hold a Master Degree in Political Science since 2014 from ABU, Zaria and will very soon start a PhD program in University Putra, Malaysia.

**Yusuf Abdullahi Manu**, Department of Political Science, Federal University Dutse, Jigawa State- Nigeria  
**Mohammed Chubado Abubakar**, Department of Political Science and Public Administration, Adamawa State University, Mubi-Nigeria

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