



ICSDG2016

International Conference on Sustainable Development Goals 2016



“South East Asia: The ASEAN We Want”

7-8 DEC 2016 | USM, Penang, Malaysia

PROGRAMME BOOK

Supported by



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ABOUT ICSDG2016

To help frame the ASEAN current thinking on Sustainable Development Goals (SDGs), Universiti Sains Malaysia (USM) and the South East Asia Sustainability Network (SEASN) are organizing this International Conference On Sustainable Development Goals 2016 (ICSDG2016) to offer participants a platform for sharing experiences and present their latest research findings on sustainability science. This international conference will bring together researchers from Southeast Asia and its neighbourhood to discuss some very daunting questions we are facing in terms of sustainability. ICSDG2016 will concentrate on SDGs with particular focus on Prosperity, People, Planet, Peace and Partnership (5Ps). We strongly believe that researchers' experience and insights on SDGs will ensure that the best knowledge is garnered to support the successful implementation of the SDGs in Southeast Asia countries.

ABOUT SEASN

The South East Asia Sustainability Network (SEASN) is an alliance and platform of higher education institutions and other related sustainability organisations, agencies, NGOs and industries in South East Asia countries committed to promote, engage and integrate sustainability in their teaching, research, community engagement and institutional arrangement with a focus on Water, Energy, Health, Agriculture, Biodiversity; Climate Change & Disaster Risk Management, Consumption & Production and Population & Poverty (WEHAB+3). The objectives of this network are to promote sustainability in higher education institutions, other related Sustainability organisations, agencies, NGOs and industries in Southeast Asia countries, to share information and best practices in sustainability, to exchange ideas and research findings in sustainability and to joint collaborations in projects on sustainability.

MESSAGE

MESSAGE



Deputy Minister
Ministry of Higher Education Malaysia
YB Datuk Dr Mary Yap Kain Ching

Malaysia is one of the countries that have agreed to this new consensus of global agenda, Sustainable Development Goals (SDGs). The Ministry of Higher Education (MOHE) has established a national higher education blueprint 2015 – 2025 to prepare Malaysian youths in facing challenges in the ever-changing world. This is important because the young generations will contribute to the growth of our nation. This is in line to SDG goal number 4 (SDG4) which is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Continuous excellence in the higher education system can be achieved by several shifts focusing on the outcomes of key stakeholders. The transformation of the higher education system will hopefully lead to a collective set of desirable benefits, rights, and corresponding responsibilities for each stakeholder group. Quality education for sustainable development (ESD) is the foundation of improving people's lives.

I wish ICSDG2016 success and hope it will grow and facilitate Malaysia's aspiration to be the education hub of the region.

MESSAGE



USM Vice Chancellor & SEASN Chairperson

Professor Datuk Dr. Asma Ismail

Many of us are currently focusing on the general populace to play the role in achieving the sustainable goals. In spite of all that, almost all of us are talking about the need to improve the condition in this world without compromising the needs of the younger generations. Yet, we tend to forget the importance of changing the younger generations so that we would not worry of their future. The popular Malay proverb says that, 'melentur buluh biarlah dari rebungnya,' '...to make limber the bamboo from its tender shoots.'

Let us make university as a place for introducing the flexibilities of higher educations, where the younger generations could learn on solving problem in society as opposed to merely focusing on job prospects and guarantees of employability. Nurture the youths to be more sensitive to the environment and suffering of others before they take charge of this Earth. We hope for these bamboos to grow straight, strong and lush, this land need to be kept from the heat of the scorching sunlight. Then only we make this world a better place.

Welcome all delegates and participants to the ICSDG2016. Let us all strive and turn our dream into reality. Thank you.

MESSAGE



ICSDG2016 Convener & SEASN Secretary General

Professor Dr. Kamarulazizi Ibrahim

On behalf of South East Asia Sustainability Network (SEASN) and Centre for Global Sustainability Studies (CGSS), I would like to welcome all delegates and participants to the International Conference on Sustainable Development Goals 2016 (ICSDG2016) at Universiti Sains Malaysia. ICSDG2016 is an international conference that provides us with the opportunity to learn about the uniqueness of Southeast Asia and its surrounding region in the area of sustainability.

This year, ICSDG2016 focuses on the areas of Prosperity, People, Planet, Peace and Partnership (5Ps) which concentrate on the implementation of SDGs in the Southeast Asia region. We are optimistic that this conference will achieve its objective in highlighting the best practices and research outcomes in sustainability.

I would like to take this opportunity to thank everyone involved in organising ICSDG2016. It has been an honour to be involved with ICSDG2016, and I hope you will find this conference meaningful and beneficial.

KEYNOTE SPEAKER BIODATA



Professor Datuk Dr. Asma Ismail

Vice Chancellor

Universiti Sains Malaysia (USM)

The Honourable Professor Datuk Dr. Asma Ismail is the first female vice chancellor of Universiti Sains Malaysia. Prior to the current appointment, she was also the first female appointed as the Director General of Higher Education Malaysia. She graduated from the University of Nevada, Reno, USA with distinction in biology, received her MA in Microbiology from Indiana University, Bloomington, USA and obtained her PhD in the field of Cellular and Molecular Biology at the University of Nevada, Reno, USA in 1986. She was conferred Honorary Doctor of Science from the University of Glasgow, Scotland, United Kingdom in June 2013. She started her career as a lecturer in the Department of Medical Microbiology and Parasitology, School of Medical Sciences, Universiti Sains Malaysia in 1986. She was a visiting scientist at University of Tokyo in 1989 and a visiting fellow at the Medical College, St Bartholomew's Hospital in London in 1992. She was promoted to Associate Professor in 1993 and served as Deputy Dean of Administration in 1994. She was promoted to Professor in 2000 and became the Deputy Dean of Research in the same year. In 2001, she became the Director for the Centre for Medical Innovations and Technology Development, USM. In 2003, she became the Founding Director for the Institute for Research in Molecular Medicine (INFORMM), the first multi-disciplinary cluster based research institute for USM. In May 2008 she became the first woman in USM to hold the post of Deputy Vice Chancellor (Research and innovation).

PLENARY SPEAKER BIODATA



Mr. Mohamad Razif Hj Abd Mubin

*Director of Economic Section of Environment and Natural Resources,
Department of the Prime Minister, Economic Planning Unit*

Mr. Mohamad Razif Bin Hj Abd Mubin began his career as a civil servant in 1995 in the Ministry of Land and Cooperative Development. In 2000, he served in the Ministry of Energy, Communications and Multimedia as Assistant Secretary. He holds a Bachelor of Economics from International Islamic University Malaysia (IIUM) in 1994. He also obtained a Diploma in Public Administration from INTAN in 1996 and a Master of Business Administration in 2003 from the Multimedia University (MMU). In 2004, he served in the Foreign Ministry and placed at the Malaysian Embassy, New York and returned to Malaysia in 2008 to hold the position of Assistant Director of Administrative Modernisation and Management Planning Unit (MAMPU). Currently, he is the Director of the Economic Section of Environment and Natural Resources at Department of the Prime Minister of Malaysia.

PLENARY SPEAKER BIODATA



Mr. Alex P. Mavro, Jr

*Chief of Operations, Center for Sustainability Management,
Sasin Graduate Institute of Business Administration of Chulalongkorn University
(Bangkok, Thailand);
Co-Founder of the Corporate Responsibility & Ethics Association for Thai
Enterprise (CREATE)*

Alex is a reformed businessman, a self-confessed recovering plunderer who is atoning for a successful business career by coaching the new generation of business leaders along the path of sufficiency and sustainability.

Alex has lived in Thailand all his life. His business career was in express delivery. Beginning in 2002, he was one of the very first non-academic proponents of corporate responsibility in Thailand. He has since coached dozens of organizations, and his writings appear in assorted Bangkok publications. Alex is a highly regarded facilitator and speaker on the subject of sustainable management – and stakeholder responsiveness – in Asia.

PROGRAMME

CONFERENCE PROGRAMME

TIME	7 DECEMBER 2016
Opening Ceremony <i>Dewan Budaya, Universiti Sains Malaysia</i>	
8.00 am	Participants registration
8.30 am	Arrival of Guests
8.40 am	Arrival of The Honourable Professor Datuk Dr. Asma Ismail <i>Vice-Chancellor Universiti Sains Malaysia & SEASN Chairperson</i>
8.50 am	Arrival of The Honourable Datuk Dr. Mary Yap Kain Ching <i>Deputy Minister</i> <i>Ministry of Higher Education Malaysia</i>
9.00 am	National Anthem: <i>"Negaraku"</i> , USM Anthem: <i>"Menara Ilmu"</i> & Du'a recitation
9.10 am	Speech by Professor Dr. Kamarulazizi Ibrahim, <i>ICSDG2016 Convener & SEASN Secretary General</i>
9.20 am	Speech by The Honourable Professor Datuk Dr. Asma Ismail,
9.40 am	Officiating Speech by The Honourable Datuk Dr. Mary Yap Kain Ching
10.05 am	ICSDG2016 Video Montage
10.10 am	Presentation of WSU101 Exhibition Winner
10.15 am	Keynote Speech by The Honourable Professor Datuk Dr. Asma Ismail
10.45 am	Presentation of Souvenirs
11.00 am	Tea Break, Press Conference, Poster Session & Exhibition
Plenary Session <i>Dewan Budaya, Universiti Sains Malaysia</i>	
11.30 am	Plenary 1 <i>"SDGs: People, Planet, Prosperity, Peace and Partnership"</i> Mr. Mohamad Razif bin Haji Abd Mubin <i>Director of Environment and Natural Resources, Economic Planning Unit</i> <i>Malaysia</i>
12.30 pm	Lunch
2.00 pm	Plenary 2 <i>"ASEAN and SDGs"</i> Mr. Alex P. Mavro, Jr <i>Chief of Operations, Center for Sustainability Management, Sasin</i> <i>Graduate Institute of Business Administration of Chulalongkorn University</i> <i>(Bangkok, Thailand);</i> <i>Co-Founder of the Corporate Responsibility & Ethics Association for Thai</i> <i>Enterprise (CREATE)</i>

	Parallel Session : <i>Planet, People, Prosperity, Peace & Partnership</i>	Annual Meeting: <i>South East Asia Sustainability Network</i>
	Chancellory 2, USM	
3.00 pm	Oral Presentation	4 th SEASN Board Meeting
	<i>Meeting Room 3</i> <i>PTI Seminar Room</i>	Meeting Room 1
5.00 pm	Tea Break @ Banquet Hall, Chancellory 2, USM & End of Day 1	
8.00 pm	Welcoming Dinner @ Banquet Hall, Chancellory 2, USM	

TIME	7 DECEMBER 2016
	Welcoming Dinner Banquet Hall, Chancellory 2, USM
8.00 pm	Arrival of participants
8.15 pm	Arrival of Guests
8.30 pm	Arrival of The Honourable Professor Datuk Dr. Asma Ismail <i>Vice-Chancellor Universiti Sains Malaysia & SEASN Chairperson</i>
8.45 pm	Speech by Professor Dr. Kamarulazizi Ibrahim <i>ICSDG2016 Convener & SEASN Secretary General</i>
9.00 pm	Speech by The Honourable Professor Datuk Dr. Asma Ismail
9.30 pm	Dinner, Performance and Video Presentation
10.30 pm	End of Welcoming Dinner

TIME	8 DECEMBER 2016
9.00 am	Parallel Session : <i>Planet, People, Prosperity, Peace & Partnership</i> <i>Meeting Room 3</i> <i>PTI Seminar Room</i>
10.00 am	Tea Break & Poster Session Banquet Hall, Chancellory 2, USM
10.30 am	Parallel Session : <i>Planet, People, Prosperity, Peace & Partnership</i> <i>Meeting Room 3</i> <i>PTI Seminar Room</i>
11.30 am	Closing Ceremony Speech by Professor Dr. Kamarulazizi Ibrahim <i>ICSDG2016 Convener & SEASN Secretary General</i> <i>Banquet Hall, Chancellory 2, USM</i>
12.00 pm	Lunch & End of ICSDG2016

PARALLEL SESSION PROGRAMME

7 December 2016

TIME	MEETING ROOM 3	PTI SEMINAR ROOM
	Chairperson : Dr Noor Adelyna Mohammed Akib	Chairperson : Dr Mohd Sayuti Hassan
3.00 pm	<p><u>PLANET</u> Life Cycle Assessment Of Sweet Sorghum Co-Products Of Community-Based Small Scale Production Systems in Ilocos Norte, Philippines Larry A Santos Antonio J. Alcantara Eduardo P. Paningbatan, Jr Renato L. Lapitan Ronaldo B. Saludes Antonio Arcangel</p>	<p><u>PEOPLE</u> Dynamical Behavior of Grouping Pedestrians: From Observation to Modeling and Simulation Noorhazlinda Abd Rahman</p>
3.20 pm	<p><u>PLANET</u> Emission Inventory for Area Source: Case Study around Majlis Bandaraya Melaka Bersejarah (MBMB) Region Mohamed Hafiz Bin Md Isa Tee Boon Tuan Muhammad Zulfattah Bin Zakaria Nur Izyan Binti Zulkafli Ahmad Rivai</p>	<p><u>PEOPLE</u> Natural Resource Management Strategy Through Integrated Farming Based on Local Wisdom in Achieving Food Sovereignty (Case study: Indigenous People of Kasepuhan Ciptagelar, Jawa Barat, Indonesia) Firda Maftukhakh Hilmya Nada Baiturrahmah Ariya Diani Astika</p>
3.40 pm	<p><u>PLANET</u> Leveraging Culture And Creativity In Urban Development : The Case of George Town, Penang Suet Leng Khoo Nurwati Badarulzaman</p>	<p><u>PEACE</u> Challenges Of B40 Households In Elevating Income Class Towards Developed Countries In 2020 Siti Nor Ain Mayan Radieah Mohd Nor</p>
4.00 pm	<p><u>PLANET</u> A Food Web Model of Tropical Freshwater and Estuary: How does isotope tells us story? Farah Mastura Rosli Syahidah Akmal Muhammad Widad Fadhlullah</p>	<p><u>PEACE</u> 1 AZAM Program Implementation In Penang, Malaysia: The Problem And Improvement to Eradicate Poverty Norhidayati Nadiha Mukri Radieah Mohd Nor</p>

4.20 pm	<u>PLANET</u> Emission Inventory of Majlis Bandaraya Melaka Bersejarah: Point Source Evaluation Juhari Ab. Razak Nur Fathiah Mohd Nor Afiqah Hamzah Nurhidayah Ismail Ahmad Rivai	<u>PARTNERSHIP</u> A Case Study Of West Java CSR Forum Indonesia On Sustainable Development Practices And Partnership (The Success Story Of West Java CSR Forum, Indonesia) Yani Hendrayani Hidayat Nor Hazlina Hashim
4.40 pm	<u>PLANET</u> Application of Biodegradable Material in Restoring Degraded Soil System Nurin N.A H.P.S Abdul Khalil Teh W.F N. Zafirah M.K. Mohamad Haafiz M.I. Syakir	<u>PROSPERITY</u> Evaluating The Cost Benefit Through Efficiency On Non Revenue Water (NRW) Management : A Case Study at Bechah Tendong, Pasir Mas, Kelantan, Malaysia Mohammad Ghazi HJ Ismail Chan Ngai Weng Marlinah Muslim
5.00 pm	TEA BREAK & END OF DAY 1	

8 December 2016

TIME	MEETING ROOM 3	PTI SEMINAR ROOM
	Chairperson : Dr Radieah Mohd Nor	Chairperson : Dr Ng Theam Foo
9.00 am	<u>PLANET</u> Eco Innovation Model as A New Mechanism For Optimizing Local Ecosystem Service Shaiful Y Shahrudin Samsurijan R. Mostapa Widad F M. Hakimi Ibrahim M.I. Syakir	<u>PROSPERITY</u> Land-Use Requirements for Solar Power Plants: Meeting Brunei Darussalam's 2035 Renewable Energy Goal Sing Yew Then Muhammad S. Abu Bakar Regan T. Watts
9.20 am	<u>PLANET</u> Sustainable Development Based on Ecological Concepts Mashhor Mansor	<u>PLANET</u> Encouraging and Incentivising Sustainable Behaviour in Youth Pem Lama Rigzom Wangchuk Tim Huang

9.40 am	<p><u>PLANET</u> Techno-economic analysis of solar thermal-based renewable in Brunei Darussalam Nur E'zzah Istikhomah Zakeria Chien L. Tan Muhammad Saifullah Abu Bakar Regan Watts</p>	<p><u>PLANET</u> Sustainable Management For Flood Loss Reduction: A Case Study of the December 2014 Big Flood in Pahang Mohammad Ghazi HJ Ismail Chan Ngai Weng Marlinah Muslim</p>
10.00 am	TEA BREAK	
10.30 am	<p><u>PLANET</u> Environmental Degradation of River Waters As The Effect of Industrial Activity in Subdistrict Banguntapan, Bantul, Daerah Istimewa Yogyakarta Baiturrahmah Langgeng Wahyu Santosa Sigit Heru Murti</p>	<p><u>PLANET</u> Artificial Neural Network Modeling of Rheological Parameters and Compressive Self-Compacting Concrete with Zeolite Mineral as Partial Replacement for Cement Stephen John C. Clemente Andres Winston C. Oreta</p>
10.50 am	<p><u>PLANET</u> Water Quality Status of Bili-Bili Reservoir, Gowa, South Sulawesi, Based on Pollution Index Andi Rifani Baiturrahmah Sigit Heru Murti</p>	<p><u>PLANET</u> Role of Ecosystem Services in Catchment Management: A Snapshot N. Zafirah Shaiful. Y Nurin, N.A Widad. F M.I. Syakir</p>
11.10 am	<p><u>PEOPLE</u> A Review on the Impacts of School Grounds Design on Children's Performances and Well-being Nor Fadzila Aziz Nurul Nadia Mohd Noor Ismail Said Naziah Muhamad Salleh</p>	
11.30 am	<p>Closing Ceremony Speech by Prof. Dr. Kamarulazizi Ibrahim <i>ICSDG2016 Convener & SEASN Secretary General</i></p>	
12.30 pm	LUNCH & END OF ICSDG2016	

POSTER PROGRAMME

TIME	7 December 2016	8 December 2016
VENUE	Dewan Budaya, USM	Banquet Hall, Chancellory 2, USM

AUTHOR	TITLE
Singh D B. Vicknasingam Suresh Narayanan	Reproductive and Mental Health Problems among Women who Use Illicit Psychotropic Substances in Malaysia
Wan Ismahani Ismail	Thalassaemia Patients' Views Regarding Use Of Conventional Therapies: A Qualitative Investigations
Maurice Ian Wee Fatin Nabilla Ariffin Theam Foo Ng Ahmad Firdaus Ahmad Shabudin	Awareness and attitudes towards sustainable development amongst higher education students in Penang, Malaysia
Kamarulazizi Ibrahim Kanayathu Chacko Koshy Suzyrman Sibly Mohd Sayuti Hassan Ng Theam Foo Mohd Hafiz Ali Mohd Anuar Normaliza Abdul Manaf	WUSA – World Universiti Sustainability Assesment
Suzyrman Sibly Normaliza Abdul Manaf Kanayathu C. Koshy Kamarulazizi Ibrahim	DRM-SD: A Vulnerability and Adaptation Approach in Padang Terap District, Kedah

ORAL ABSTRACT

Life Cycle Assessment Of Sweet Sorghum Co-Products Of Community-Based Small Scale Production Systems in Ilocos Norte, Philippines

Larry A. Santos^a, Antonio J. Alcantara^b, Eduardo P. Paningbatan, Jr^c, Renato L. Lapitan^d,
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^e College of Engineering and Agro-Industrial Technology, University of the Philippines Los Baños

^f BAPAMIN Cooperative and Enterprise

Environmental life cycle assessment of community-based small scale production systems of sweet sorghum co-products (flour, grain for feeds, powdered sweetener, syrup, vinegar and hand sanitizer) was conducted to determine their environmental burdens during production and processing stages. From gate to packaging was the life cycle boundary. Seed crop of SPV 422 variety was grown on rainfed lowland rice farms after rice. Low moisture availability resulted to low grain and striped stalk yields. Market prices of the products were used to allocate the inputs and environmental impacts for co-products. Nitrate pollution potential of groundwater was one of the environmental impact categories.

Fertilizer application, use of fossil-based fuel for mechanized cultivation and pumping groundwater irrigation were hotspots in co-production of sweet sorghum grain and juice. Use of electricity for milling, a processing hotspot for flour production, resulted to its higher environmental burdens than the grain for animal feed.

Fuelwood-used for pasteurization was the common processing hotspot for four products and for distillation of alcohol. Use of electricity was the additional processing hotspot for powdered sweetener. For juice products, vinegar had the least environmental burdens while hand sanitizer, the highest. Mitigating measures were recommended to reduce environmental burdens of each product.

Keywords: Environmental Impacts, Environmental Hotspots, Global Warming Potential, Nitrate Pollution Potential, Atmospheric Acidification Potential, Economic Allocation

Dynamical Behavior of Grouping Pedestrians: From Observation to Modeling and Simulation

Noorhazlinda Abd Rahman

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Advanced urban planning activities are now focusing on *walkability*, looking at how conducive and friendly the urban environment is for walking. With regards to that circumstance, this paper is aimed at highlighting the role of computer-based study in modeling and simulating the dynamical behavior of pedestrians focusing on grouping phenomenon. The results of field observations are reported in this paper for the purpose of modeling and simulation validation.

The existing Distinct Element Method (DEM)-based Crowd Behavior Simulator for Disaster Evacuation (CBS-DE) is used and modified in this study. The modification is made to incorporate grouping behavior by introducing two new terms of interaction force. Validation on the modified CBS-DE was executed in two stages work; (1) looking for a suitable grouping scenario from the observations conducted; and (2) the simulation of a suitable scenario in (1). It shows that the CBS-DE with grouping behavior model can realistically simulate grouping behavior in a crowd.

Keywords: pedestrian behavior, simulation, validation, grouping, walkability

**Emission Inventory for Area Source: Case Study around Majlis Bandaraya Melaka
Bersejarah (MBMB) Region**

**Mohamed Hafiz Md Isa^{a*}, Tee Boon Tuan^b, Muhammad Zulfattah Zakaria^b, Nur Izyan
Zulkafli^b, Ahmad Rivai^b, Ahmad, Juhari Ab Razak^a, Anas Yusuf^b**

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Malaysia

The aim of this study is to investigate the air pollution emission and develop an emission inventory from area source in Majlis Bandaraya Melaka Bersejarah – Historical Melaka City Council (MBMB) region. The area source covers sources that are small in nature but releases air pollutants over a relatively limit area. In this case study, the area sources are residential cooking facilities, school canteens, petrol stations, car repair/garages, restaurants, open burning areas and construction sites. The required data are obtained through questionnaire, interviews and direct observation at particular sites in the region. Other related information were also obtained from validated and published data by government official publication such as Department of Statistics and Department of Environment (DoE). The calculation procedures and identification of emission factors in developing the emission inventory are based on CORINAIR Air Emission Guidebook 2013. The detailed emission data is then being plotted on the city map. The results show that fuel burning equipment from households and restaurants emitted higher air pollutants than other source categories. Overall, annual emission of Nitrogen Oxides (NO_x) was about 100.22 tons/year, Carbon Monoxide (CO) was 748.63 tons/year, Sulphur Oxides (SO_x) was 3.35 tons/year, Non-Methane Volatile Organic Compounds (NMVOC) was 197.10 tons/year and Particulate Matters (PM₁₀) was 100.49 tons/year. The results from the emission inventory identified key sources of air pollution for the city will be the basis for the future Melaka City Clean Air Plan (CAP) development.

Keyword: Emission Inventory; Area Sources; Emission Factor

**Natural Resource Management Strategy Through Integrated Farming Based on Local
Wisdom in Achieving Food Sovereignty
(Case study: Indigenous People of Kasepuhan Ciptagelar, Jawa Barat, Indonesia)**

Astika A.D, Baiturrahmah, Nada F.M.H

Graduate School of Magister Environmental Management, University of Gadjah Mada
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Indonesia is a country that can not be separated with the issue of food. Food issues in Indonesia are caused from agricultural production; high prices of seeds and lack of food subsidies; increased imports; and the imbalance between agriculture and agribusiness. The concept of food sovereignty in Indonesia can be one of strategic solution for solving some food issues and also for reach the abililty to produce the food themselves. The process to reach the aim of food sovereignty is to synergy between food and agriculture policies either by strengthening the local agricultural sector. For realizing local food with high competitiveness can be done from the scope of micro-scale. The indigenous people and local wisdom in it becoming one of the components within the scope of small-scale initial step that can help food security of a society to achieve the sovereignty of a nation. One area that has a good potential of natural resources and it is capable of creating food sovereignty based on local wisdom is Kasepuhan Ciptagelar indigenous people in Halimun Salak National Park, West Java, Indonesia.

Utilization of land that used by the Kasepuhan Ciptagelar Indigenous People are consists of forest, settlement, and agricultural activities such as rice field, mixed garden, animal husbandry, and fisheries. Kasepuhan society Ciptagelar utilize water resources from springs and Cisono River. Local wisdom can be a basic guidelines for the community in the management of natural resources. Until now there are some customs and practices are still maintained the community, especially in the field of agriculture. In rice farming communities have ceremonies at every stage of cultivation until i´n a post harvest. Local wisdom can support the community in realizing the integrated farming system. The form of farming system there is a traditional agriculture. The realization of an integrated farming system will be able to achieve food sovereignty. Form of integrated agricultural system in order to achieve food sovereignty in Kasepuhan Ciptagelar is done by integrating three aspects of agriculture, livestock and fisheries

Keywords: Integrated farming system; local wisdom; food sovereignty

Leveraging Culture And Creativity In Urban Development : The Case of George Town, Penang

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In recent decades, culture and creativity are increasingly being earmarked as catalysts to stimulate local economic development in the urban milieu. Due to failure and decline in their industrial base, many advanced cities in Europe and North America have leveraged upon culture, creativity and creative industries to revitalize and regenerate their urban spaces and places. This phenomenon is also emerging and happening in South East Asian cities like George Town where elements of culture and creativity are currently being identified as the city's driver of local economic growth and development. The promise and potentials of culture, creativity and creative industries in George Town are further endorsed when the city was inscribed into UNESCO's World Heritage List on 7 July 2008 due to the city's unique tangible and intangible cultural heritage. In this regard, the adoption of creative city strategies for George Town is aligned and compatible with heritage strategies whereby both have a common goal to safeguard, preserve and conserve the city's cultural endowments for sustainability. In recognition of that, the existence of George Town Historic City as a heritage quarter/precinct/site has a fundamental role towards preservation of identity and also reconstruction of national, local and also ethnic cultures. Against this backdrop, this paper aims to explore and understand the meaning of culture, creativity and creative industries in George Town, especially with the pervasiveness of internal and external global forces influencing, impacting and shaping the city's urban development. As a city that is undergoing constant social transformations, the element of culture and the forms of cultural industries that exist and emerge are also in a constant state of flux. Thus, understanding, making sense and leveraging upon culture and creativity in a perpetually evolving city like George Town will guide urban managers and policy-makers towards more informed decisions in the urban planning process.

Keywords: Culture, creativity, cultural industries, urban development, George Town

Challenges Of B40 Households In Elevating Income Class Towards Developed Countries In 2020

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In the 11th Malaysia Plan (RMK11), the government has drawn a strategy to develop the economy by increasing the income of household Below 40 (B40) to achieve a developed nation by 2020. Its focus is on the B40 in the MP-11, since one of the requirements to achieve developed nation is that poverty should be reduced to a minimum. B40 class generally refers to the lowest distribution of households by income in Malaysia. There are three sections of income class, namely 20 percent of the highest class (T20), 40 percent of middle class (M40) and 40 percent of the lowest class (B40). Thus, this study attempts to examine the challenges faced by the households especially in urban areas of B40 to increase their revenue up to the M40 class through the case study in Penang. Telephone interview was selected as the research methodology for this study as its primary data. Meanwhile, the secondary data were obtained from the online journals by the official website of the government as well as the official website of internationally relevant research. These data were then analysed using textual analysis. Textual analysis refers to the analysis of texts involving research methods to describe and interpret the message contained within a text; messages are usually recorded by sound or visual recordings. It is also used to describe the content, structure, and function of a text message. From the analysis, the challenges were defined considering internal factors such as attitudes, education and skills as well as external factors including the inability to have an asset, economic and market conditions and poor management inefficiencies on the implementation and monitoring. To overcome the problems mentioned, a number of strategies have been developed such as strengthening the human capital, physical capital and financial capital as well as the economy by increasing the purchasing power of consumer welfare and poverty in better management through GIS monitoring system.

Keywords: B40 Households, Poverty, Developed Country in 2020, Penang

A Food Web Model of Tropical Freshwater and Estuary: How does isotope tells us story?

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Humans are modifying rivers and estuaries by altering the natural morphology of the water bodies, which may lead to trophic food web imbalances. Ecologists have begun measuring river and coastal ecosystem as an attempt to conserve natural ecological conditions and health. Stable isotope analysis has helped from the last two decades in identifying sources of nutrition supporting fisheries' production. Our research will provide a food web model of freshwater and estuarine fishes from Perak River, Malaysia to support the existing food web in this river catchment. Our overall goal is to provide a conceptual model of land use impact on food web, to better preserve overall ecological functioning and integrity of river ecosystems.

Keywords: Food web; Freshwater; Estuary; Stable isotope; Tropical river.

1 AZAM Program Implementation In Penang, Malaysia: The Problem And Improvement to Eradicate Poverty

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1AZAM is a poverty eradication program in Malaysia, which was introduced in 2010. 'AZAM' is the acronym for Akhiri Zaman Miskin (Ending the Era of Poverty). Since its inception, this program has assisted many participants to increase their income. However, there are indications that problems exist in its implementation. This article aims to identify these problems within the context of Penang and subsequently suggest improvements that could be adopted. One hundred 1AZAM program participants in Penang were interviewed in this study. After content analysis of the interviews, that was ascertained that the problems could be divided into two categories, namely issues related to the management information system of participants and secondly issues that involved participants who were receiving assistance. Problems include duplication of participant's names in the system's data, participants could not be reached by telephone and participants being unaware that their names were listed in 1AZAM. Whereas problems related to participants include data on the quantum of assistance received were inaccurate, the participants had not received the assistance and assistance was not properly used by the participants. Thus, improvements need to be implemented by maximizing the use of identity cards to ensure the systematic management of participants information. In addition, the selection of participants should involved parties with full knowledge on the background of the participants, such as village heads and local authorities, in addition to detailed interviews to ensure that only eligible participants are selected to participate in the program besides assistance being allocated based on the respective participant's skills to ensure that aid received would be properly utilized.

Keywords: 1AZAM Program, Penang, eradicate poverty

Emission Inventory of Majlis Bandaraya Melaka Bersejarah: Point Source Evaluation

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Melaka is planning to become Green Technology City State by 2020. One of its green action plans is to identify the emission inventories of the state. The initial plan is to do a pilot study at one of its municipality, Majlis Bandaraya Melaka Bersejarah – Historial Melaka City Council (MBMB). The study is divided into three sources of emission, namely point, area and mobile sources. This paper will discuss the emission inventories by the point sources. Six main green-house gasses (GHG) are evaluated for four sectors of point source involving 46 activities. Data are collected by having survey conducted at factories, incinerators, hotels, power plant and refinery, to determine the emission derived from combustion activities. Other data are provided by Department of Environment (DOE) Melaka extracted from the application forms. Based on emission factor obtained from CORINAIR Air Emission Guidebook 2013 the emission data are calculated using spreadsheet for 1 km square grid and plotted by using MapInfo. The results show that the refinery sector is the main contributor to the overall total of pollutant while both the power plant and the refinery sectors are the leading carbon (CO_x) emission in the municipality. Industries and incinerators sector leads SO_x and PM₁₀ pollutant categories. The same approach can be replicated to include three other municipalities in the state so that the total emission inventory can be calculated and action can be taken to reduce it.

Keywords: Emission Inventory; Point Source; Carbon Emission; Emission Factor.

A Case Study Of West Java CSR Forum Indonesia On Sustainable Development Practices And Partnership (The Success Story Of West Java CSR Forum, Indonesia)

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This study aims to examine and understand the CSR forum by looking at the success of the implementation of West Java CSR Forum in the form of a case study. The study use qualitative approach that are in-depth interviews and focus group. Data were collected through in-depth interviews; 4 respondents from government sector (as the founder and facilitator of the CSR Forum), and 10 respondents from the corporate sector (as the members of the Forum). In addition, focus group discussions were conducted with the community, the beneficiaries of the programme, consisting of opinion leaders and the nongovernmental organization (NGO). In this study, the data processing was carried out using NVivo program managing, analyzing and interpreting of data collected from various sources. With analissi software NVivo qualitative data analysis was performed with data queries, model visualization, graphics - graphics and charts NVivo. This study found that the government is the main driving force and the facilitator in a partnership CSR. Collaboration and stakeholder's involvement are the main activities. Cooperation and community participation should be developed with the orientation towards bottom-up through community empowerment. This study proposes that ongoing dialogue is used as a strategic tool in the communication system to achieve mutual trust and mutual understanding for creating a strong synergy between government, corporate sector and local communities to achieve sustainable development.

Keywords: West Java CSR Forum, qualitative approach, participatory communication, community empowerment, sustainable development

Application of Biodegradable Material in Restoring Degraded Soil System

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Biopolymers have been widely used to control soil degradation and desertification as well as to improve soil moisture especially agriculture. Soil erosion or soil degradation is mainly due to human alterations and natural consequences. Degradation of soil may pose adverse impacts on ecosystem especially the aquatic: nutrients enrichment in river. This study was conducted to address soil degradation and erosion problem using biodegradable materials as a soil stabilizer and fertilizer. Empty fruit bunch (EFB) and seaweed were used as fibre and resin, respectively. High hydrophilic nature of EFB fiber added with high nutrient contents in seaweed are the keys for soil mitigation as well, improves its fertility. Potentially, for soil stabilizer, our studied composite demonstrates excellent hydrophilic characteristics with ~6% of thickness swelling and ~300% water absorption capacity. Moreover, our studied on 104 seaweed species data using Principal Component Analysis (PCA), showed that Phosphorus, Iron, Zinc and Copper presented in brown seaweed are the essential elements needed for plant growth and soil fertility. Hydrophilicity and high minerals content of our studied composite highlight the potential of biodegradable materials (especially from agricultural waste) in restoring our degraded soil system.

Keywords: Soil Erosion, Biodegradable Material, Agricultural Waste, Empty Fruit Bunch (EFB), Seaweed

Evaluating The Cost Benefit Through Efficiency On Non Revenue Water (NRW) Management: A Case Study at Bechah Tendong, Pasir Mas, Kelantan, Malaysia

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Efficiency on non revenue water (NRW) management already had been a worldwide controversial issue. Bechah Tendong faced 62 % of NRW. The research methodology covered the Step Test program which included the customer's information and Zero Pressure Test (ZPT) and also getting Net Nigh Flow (NNF) values for cost benefit analysis. ZPT occurred after the Boundary Valve (BV) closed which deflated the pressure and reached almost zero. The NNF value in site was obtained through the NetBase data which was connected to the in site logger. Minimum Night Flow (MNF) graph was being observed and the NNF data was being analysed. The result showed that ZPT happened in between 4.30 am. NNF in 2014 was recorded as the highest in January with 8.211/s while the lowest was in May with 5.071/s while in 2015 the highest NNF value was recorded at the November with 8.391/s dan the lowest value was in July, 3.421/s. The cost benefit analysis in the 2014 was RM 69,393.02 while in 2015 it was recorded as RM 35,300.63, makes a total saving of RM 104,693.65. The research showed implementing the effective NRW management can give a significant cost saving in order to increase the company capital and revenue and at the same time boosted the effective of water supply to consumer.

Keywords: NNF, MNF, ZPT, Cost Benefit

Eco Innovation Model as A New Mechanism For Optimizing Local Ecosystem Service

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Malaysia is blessed with 140 million years old rain forest which has significant roles in providing ecosystem services to humanity such as nutrient delivery, flood regulation and clean water. Rampant deforestation for development has resulted in loss of biodiversity hence disrupts the function of forest in regulating regional ecosystem. In this paper we will introduce a new concept of development known as eco-innovation which focuses on the local economic development without natural resources destruction. Potentially, this model is capable to integrate local community in applying systematic ways to optimize the utilization of local natural resources for a new wealth creation. In the context of sustainability, this model emphasizes on the prevention, regulation and conservation mechanisms of natural resources as well as, local heritage. It is hope that this new model will give new confidence to the young generation on its potential in generating new wealth, hence reducing the urban migration in future.

Keywords: Eco Innovation; Ecosystem services; New Wealth; Eco Tourism

Land-Use Requirements for Solar Power Plants: Meeting Brunei Darussalam's 2035 Renewable Energy Goal

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One of the objectives of Brunei's National Vision 2035 is to achieve 10% of electricity generation from renewables by 2035, which is equivalent to 9.54 TWh. The implementation of renewable energy (solar photovoltaics or PV, wind turbine) requires a lot of space (land or water) to generate equal amount of energy compared with generation from non-renewable sources (fossil fuels, coal). This issue allows us to look further into the details of land-use requirements or average power density which is the energy flux per unit of horizontal surface area of power plant, in units of W/m². This work investigates the potential renewable energies suitable for Brunei and mapping the amount of land space to be allocated for solar photovoltaics is performed. Finally, a sensitivity analysis of solar PV with respect to levelised cost of electricity, land-use requirements, and average power density is investigated.

Keywords: Renewable energy; Solar energy; Photovoltaics; Average power density; Land-use requirements; Techno-economic analysis; Brunei; ASEAN

Sustainable Development Based on Ecological Concepts

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Environmental catastrophes are mainly due to massive destructions of an ecosystem. The tremendous population growth has increased the heavy utilization of natural resources and transformation of pristine sites into uncontrolled urbanized areas as well as the poverty and health problems. Consequently, the world human populations are going to face extinction if proper measure is not taken. Although economic growth is fairly important for a nation to prosper and progress, however it should also be based on a sustainable development. Therefore ecological concepts should be imposed in any future development. For example, without ecological concepts and unplanned projects, many urban sites will face floods during rainy seasons. On the other hand, intrusion of sea water will be experienced in rivers along the cities. It is a well-known scenario in mega cities such as Jakarta and Bangkok.

Urban landscapes should be covered with vegetations. Green technology with several big canopies that attract several species of birds is utilized. Singapore is an example where the city state is apparently greener than most cities in the world. Engineers and architects should practice ecological concepts for developing the urban structures and buildings. Proper green landscapes should be imposed in urban sites. With high precipitations reaching about 30 mm per month, tropical countries such as Malaysia should look into the hydrological cycle more intensely. Perhaps with proper environmental planning the world can be a safer place for humans.

Encouraging and Incentivising Sustainable Behaviour in Youth

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Among the many factors that influence consumption behavior, social norm is perhaps the most subtle and most pervasive. While some countries/societies around the world are beginning to change their consumption patterns, Bhutan lags behind in sustainable practices and sustainable lifestyle. This is mainly due to the fact that modern lifestyle took over traditional one at a rapid pace and people have not adjusted to the new realities.

The initiative, EGO to ECO Sustainable School Challenge is a school competition aimed at students and schools to re-think their lifestyle and consumption habits, and find ways to consume mindfully with less negative impact to their own lives, the society and the environment. The project involves children as co-creators of the solutions to real-life, every-day problem of unsustainable consumption and lifestyles. By incentivizing sustainable behaviour and habits, the initiative hopes to create a vibrant youth community of lifelong ambassadors of sustainable living.

Through the Challenge, over 150 students from nine schools were taught about sustainable living that then formed the core group in their schools to promote sustainable habits. For the Challenge, school projects addressed themes of waste, water, surrounding, food and buying habits. In addition, students took part in a related challenge to become sustainable ambassadors in their homes and communities.

The results of the Challenge indicate that encouraging sustainable behaviour through competition and incentives can be an effective way to jumpstart sustainable living in individuals, especially youth. Tapping into the interest generated by competition as well as giving short and focused lessons on sustainable lifestyle and consumption was found to be effective intervention to promote sustainable consumption and habits in the nine participating schools in Thimphu, Bhutan.

Keywords: Sustainable behaviour; youth; incentive.

Techno-economic analysis of solar thermal-based renewable in Brunei Darussalam

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Brunei Darussalam's national development plan, named Wawasan 2035, is to be implemented through a variety of different strategies. One of the envisioned strategies is to see at least 10% of the country's total electrical power consumption be supplied through renewable sources. The objective of this vision is to investigate the pattern of the current and future energy consumption for domestic households in Brunei so that plans can be conceived and implemented to accommodate these needs ahead of time, which is aligned with the 5P subtheme of Planet, "Goal 12: Ensure sustainable consumption and production patterns". Eventually, these visions should be able to help mitigate costs and is feasible to be used by the nations which relates to the Prosperity theme, for "Goal 7: Ensure access to affordable, reliable and modern energy for all."

Previous research has shown that water heating contributes to 9% of total power consumption in Bruneian households. This percentage power consumption could be reduced if a renewable water heating option could be provided, for example one based on solar thermal heating. A shift from electrical water heating systems to a renewable system is disincentivised by the fact that, amongst ASEAN countries, Brunei has the lowest power tariff valued at BND 0.01 per kWh for the first 600kWh per month. The low cost of electricity considerably extends the financial 'break-even' point for the renewable system from the perspective of return on investment (ROI).

This work outlines a techno-economic analysis of the wide-spread adoption of flat plate solar thermal water heating systems in perumahan (housing schemes) in Brunei. Sensitivity analyses were performed on household hot water consumption and power consumption to determine the break-even point for both open-loop and closed-loop water heater systems. A comparison of the system payback time based on electrical power tariffs from other ASEAN countries, including Malaysia, Singapore, Indonesia and Thailand, is also investigated.

Keywords Renewable energy; Solar energy; Solar water heater; Techno-economic analysis; Domestic tariff; Perumahan; Brunei; ASEAN

Sustainable Management For Flood Loss Reduction: A Case Study of the December 2014 Big Flood in Pahang

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The December 2014 big flood in Pahang witnessed more than 50,000 people afflicted in nine districts all over Pahang State. As a result of this disaster, Government flood relief agencies encountered major obstacles and problems, especially in rescue and relief operations. This paper aims to assess the sustainable management of floods used by government agencies for preparedness, warning, rescue, transfer, flood relief, evacuation centers and recovery to reduce flood impacts among victims at several locations in the Pahang River Basin, in Temerloh, Pekan, Raub, and Mentakab. A questionnaire-based cross sectional study was conducted by convenience sampling at the four locations. The questionnaire was divided into four parts: Part A collected the respondents' demographic details. Part B was the perception and characteristics of flood. Meanwhile, Part C was on total flood losses and Part D was on flood relief. The total number of respondents involved was 100. The data was analyzed by using SPSS software. Results indicate the response of the sustainable management of flood victims in terms of preparedness, warning, rescue, transfer, flood relief, evacuation centers and recovery during the December 2014 flood is far from effective. As a conclusion, sustainable management of flood need to be improved substantially to reduce suffering and losses.

Keywords: Floods Management, Standard Operating Procedure (SOP), flood rescue, flood relief, flood evacuation

**Environmental Degradation of River Waters As The Effect of Industrial Activity in
Subdistrict Banguntapan, Bantul, Daerah Istimewa Yogyakarta**

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This study aim to analyse the environmental degradation of river waters due to industrial activities. There are some industrial activity that located on the riverside, which contribute to the water resource for agricultural activities such as ricefiels and ponds. To identify the kinds of environmental degradation was used the data of water quality. Thus, the data also used for analyse Pollution Index (PI). The result showed that pollution were occured in several water samples, that are in TSS, DO, and COD parameters. The exceed value of water quality parameter derive the water quality status that calculate by using PI. The analysis obtained that three point of water sampling station were in moderately polluted status, that were in Point 2 where there are concrete industry and tempeh industry. The second was Point 4, where the pollution caused by domestic waste. Meanwhile, at Point 5 the degradation was caused by industrial activity, domestic waste, and agriculture.

Keywords: Pollution index; Water quality; River waters management.

Artificial Neural Network Modeling of Rheological Parameters and Compressive Self-Compacting Concrete with Zeolite Mineral as Partial Replacement for Cement

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One of the problems arising from Self Compacting Concrete (SCC) is the segregation of coarse material also known as bleeding of concrete. Segregation in concrete may lead to decrease in strength or worst, may lead to honeycomb effect which results to collapse if not properly threated. This study is concerned to partially replnacing cement by natural zeolite mineral to increase the viscosity of SCC. Also, this study created Artificial Neural Network (ANN) models to predict rheological properties and compressive strength of SCC with added natural zeolite mineral. All models yielded outstanding results in terms of Pearson Correlation R test. Simulation indicated that all models showed superior predicting ability. Natural Zeolite (NZ) mineral has no significant effect in the compressive strength of mixtures containing higher moisture content. Zeolite also increased the viscosity of the mixture offering better paste performance in holding granular aggregates. Adding zeolite mineral in SCC reduced the effect of segregation by as much as 25% in mixtures with very high water to cement ratio.

Keywords: artificial neural network, natural zeolite mineral. self-compacting concrete (SCC), superplastizicer (SP)

Water Quality Status of Bili-Bili Reservoir, Gowa, South Sulawesi, Based on Pollution Index

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Bili-bili reservoir has an important role as a main source of water to meet the needs of people in Gowa, Makassar, and some other areas. Activities on the Jeneberang river, like agriculture, settlement, tourism, and sand quarrying along the major rivers in the watershed. This study has two main objectives, to analyze the impact of these activities on water quality in the Bili-Bili reservoir and to determine the distribution of activities that could potentially be a pollutant. This study also showed the distribution of activity that could potentially contaminate the water in spatially description. The results of the analysis will be the materials on environmental management Jeneberang Watershed, especially in the Bili-bili Reservoir. The results showed that contamination occurred in the waters. Several water quality parameters exceeded the quality standard, TSS, phosphate, nitrate, ammonia, and oil content. The calculation Pollution Index for eight samples showed the values were in the range $1,0 < PI < 5,0$ namely status moderately polluted water.

Keywords: Pollution; water quality; Bili-bili reservoir.

Role of Ecosystem Services in Catchment Management: A Snapshot

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The state of Kelantan is rich with natural rainforest and its economy is mainly driven by agriculture. Rampant land use activities have had tremendous impact on terrestrial ecosystem such as soil erosion and land degradation. The implications of these activities caused water quality deterioration and sedimentation of the river networks. Intensification of sedimentation process may cause shallower river, thus, vulnerable to natural hazard (i.e. climate change, floods). This paper provides an overview of the impact of soil erosion caused by land use activities within tropical rainforest catchments in Kelantan rivers. The continuous soil erosion has led to massive sedimentation in Kelantan rivers, such deterioration reflects inefficiency of ecosystem services – Forest, critical for regional biogeochemical processes, water quality and flood regulation. Essentially, such understanding will help stakeholders to come out with better strategies in restoring ecosystem services of Kelantan watershed.

Keywords: ecosystem services, soil erosion, sediments, catchment, anthropogenic activities

A Review on the Impacts of School Grounds Design on Children's Performances and Well-being

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Schools provide the opportunities for children to interact with the school environment through movement, investigation, concentration and social interaction. Recent years, have seen a growing number of research discussing the roles of school grounds in promoting children's development – physically, socially and cognitively; children's health; and school grounds as potential sites for children's environmental or place-based learning and instruction. Based on systematic review, this paper aims to highlight the significance of school grounds design on children's performances and well being from different disciplines namely, health, preventive medicine, childhood education, children's geographies, environmental psychology, architecture and landscape architecture. The review looks at two aspects including: (1) the research concerns of each discipline, and (2) the aspects of school grounds design that have impacts on children's performances and well-being. The review revealed that different disciplines view the significance of school grounds from different perspective. Whereas, the aspects of school grounds design included the physical environment (i.e., size and design of school grounds, provision of sporting facilities, green school grounds), socio-economic position (i.e., recess duration, teacher's encouragement), and psychological (i.e., children's needs and preferences). This paper gives insights on the design strategies that could be implemented in improving the quality of school grounds environment for children's performances, well-being and environmental learning.

Keywords: School grounds; Children's performances; Health and well-being; Environmental learning.

POSTER ABSTRACT

Reproductive and Mental Health Problems among Women who Use Illicit Psychotropic Substances in Malaysia

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Introduction: Women who use illicit psychotropic substances are inevitably exposed to various social, economic and maternal-health problems. This study investigated the reproductive and mental health problems in a cohort of treatment-seeking female drug users in Malaysia.

Method: A total of 202 female drug dependents from a rehabilitation institution in Kelantan participated in this self-report behavioural survey.

Results: The majority were Malays, with a mean age of 29.47 years (SD=8.5). Two-thirds are married (67%, n=136/202), 56% (n=114/202) have 9 years of education, and 40% (n=81/202) have previous incarceration, and custodial child-birth history (7%, n=15/202). Fifty-nine percent (n=120/202) have nine years history of illicit drug use, while the majority self-reported using amphetamine-type-stimulants (ATS) (96%, n=195/202) and opiates (54%, n=109/202), prior to their detention. Forty-three percent (n=86/202) self-reported using illicit substances during pregnancy, breast-feeding (22%, n=44/202), and cohabitation (84%, n=170/202). Three-fifth (60%. n=121/202) of the respondents have limited knowledge on sexually-transmitted-diseases (STD), and female contraceptive use (77%, n=156/202). While, sixty-three percent (n=128/202) have experienced reproductive health problems, 44% (n=88/202) have never been screened for reproductive health problems, and half (51%, n=102/202) reported experiencing menstrual cycle disorder. Some of the commonly reported psychological symptoms include sadness (91%, n=184/202), anxiety (87%), insomnia (71%), depression (64%), and suicidal tendency (19%). Only 12% (n=24/202) have previous history of psychiatric treatment.

Conclusion: Our findings indicate that the use of illicit substances can impact women in various circumstances. More gender-sensitive treatment policies are required to promote and facilitate the entry of women who are drug users into reproductive and mental health-care services.

Keywords: Reproductive health, Women drug users, ATS, Malaysia.

Thalassaemia Patients' Views Regarding Use Of Conventional Therapies: A Qualitative Investigations

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Background: Thalassaemia is a chronic health disorder that impairs the psychological and physical wellbeing of the patients. These patients are intensively treated with the conventional treatment from cradle until to the grave. This study aims to explore the perceptions of thalassaemia patients regarding the effectiveness of conventional therapies in Thalassaemia care.

Method: A qualitative method was used where purposive and theoretical samplings were combined to explore the issues related to the perceptions towards the effectiveness of conventional therapies among thalassaemia patients. A total of 21 consented patients were recruited from Thalassaemia Society Kedah, Malaysia. Patients were from the two major ethnic groups in Malaysia namely Malay and Chinese. All interviews were conducted in Bahasa Malaysia (National language of Malaysia) and were translated into English for thematic content analysis.

Results: Nearly all thalassaemia patients reported to use conventional treatment to treat and reduce the illness of their disease. Patients perceived conventional therapies as effective to reduce amount of ferritin and to increase the haemoglobin levels. Detailed studies have been conducted on the use of conventional therapies by highly sophisticated state and clinically proven to be effective compared to the effects of traditional medicine despite the higher cost of the former. Few patients reported not to comply with their treatments due to fear of infection after blood transfusion, fear of surgery and fear of organ failure due to prolong treatment.

Conclusions: In conclusion, patients showed positive views about the conventional therapies for thalassaemia. However more intensive counseling and education to is important to comply with the treatment. Further research is required with patients who have decided to abstain from the conventional therapies for thalassaemia treatment.

Awareness and attitudes towards sustainable development amongst higher education students in Penang, Malaysia

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The role of youth in sustainable development decision-making and the implementation of sustainability programmes are critical elements to the long-term success of Agenda 21 and national sustainable agendas. Thus, advancing the role of youth and actively involving them in national sustainable agendas in the context of environmental protection and the promotion of economic and social development are crucially needed. However, there is inadequate information available about Malaysian youth's awareness and attitudes with regard to this matter.

The aim of this study is to determine the level of awareness and attitudes towards sustainable development amongst Malaysian youth. As an exploratory study, a survey was conducted in 2015 and 295 respondents from selected public and private higher education students in the state of Penang. This study has shown that the awareness of respondents about the concept and issues of sustainable development were well developed however, differed over semantics and what sustainable development encompasses. The survey also revealed that respondents were highly concerned about sustainability and were willing to practice more sustainable lifestyles. This study hopes to contribute as background information that will reflect on national sustainable development strategies

Keywords: Sustainable Development, Higher Education, Youth, Awareness, Attitudes, Malaysia, Education for Sustainable Development.

WUSA – World University Sustainability Assessment

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Novelty and Inventiveness

- This product is unique as it utilizes computer based processing, tangible quality time measurement.

Applicability of the Invention/Innovation

- The outcomes from this WUSA will provide feedback and guidance to all practitioners to build sustainability content in their existing courses or designing and managing new research and community-oriented projects. Together, the results may be used either for rating or ranking sustainability performance, though we have used them only for rating at this stage.

Status of Invention/Innovation

- The invention is completed and has been applied to identify the percentage of sustainability content in USM programme course.

Market Potential

- The system can be introduced to UNESCO, UNDESA, Sustainability Assessment related projects.

Intellectual Property

- The system has received copyright from Innovations and Commercialization Office.

DRM-SD: A Vulnerability and Adaptation Approach in Padang Terap District, Kedah

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Flood in Malaysia has become a common incidence due to global warming and climate change. In certain states, such as Kedah, Perlis and Johor, flood disasters have become an annual occurrence with reported losses amounting to more than RM1 billion. The amount spent on assisting the flood victims have also reached more than RM45 million. The communities in the district of Padang Terap, Kedah, were not used to flood events even though they had been living in the area for generations. Since 2000, flood in this area had become a common occurrence as a result of the increased intensity and frequency of rain due to global warming and climate change. Disaster Risk Management for Sustainable Development (DRM-SD) is developed to enhance the capacity of multiple target groups to minimize the risk posed by natural hazards. This study is to develop a demographic profile of the Padang Terap District community involved in flood and identify the needs of the community affected by flood. In conclusion, the project was able to identify the *mukims* most affected by floods. In addition, the needs of the population during and after flood occurrence were also determined. The integrated Disaster Risk Management for Sustainable Development (DRM-SD) in this project can clearly address the vulnerability and adaptation aspects of the communities and relevant agencies. The steps that needed to be done by the community were identified and the guidelines were communicated to the communities especially the local leaders. This will certainly assist the state and federal governments to act in the right manner if flooding occurs again in the district of Padang Terap, Kedah.

Keywords: Disaster Risk Management for Sustainable Development (DRM-SD), vulnerability, adaptation, flood, Kuala Nerang

EMS – E-Marking System

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Novelty and Inventiveness

- This product can be used to help educational institution to mark student's assignment, project report etc. In mere second.

Applicability of the Invention/Innovation

- The system can be used to produce marks for student's assignment and project reports.
- Answer sheet is uploaded to the system to guide the marking process. To check the marks, the softcopy of assignment or project reports (in .pdf format) is uploaded to the system. Once it is uploaded successfully, the system will generate the marks in seconds.
- User can also use the system to check for plagiarism percentage between students.

Status of Invention/Innovation

- The invention is completed and has been tested to student's assignment and project reports.

Market Potential

- The system can be introduced to all universities or schools worldwide.

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