

INTERNATIONAL CONFERENCE ON ENVIRONMENTAL SCIENCE AND SUSTAINABLE DEVELOPMENT

STRENGTHENING SUSTAINABLE DEVELOPMENT GOALS IN SOUTHEAST ASIA



ICESSD 2019

Sari Pacific Hotel - Jakarta, Indonesia
22-23 October 2019

School of Environmental Science
Universitas Indonesia



ABOUT

International Conference on Environmental Science and Sustainable Development

The world is facing various environmental problems that threaten the sustainability of human life and ecosystems on earth. Environmental problems are dynamics and complex that needs the analytical and decision making instruments which can accommodate these characteristics. Environmental science is an interdisciplinary science that delivered to understand complex and dynamic interactions in environmental systems. Studies in Environmental Sciences involves various fields of science which enable the formulation of efforts to solve environmental problems in a holistic and comprehensive way for its sustainability. Sustainable development is a dynamic process in environmental science that includes the process of utilizing natural resources, the direction of investment, the orientation of technological development and institutional change to address the environmental problems.

School of Environmental Science (SIL) Universitas Indonesia (UI) has great attention to sustainable development issues both at regional and global levels. After having successful in conducting Joint The 7th Southeast Asian (SEA) Studies Symposium between School of Environmental Science Universitas Indonesia, Project Southeast Asia University of Oxford and Indonesian Environmental Scientist Association (IESA) on 22-24 March 2018, and The 3rd International Conference Series on Life Cycle Assessment (ICSolCA) between School of Environmental Science Universitas Indonesia and Indonesia Life Cycle Assessment Network (ILCAN) on 24-25 October 2018.

This year, School of Environmental Science (SIL) Universitas Indonesia (UI) in collaboration with Center for Southeast Asian Studies (CSEAS) Kyoto University and Graduate School of Asian and African Area Studies (ASAFAS) Kyoto University, will present The International Conference on Environmental Science and Sustainable Development (ICESSD) on 22-23 October 2019. The International Conference on Environmental Science and Sustainable Development (ICESSD) 2019 will be providing a forum for academia, government, civil society, and the private sector to participate to share their research and technology advancement towards The Strengthening of Sustainable Development Goals (SDGs) in Southeast Asia.





ABOUT

School of Environmental Science

Universitas Indonesia

During this time the activities of the University of Indonesia in the environmental field were carried out based on the agreement between the State Minister for the Environment of the Republic of Indonesia and the Chancellor of the University of Indonesia signed on June 7, 1980. Because of the need for experts in the environmental field who increasingly demanded scientific handling, then in the 1982 academic year / 83 Universitas Indonesia held a Postgraduate Program in Environmental Sciences with enthusiasm in the field of Human Ecology which was inaugurated by the Chancellor of UI Prof. Dr. Nugroho Notosusanto on August 25, 1982. This program was originally managed by the Faculty of Mathematics and Natural Sciences, University of Indonesia, then moved under the newly formed age at the beginning of 1983. In 1989, the Study Program opened three specificities, namely Human Ecology, Environmental Planning and Environmental Protection. Since UI's transition to a State-Owned Legal Entity (BHMN), in April 2000 all monodisciplinary Study Programs turned to the Faculty, while a multidisciplinary / study Study Program (including PSIL) remained under the management of the UI Postgraduate Program in accordance with PP No. 60/1999. Since 2010 Universitas Indonesia has held an Environmental Science Study Program with 3 (three) specializations, namely: Industrial Environmental Management (MLI), Sustainable Development Planning (PPB), and Environmental Protection (PL) as a formal education pathway, to equip scholars with expertise environmental science.

The Environmental Sciences Study Program continues to grow rapidly, both in terms of the number of students in the master's and doctoral programs, as well as in terms of the quality of achievement. After 35 years of existence, PSIL officially changed, increasing its status to school. The School of Environmental Sciences (SIL) was officially formed on July 1, 2016 based on the Rector's Decree No.1092 / SK / R / UI / 2016 concerning the Opening of the University of Indonesia's School of Environmental Sciences. The School of Environmental Sciences became the first school to stand at the University of Indonesia and became the first school to focus on a multidisciplinary approach to Environmental Sciences in Indonesia.

Based on the Anggaran Rumah Tangga (ART) in the Regulation of the University of Indonesia Trustee No.004 /Regulation / MWA-UI / 201 stated that schools are equivalent to faculty. Understanding Schools according to ART UI is a set of supporting resources that organizes and manages multi education programs and / or inter/trans disciplines at the master and doctoral levels in certain scientific groups that cannot be developed in the faculty. The basic consideration of the formation of SIL is the development of environmental science in order to support the vision of the University of Indonesia as a world class research university. Currently SIL oversees two study programs, namely: Environmental Science Study Program and Environmental Sciences Doctoral Program. In its development plan, SIL will form several new study programs as an embodiment to answer the challenges of the future development of environmental science and to answer the needs of environmental experts.



Vision

The Vision of the School of Environmental Sciences is to become a center of excellence and innovation in the field of environmental science studies oriented to sustainable development.

Mission

1. To realize the vision that has been set, the mission run by the School of Environmental Sciences is:
2. Educating human resources to have constructive and innovative analytical and thinking power in environmental science studies with three main pillars of environment, economy and social;
3. Developing the role and professionalism of human resources with critical reasoning abilities and having practical skills in the field of environmental science have an interdisciplinary approach to science, technology and socio-culture;
4. Developing research in the field of environmental science studies with national and international standards capable of delivering Indonesia to a global era;
5. Providing devotion to the community in the form of developing science and technology, models, and solving various problems.

Aim

1. The purpose of organizing the Environmental Sciences Study Program is:
2. Producing masters in the field of environmental sciences with high academic ability and integrity in comprehensively analyzing and understanding complex environmental issues by interpreting environmental, economic and social aspects;
3. Produce masters in the field of environmental science studies that have high competitiveness in the national, regional and international labor market;
4. Producing high-quality strategic research and publications in the field of environmental science studies by academics;
5. Increase the contribution of thought through community service to help find solutions to environmental problems faced by the community both locally and globally.

Target

1. Make experts and environmental professionals to be more sensitive and aware of the various multidimensional aspects of various human intervention or manipulation of their environment, in the lattice of thought of sustainable development;
2. Educate participants, both those from teachers, researchers, workers and stakeholders and to be able to identify various environmental problems, and develop priorities that are appropriate for various alternative solutions



DIRECTOR **School of Environmental Science** **Universitas Indonesia**



I am very delighted to be here today for the opening of this conference. Let me take the opportunity to welcome you to University Indonesia and to Jakarta, Indonesia.

This conference provides a very unique opportunity for all of us because of its scope; it has attracted delegates from all over the world; people with wide-ranging knowledge on the issue of Environmental problems are dynamics and complex that needs the analytical and decision making instruments which can accommodate these characteristics. Environmental science is an interdisciplinary science that delivered to understand complex and dynamic interactions in environmental systems. Studies in Environmental Sciences involves various fields of science which enable the formulation of efforts to solve environmental problems in a holistic and comprehensive way for its sustainability. Sustainable development is a dynamic process in environmental science that includes the process of utilizing natural resources, the direction of investment, the orientation of technological development and institutional change to address the environmental problems.

Universitas Indonesia, especially the School of Environmental Science, has been actively engaged in sustainable development initiatives, particularly on research and education. We have the cluster research on Sustainable Development both in magister and doctoral degree. There are almost five hundred thesis and dissertations in our school with the theme of sustainable development. In many aspects of research, including: economic, agricultural, forestry, waste management, water management, environmental protection, urban and city planning, disaster management, climate change, education, and social sustainability. The results of the research has been benefited as an input to the government policy, the community program, and the private sector program.

The embryo of the School of Environmental Science at the University of Indonesia goes back to 1982 when the Programme Study of Environmental Science was established in response to the need in Indonesia for expertise in the environmental field. Our vision was for this Programme to become the center of education and research in environmental issues, within the broader vision of the University as the 'World Class Research University'. Our missions



are to create graduates (with Masters and Doctorate degrees) who hold, not only academic competency in the environmental sciences, but importantly, a sense of responsibility and duty to the needs of society and our Country with regards to environmental issues, most evidently sustainable development.

Until this academic year, we have graduated a total of 1012 students at the Masters level. Our Doctorate programme, in its 18th year, has graduated 152 Doctors. A large number of them hold strategic positions within Universities in Indonesia, Government bodies, as well as in the private sector. This academic year we have 166 Master students and 57 Doctoral degree students.

There are some challenges in sustainable development. Among other is how to measure our progress in getting the SDGs. How to participate to share their research and technology advancement towards The Strengthening of Sustainable Development Goals (SDGs) in Southeast Asia? That is the theme of this conference today, to do The Strengthening of Sustainable Development Goals (SDGs) in Southeast Asia. We hope that the valuable work and discussion during this conference will lead to the initiatives and innovations in getting the Strengthening sustainable development goals.

Best Regards. Emil Budianto



CONFERENCE DIRECTOR

International Conference on Environmental Science and Sustainable Development



School of Environmental Science Universitas Indonesia is proud to welcome you to The International Conference on Environmental Science and Sustainable Development (ICESSD).

Southeast Asia is a vitally important region of the world, geographically and culturally. Southeast Asia covers about 4.5 million km², which is 10.5% of Asia or 3% of earth's total land area. Its total population is more than 641 million, about 8.5% of the world's population (Population of Asia, 2018). The region is culturally and ethnically diverse, with hundreds of languages spoken by different ethnic groups. ASEAN members are currently at various stages in their pursuit of sustainable development. The Sustainable Development Goals (SDGs) achievement in Southeast Asian countries are also in various level. Some of the SEA countries are still struggling with the no poverty, zero hunger, good health and well-being, quality education, clean water and sanitation, and affordable and clean energy goals. SEA countries are also facing the high rate of unemployment due to the low economic growth, lack of infrastructure-industry and innovation and inequality. SEA countries are trying to achieve the sustainable cities and communities, responsible consumption and production, more resilience to the climate change, conserve of live below water and life on land, strong peace, justice, and institutions. Those goals are interdependent, as well as the interdependent of the countries among SEA region.

School of Environmental Science Universitas Indonesia seeks to contribute to solutions to these issues by providing this conference as a platform for the dissemination, discussion, and debate of ideas. Through activities like the conference, the SES UI acts as a focal point for academic and research activity, bringing together many of the most distinguished scholars in the field of Southeast Asian studies, together with the best and brightest new academic talent, for dissemination of knowledge about the achievement of SDGs in Southeast Asian countries. It also aims to address and offer inputs into important contemporary issues facing SEA and making partnerships for the Goals. That is why we entitle this conference Strengthening Sustainable Development Goals in Southeast Asia.

We hope you will enjoy the conference. Best Regards. Hayati Sari Hasibuan





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International Conference on Environmental Science and Sustainable Development



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KEYNOTE SPEAKER



Raldi Hendro Koestoer, Ph.D.

School of Environmental Science
Universitas Indonesia
Indonesia

Raldi Hendro Koestoer is a Professor of Regional-Environmental Science, in Jakarta, Indonesia. He is currently as Principal, Senior Policy Analyst in The Coordinating Ministry of Economic Affairs, Republic of Indonesia. In the International level, He is an Alternate Senior Official Indonesia for Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) and an Alternate Senior Official Indonesia for Indonesia-Malaysia-Thailand Growth Triangle (IMT GT). In 2016-2018, He was an Alternate Senior Official Indonesia for Master Plan on ASEAN Connectivity (MPAC). In addition to his professional service to the Government of Indonesia, he is also a senior lecturer in Spatial Planning and Sustainable Development in School of Environmental Sciences, University of Indonesia. He earned his Ph. D in Environmental Planning from Griffith University, Australia in 1992 and his interest research is in Spatial Planning and Development, and also in Sustainability issues, especially those related to the development in Indonesia and Southeast Asia. He has authored 17 books, including "The Green TOD", 2016, published by UI Press.

KEYNOTE SPEAKER



Professor Yoko Hayami
Center for Southeast Asian Studies
Kyoto University
Japan

Yoko Hayami is a professor at the Center for Southeast Asian Studies (CSEAS), Kyoto University. Hayami has carried out long-term research on the Karen people in Thailand and Myanmar, with a focus on religious dynamics, ethnicity, gender, and family. His research interests care in Southeast Asia, family, and gender in Southeast Asia, Ethnic minorities and religion in mainland Southeast Asia, and Hill-dwelling minorities in mainland Southeast Asia.

KEYNOTE SPEAKER



Professor Ben White

Agrarian and Environmental Studies
International Institute of Social Studies Netherlands
Netherlands

Ben White (born in Harrow, England 1946) is Emeritus Professor of Rural Sociology at the International Institute of Social Studies, The Hague. From 1997-2006 he was also Professor Extraordinary in Social Sciences, University of Amsterdam. He has been involved in research in Indonesia since the early 1970s, with special focus on agrarian studies and the history and anthropology of childhood and youth. He is a founder member of the Emancipatory Rural Politics Initiative (www.iss.nl/erpi). He has been associated with the interdisciplinary development studies journal *Development and Change* for 25 years as Member (1992- 2008) and Chair (1996-2008) of the Editorial Board, and Advisory Board member (2008-present). He is also Editorial Board member of the *Canadian Journal of Development Studies*.

KEYNOTE SPEAKER



Professor Jeon Je Seong

Korean Institute for Southeast Asian Studies
Chonbuk National University
South Korea

Jeon Je Seong is a professor of political science at Department of Political Science & Diplomacy, Chonbuk National University. He used to be a vice president of KASEAS (Korean Association of Southeast Asian Studies), and an executive of KISEAS (Korean Institute of Southeast Asian Studies). He got Ph. D from Seoul National University, Korea in 2002 with the dissertation on "Labor Politics in Democratizing Indonesia: The Collapse of State-Corporatism and the Rise of Working-Class Leadership". He is an experienced political scientist on Indonesian society, and has done many studies on Indonesia, and the relation between Indonesia and Korea, such as newly born trade unions and industrial relations at the time of reform in Indonesia, and Korean companies at the Malay world. He is an author of *Era Emas Hubungan Indonesia-Korea*. Jakarta: Penerbit Buku Kompas 2014, *40 Tahun Hubungan Indonesia-Korea Selatan*. Yogyakarta: INAKOS & Universitas Gadjah Mada, 2013, *Korea in Indonesia, Indonesia in Korea: Cultural Exchange through Investment and Migration*. Seoul: Imagine. 2013, *Korean Diplomacy and State Interest in the 21st Century*. Seoul: Sahoipyongron, 2011. *State Violence and Human Rights in Asia*. Gwangju: The May 18 Memorial Foundation. *Beyond Crisis, Toward Cooperation: Widening and Deepening Regional Cooperation in Southeast Asia*. Seoul: Imagine. 2008, *Almanac on East Asian Solidarity Movement Organizations in Korea*. Seoul: Arche. 2006, *Indonesian NGO Report*, Seoul: Resource Center for Asian NGOs, SungGongHoe University. 2002.

KEYNOTE SPEAKER



Jeetendra Kumar

Managing Director Asia of Pitney Bowes Software
India

Jeetendra Kumar (JK) has been worked in Pitney Bowes more than a decade. At the current role he is a leader of Software and Data Business of Pitney Bowes for Asia Region. JK has been in IT industries for 24 years, working in variety of technical, delivery, sales and alliances roles. He is alumni from Indian Institute of Technology, Delhi, as well as Nanyang Business School, Singapore. He also finished Executive Education Program from Melbourne Business School. His passion is Technology itself as he work for many transformation project and help many customers in the region for various aspect include Location Analytic (GIS) technology. He has diverse industry background ranging from Telecom, Financial Services, Insurance, Energy & Utilities, Public Sector, National Post, Logistics & Supply Chain, Mining, Oil & Gas etc. JK is Goal Oriented person, and Team Player with Strong Leadership Skill, and he is open-minded person and keen to explore how the technologies can help people in many aspects including Environment Sustainability. As he is believe, Environment Sustainable Development is one fundamental element to ensure nation and people embrace of better life now and in the future. So he is looking forward how this also happen in Indonesia as well as in the region.

KEYNOTE SPEAKER



Dr. Takuro Furusawa

Graduate School of Asian and African Area Studies
Kyoto University
Japan

Takuro Furusawa is an associate professor of Graduate School of Asian and African Area Studies (ASAFAS), Kyoto University. He graduated from School of Medicine, The University of Tokyo, obtaining Ph.D. in Health Science. He served as a project researcher of the Integrated Research System for Sustainability Science (IR3S), assistant professor of the Division for International Relations, and associate professor of the Network for Education and Research on Asia, The University of Tokyo. His research interests include Human Ecology, International Health, and Area Studies. He has been conducting fieldworks in the Solomon Islands, Papua New Guinea, and Bangladesh. He is studying environmental problems and health problems from the viewpoints of human evolution and adaptation.

KEYNOTE SPEAKER



Professor Nadarajah Manickam
School of Humanities and Social Sciences
Xavier University Bhubaneswar
India

Nadarajah Manickam (Nat) started his work life around the 1980s in the squatters of Malaysia (Kuala Lumpur) and India (Chennai). Since then, he has worked in many capacities and positions in a number of organizations. His work has involved a number of inter-connected initiatives. It is a journey that has taken him through consumerism, environmentalism, media-ted realities, philanthropy, education (including pre-school), people-oriented design development, institution building, software development, process management, strategic planning, urbanism, agroecology, indigeneity, alternative healing practices, inter-faith actions, sustainability, and spirituality. From 2013, Nat has been involved in researching, designing and setting up of a virtual institution to promote biodiversity-based ecological agriculture (or agroecology). The International People's Agroecology Multiversity (IPAM) articulates a research-learning-action orientation and is based on 5 platforms i.e research, learning, action, knowledge, and community-building. The aim of IPAM is to nurture and promote the principles and practices of agroecology and the universal concerns of small agricultural producers (agricultural workers, fisherfolk and indigenous peoples). The regional group, Pesticide Action Network Asia Pacific (PANAP), is behind the development of IPAM. He is presently working towards taking up the responsibility of setting up an innovative, inter-faith and transdisciplinary School of Humanities and Social Sciences (XHS) at the Xavier University Bhubaneswar (XUB), a Jesuit university located in India. As part of this initiative, he will head the Centre for Compassion Studies in 2018. He is Chair Professor, Xavier Centre for Humanities and Compassion Studies. Nat is a sociologist by training and obtained his Ph.D. from Jawaharlal Nehru University (JNU), New Delhi. Nat hangs out in Malaysia and India.

KEYNOTE SPEAKER



Professor Kosuke Mizuno

School of Environmental Science
Universitas Indonesia
Indonesia

Kosuke Mizuno is a professor of development studies at School of Environmental Science, University of Indonesia. He is also an emeritus professor Center for Southeast Asian Studies (CSEAS), Kyoto University, and a visiting professor at the Research Institute for Humanity and Nature (RIHN). He has studied on people's organizations, institutions, and economic development in democratizing Indonesia based on extensive field works. His publication includes Rural Industrialization in Indonesia, a Study on Community-based Weaving Industry in West Java (Institute of Developing Economies) in 1996, Populism in Asia (National University of Singapore Press, or NUS Press) in 2009, Direktori Serikat Pekerja/ Serikat Buruh Indonesia. Bandung, Indonesia: (Directory of Trade Unions in Indonesia), (Akatiga Pusat Analisis Social, Bandung), 2007. Catastrophe and Regeneration in Indonesia's Peatlands: Ecology, Economy and Society, (NUS Press) in 2016, Sustainability and Crisis at the Village: Agroforestry in West Java, Indonesia. (the Talun-Huma system and rural social economy) (UGM Press) in 2016. He got Ph.D in agricultural economics at Kyoto University in 1994. He used to be a researcher at Institute of Developing Economies, Tokyo (1978-1996), and an associate professor at CSEAS since 1996, and a professor at CSEAS since 2003. He was the Director of CSEAS for 2006 to 2010. Currently he is the leader of research project of RIHN titled 'Toward the Regeneration of Tropical Peatland Societies: Building International Research Network on Integrated Peatland Management', interdisciplinary study based on field works in Riau Province, Indonesia to conduct the rewetting and paludiculture in order to prevent the peatland fire, and to regenerate sustainable peatland society.

KEYNOTE SPEAKER



Professor Emil Salim

School of Environmental Science
Universitas Indonesia
Indonesia

Emil Salim (born in Lahat, South Sumatra, Indonesia, 8 June 1930) is an Indonesian economist, former politician, and environmental expert. He is professor at the Faculty of Economics, Universitas Indonesia and School of Environmental Science, Universitas Indonesia. He is the founding fathers of Environmental Science Program Study, School of Environmental Science, Universitas Indonesia. He graduated from the Faculty of Economics of the University of Indonesia in 1959. He obtained a Ph.D. in Economics from the University of California, Berkeley, and returned to Indonesia to a teaching position at the Faculty of Economics, Universitas Indonesia in 1964. He became one of the well-known groups of 'Berkeley Mafia' economic advisers, working closely with Professor Widjojo Nitisastro. In 1977 he was appointed to the position of professor of economic development at the University of Indonesia. He is Minister of State for Development Supervision and the Environment (1978-1983), and also as Minister of State for Population and the Environment (1983-1993). He is first state Minister of Environment, Republic of Indonesia. He has chaired the Foundation for Sustainable Development and the Kehati Foundation and co-chaired the United States-Indonesia Society. He is a member of the Association of Indonesian Moslem Intellectuals. He serves as a member of the Presidential Advisory Council, Since 2007-now.



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REVIEWER



Professor Misri Gozan

Faculty of Engineering
Universitas Indonesia
Indonesia

Misri Gozan, Head of Subdirector at Business Incubator and Science Park UI. He is an IABEE Executive Committee Chairman (2018-now); EAC Chair (2015-2018) Indonesian Accreditation Board for Engineering Education (IABEE). He is Assessor at Higher Education National Accreditation Council (BAN PT), Ministry of Education, Republic of Indonesia. His publication includes Production of polyhydroxybutyrate from oil palm empty fruit bunch (OPEFB) hydrolysates by *Bacillus cereus* suaeda B-001, Anti-inflammatory activity of *Tetragronula* species from Indonesia, The Effect of *Beauveria Bassiana* on the Effectiveness of *Nicotiana tabacum* Extract as Biopesticide against *Hypothenemus hampei* to Robusta Coffee, Heating Value Enhancement by Biogas Purification using Natural Zeolite and Rice Straw-Based Biochar, Formulation, stability test and in vitro penetration test of emulgel from tobacco leaves extract. He is a reviewer at Elsevier journal (Biocatalysis and Agricultural Biotechnology, Biomass and Bioenergy, Journal of Cleaner Production) and editor in Makara Journal of Technology (UI), International Journal of Renewable Energy Development (UNDIP). He got Doktor Ingenieur from Faculty of Geo-, Forestry- and Hydrosience at Technical University Dresden, Germany (2001-2004) and Professorship since April 2013. He is also guest lecturers in Development of Biopesticides from *Nicotiana tabacum* var Virginia, Shizuoka University, Development of Biopesticides from *Nicotiana tabacum* var Virginia, Tokyo Institute of Agriculture and Technology (TUAT), Bio refinery in Indonesia: Enzyme and Bio oil Productions" to student a Seoul National University, "Simulation of Bioethanol first and second generation by using Superpro Designer", to Student of Chonnam University, "Immobilization of Lipase for Biodiesel Production through Enzymatic process", to Student of Chonnam University, "Bioenergy Development and Implementation in Indonesia", to Student of Chonnam University, "Bioenergy Development and Implementation in Indonesia", to Student of Busan University, Chemical Engineering Department, College of Engineering, King Saud University. He have some Intellectual Property Rights since 2008.

REVIEWER



Professor Kosuke Mizuno

School of Environmental Science
Universitas Indonesia
Indonesia

Kosuke Mizuno is a professor of development studies at School of Environmental Science, University of Indonesia. He is also an emeritus professor Center for Southeast Asian Studies (CSEAS), Kyoto University, and a visiting professor at the Research Institute for Humanity and Nature (RIHN). He has studied on people's organizations, institutions, and economic development in democratizing Indonesia based on extensive field works. His publication includes Rural Industrialization in Indonesia, a Study on Community-based Weaving Industry in West Java (Institute of Developing Economies) in 1996, Populism in Asia (National University of Singapore Press, or NUS Press) in 2009, Direktori Serikat Pekerja/ Serikat Buruh Indonesia. Bandung, Indonesia: (Directory of Trade Unions in Indonesia), (Akatiga Pusat Analisis Social, Bandung), 2007. Catastrophe and Regeneration in Indonesia's Peatlands: Ecology, Economy and Society, (NUS Press) in 2016, Sustainability and Crisis at the Village: Agroforestry in West Java, Indonesia. (the Talun-Huma system and rural social economy) (UGM Press) in 2016. He got Ph.D. in agricultural economics at Kyoto University in 1994. He used to be a researcher at Institute of Developing Economies, Tokyo (1978-1996), and an associate professor at CSEAS since 1996, and a professor at CSEAS since 2003. He was the Director of CSEAS for 2006 to 2010. Currently he is the leader of research project of RIHN titled 'Toward the Regeneration of Tropical Peatland Societies: Building International Research Network on Integrated Peatland Management', interdisciplinary study based on field works in Riau Province, Indonesia to conduct the rewetting and paludiculture in order to prevent the peatland fire, and to regenerate sustainable peatland society.

REVIEWER



Dr. Prabang Setyono

Faculty of Science
Sebelas Maret University
Indonesia

Prabang Setyono, holds a professional engineer intermediate obtained from the Indonesian Engineers Association, and was Certified on Environmental Impact Assessment. He got his doctorate from environmental science in the field of ecology at Universitas Gadjah Mada, Indonesia in 2006. He conducted his research by did a cooperation with JICA-Univ.Kagoshima, Japan and produced a Bioindicator of the Mangrove and Macrozoobenthos Community for Monitoring Ecosystem Degradation in the Central Kalimantan Mentaya River due to the Impact of CPO Waste. As an engineer, he discovered plant varieties, Crude Chlorophyll Porous Adsorber (CCPA)" as Gas Adsorber (2015, with Hari Setyanto), and industrial design, Environmental Insight Quotient (EIQ) as a Test Instrument (2013). He published books such as, Answering the Environmental Crisis (2007), General and Advanced Ecology Practicum Education and Training (2007), Education and Training Practicum for Environmental Pollution (2008), Understanding the Environment (2008), Becoming the Winner of Biology Olympiad (2010), LIMNOLOGY Practical Training (2011), Ethics, Moral and Environmental Suicide in Perspectives Ecology (2010). He also the editor of several books such as, Earthquakes, Environmental Damage, Policy and Strategy (2010), Water Resource Conservation (2012), Economic Valuation of Water Resource Conservation in the Southeast Region of Mount Merapi, Central Java (2012), Economic Valuation of Water Resources (2012), Iodine Supplement Improving the Intelligence of Preschool Children aged 25- 59 Months (2012), Introduction to Sustainable Management of Coastal Areas (2011).

REVIEWER



Dr. Eko Haryono

Faculty of Geography
Gadjah Mada University
Indonesia

Eko Haryono, currently serves as chairman of the postgraduate program in Environmental Sciences, Gadjah Mada University, Yogyakarta, Indonesia. He trained in physical geography and environmental science for about twenty seven years, with experience on karst geomorphology and hydrogeology. He also did a research about Sea level change reconstruction in Indonesia; Karst geomorphology, hydrogeology, and carbon cycle; Paleohydrography and Speleogeneis. He has done a lot of collaboration with industry sector in area of Groundwater Monitoring System in Limestone Quarry, Karst Hydrogeology and Karst Geomorphology. And also for other professional activities, he is a President of Asian Union of Speleology; one of Stearing Comittee Karst Commision of International Geographical Union; and Karst Commission Member of International Association of Hydrogeologist.

REVIEWER



Dr. Emil Budianto

School of Environmental Science
University Indonesia
Indonesia

Emil Budianto, currently as Director of School of Environmental Science, Universitas Indonesia (2016-now). He is Senior Lecturer at Department of Chemistry, Faculty of Science, Universitas Indonesia. He is Head of Organic Division, Department of Chemistry, Faculty of Science, Universitas Indonesia (2013-2018). He got his Doktorate from Institute of Organic Chemistry, Technische Universität Braunschweig, Germany (1988-1991). He is expert and researcher in the field polymers, polymeric materials, biomaterials, material characterization, nanomaterials, and X-ray Diffraction. He got a Scientific Award from Universitas Indonesia (2013 and 2015). He active as author to publish many articles in reputable proceedings, and journals, both in national and international level. And also, he has a project research about Synthesis Styrene Butadiene Hybrid Latex with Organo-Laponite as Filler via Emulsion Polymerization for Application in Paper Coating.

REVIEWER



Dr. Setyo Sarwanto Moersidik

Faculty of Engineering
Universitas Indonesia
Indonesia

Setyo Sarwanto Moersidik is senior lecturer at Environmental Engineering Study Program, Department Civil Engineering, Faculty of Engineering, Universitas Indonesia. He got his undergraduate program on Environmental Engineering Institute Technology of Bandung in 1983. He completed his graduate on Environmental Engineering (Water Science & Management), University of Montpellier II, France, in 1988, and also he got doctorate at Environmental Science and Public Health (Water Quality Management), University of Montpellier I, France, in 1992. He is Head of Environmental Science Program Study, School of Environmental Science, Universitas Indonesia (in 2006-2010). He is senior lecturer at Environmental Science Study Program, School of Environmental Science, Universitas Indonesia since 1985-now. He is expert in the field of Water and Wastewater Treatment, Wastewater Engineering, and Water Analysis.

REVIEWER



Dr. Herdis Herdiansyah
School of Environmental Science
University Indonesia
Indonesia

Herdis Herdiansyah is currently a full-time lecturer of School of Environmental Science of Universitas Indonesia, focusing on specific research cluster of social system and human-environment interaction. During his time as a student or lecturer, he has published many articles in reputable proceedings and journals, both national and international level. Aside from being a lecturer, he is currently editor-in-chief of ASEAN Journal of Community Engagement (AJCE). This journal is managed under collaboration of Universitas Indonesia, ASEAN University Network, and Universiti Kebangsaan Malaysia. Moreover, he is also an editor-in-chief of Journal of Environmental Science and Sustainable Development (JESSD) which has successfully published its first edition with varied affiliations. In line with his interest in the field of research and publications, he is also the team leader of several social-humanities based research, such as sustainability of smallholder oil palm management and also community engagement issues in developing countries.

REVIEWER



Dr. Hayati Sari Hasibuan

School of Environmental Science
University Indonesia
Indonesia

Hayati Sari Hasibuan has been working at School of Environmental Science, Universitas Indonesia since 2014, focusing on the research areas of urban Environment and Transportation and Sustainable Development. She Completed her undergraduate program on Urban and Regional Planning in 1993, and graduated from Sustainable Development Magister Program in 1997, from Institute Technology of Bandung. She completed her doctor on Environmental Science in 2014, from Universitas Indonesia. Current working status as head Magister Program Environmental Science, School of Environmental Science, Universitas Indonesia. She was team leader of Organizing Committee of two international conference: First, International Joint Symposium School of Environment Science, Universitas Indonesia with University of Oxford and ICSOLCA 2018. She was senior researcher in, and/or team leader of many research projects. She was also involved in many ploicy developments at central or local government level on urban/spatial planning issues. She is very active in presenting her research on Transit Oriented Development (TOD), urban transportation, and urban environmental and sustainable development in some international and national academic events. She teaches an spatial planning and sustainable development course for Environmental Science Master Students and supervises several Master Students. Her Research has resulted in more than 20 publications in international scientific publications.

REVIEWER



Dr. Ahyahudin Sodri

School of Environmental Science
Universitas Indonesia
Indonesia

Ahyahudin Sodri is a lecturer at the School of Environmental Science, Universitas Indonesia. He teaches the courses of sustainable development planning, environmental modeling, and writing scientific research manuscripts. He acts as a managing editor of the Journal Environmental Science and Sustainable Development (JESSD). He holds a doctoral degree in environmental sciences from Universitas Indonesia (2017). His research interest is environmental modeling, smart-sustainable cities and communities, energy-economic-environment nexus, energy-water-food nexus, and sustainable consumption and production. The system dynamics modeling used for his research methods, but he also benefits from the other research methods, such as the statistical methods, multi-criteria decision analysis (MCDA), and life-cycle cost analysis (LCCA).



CONFERENCE COMMITTEE

Conference Director

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ICESSD 2019

International Conference on Environmental Science and Sustainable Development



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RUNDOWN

TUESDAY, OCTOBER 22th 2019

TIME	ACTIVITY	VENUE
08.00 – 09.00	REGISTRATION	Corridor Istana Ballroom
09.00 – 09.20	OPENING CEREMONY Safety Induction National Anthem of Indonesia "Indonesia Raya" Traditional Welcome Dance "Ratoh Jaroe Dance"	Istana Ballroom
09.20 – 09.25	Welcome Remarks by Dr. Hayati Sari Hasibuan Conference Director of ICESSD 2019	Istana Ballroom
09.25 – 09.30	Welcome Remarks by Dr. Emil Budianto Director of School of Environmental Science, Universitas Indonesia	
09.30 – 11.00	PLENARY SESSION "The Strengthening of Sustainable Development Goals (SDGs) in Southeast Asia" Keynote Speaker 1: Raldi Hendro Koestoer, Ph.D. (School of Environmental Science, Universitas Indonesia, Indonesia) "Current Environmental Issues in Southeast Asia" Keynote Speaker 2: Professor Yoko Hayami (CSEAS, Kyoto University, Japan) "A Field-based Humanistic Understanding of Environmental and Sustainability" Keynote Speaker 3: Professor Ben White (AES, International Institute of Social Studies, Netherlands) "Agriculture and The Next Generation" Keynote Speaker 4: Professor Jeon Je Seong (KISEAS, Chonbuk National University, Korea) "Toward People-Centered Indonesian-Korea Relations" Keynote Speaker 5: Jeetendra Kumar (MapInfo, Pitney Bowes, India) "Location Intelligent Decision Support System for The Environmental and Sustainable Development" Chair: Dr. Ahyahudin Sodri (School of Environmental Science, Universitas Indonesia, Indonesia)	
11.00 – 11.45	Q & A	Promenade
11.45 – 12.00	Photo Session and Token Appreciation	
12.00 – 13.00	Lunch and Poster Session	
13.00 – 14.30	SPECIAL SESSION Keynote Speaker 6: Dr. Takuro Furusawa (ASAFAS, Kyoto University, Japan) "Human Spectrum and Ecology in Southeast Asia and the Pacific for Global Sustainable" Keynote Speaker 7: Professor Nadarajah (XHS, the Xavier University Bhubaneswar) "Living in a Broken World (or Cry of the Planet, Cry of the Poor) Destructive Desire, Disconnected Disciplinarily, and Disruptive Deschooling"	Istana Ballroom

TIME	ACTIVITY	VENUE
	<p>Keynote Speaker 8: Professor Kosuke Mizuno (School of Environmental Science, Universitas Indonesia, Indonesia) "Commitment and Entitlement Approach for Land Rights"</p> <p>Chair: Professor Kosuke Mizuno (School of Environmental Science, Universitas Indonesia, Indonesia)</p>	
13.00 – 14.30	<p>PARALLEL SESSION 1 (Oral Presentation) Chair 1: Dr. Prabang Setyono "Ecosystem and Biodiversity Conservation"</p>	Jaya Room
14.30 – 15.00	<p>POSTER SESSION (Poster Presentation) Chair 1: Professor Ben White Chair 2: Professor Jeon Je Seong Chair 3: Professor Kosuke Mizuno</p>	Promenade
15.00 – 15.15	Coffee Break	Promenade
15.15 – 17.15	<p>PARALLEL SESSION 2 (Oral Presentation) Chair 1: Dr. Prabang Setyono "Environmental Planning and Management" Chair 2: Dr. Dwi Nowo Martono "Water and Waste Management" Chair 3: Raldi Hendro Koestoer, Ph.D. "Governance, Culture, and Politics" Chair 4: Dr. Ahyahudin Sodri "Sustainable Energy and Renewable Energy"</p>	<p>Istana Ballroom 1 Istana Ballroom 2 Kencana Ballroom Jaya Room</p>

RUNDOWN

WEDNESDAY, OCTOBER 23th 2019

TIME	ACTIVITY	VENUE
08.00 – 08.30	REGISTRATION	Corridor Istana Ballroom
08.30 – 10.30	PARALLEL SESSION 3 (Oral Presentation) Chair 1: Prof. Hadi Susilo Arifin "Environmental Planning and Management" Chair 2: Dr. Dwi Nowo Martono "Water and Waste Management" Chair 3: Dr. Sri Setiawati "Oil Palm, Coal Mining, and Environmental Degradation" Chair 4: Raldi Hendro Koestoer, Ph.D. "Spatial Planning and Regional Analysis"	Istana Ballroom 1 Istana Ballroom 2 Kencana Ballroom Jaya Room
10.30 – 10.45	Coffee Break	Promenade
10.45 – 12.30	PARALLEL SESSION 4 (Oral Presentation) Chair 1: Prof. Takuro Furusawa "Human Resource Management" Chair 2: Dr. Dwi Nowo Martono "Spatial Planning and Regional Analysis" Chair 3: Ninasapti Triaswati, Ph.D. "Community Engagement" Chair 4: Prof. Kosuke Mizuno "Sustainable Forestry and Peat Land Management"	Istana Ballroom 1 Istana Ballroom 2 Kencana Ballroom Jaya Room
12.30 – 13.30	Lunch and Poster Session	Promenade
13.30 – 15.00	PARALLEL SESSION 5 (Oral Presentation) Chair 1: - Chair 2: - Chair 3: Ninasapti Triaswati, Ph.D. "Community Engagement" Chair 4: Dr. Kurniawaty Iskandar "Social Movement and Environmental"	Istana Ballroom 1 Istana Ballroom 2 Kencana Ballroom Jaya Room
15.00 – 15.30	Coffee Break	Promenade
15.30 – 16.20	CLOSING CEREMONY National Anthem of Indonesia, "Indonesia Raya" Video Profile "School of Environmental Science, Universitas Indonesia" Short Video "International Conference on Environmental Science and Sustainable Development (ICESSD) 2019" Keynote Speaker 9: Professor Emil Salim (School of Environmental Science, Universitas Indonesia, Indonesia) "Strengthening Sciences Interconnectivity to Reach for Sustainable Development Goals" The Best Presenter and The Best Poster	Istana Ballroom
16.20 – 16.25	Closing Remarks by Dr. Tri Edhi Budhi Soesilo Vice Director of School of Environmental Science, Universitas Indonesia	
16.25 – 16.30	Photo Session and Goodbye	



POSTER SESSION

TUESDAY, OCTOBER 22th 2019

SESSION 1	VENUE	Promenade
	CHAIR	Professor Ben White Professor Jeon Je Seong Professor Kosuke Mizuno
	ASSISTANT	Karina Nadya
TIME	PAPER ID	TITLE
14.00 – 15.00	25388	MODEL PREDICTIVE CONTROL OF PRECISION AIR CONDITIONING SYSTEM WITH SECONDARY CONDENSER Iput Kasiyanto
	25390	DISPERSION OF IODINE-131 RADIOACTIVE AIRBORNE IN THE FORM OF CH ₃ I, HOI AND I ₂ FROM RADIOISOTOPE PRODUCTION FACILITY STACK TO THE ENVIRONMENT Gatot Suhariyono and Makhsun
	25391	IMPACTS OF LAND USE AND LAND USE CHANGE IN RIVER BASIN TO WATER QUALITY OF CIRARAB RIVER, INDONESIA Kus Indriyani, Hayati Sari Hasibuan, Misri Gozan
	25430	FACTORS AFFECTING THE PERCEPTION OF THE LOCAL COMMUNITY IN MAINTAINING THE SUSTAINABILITY OF THE SETU BABAKAN BETAWI CULTURAL VILLAGE IN SOUTH JAKARTA Dwinanto Suberlian
	25461	EMISSION INVENTORY AND PREDICTION OF ROAD TRANSPORTATION SOURCES IN DKI JAKARTA BASED ON AUTO COHORT MODEL WITH EMISSION SUB MODEL Merita Gidarjati
	25494	EFFECT OF UNWANTED PREGNANCY ON ANTENATAL CARE IN RURAL AND URBAN AREAS IN INDONESIA Martya Rahmaniati, Desya Mulyaningrum
	25743	MONITORING SYSTEM FOR PRODUCING AND UTILIZING FLY ASH AND BOTTOM ASH WASTE FROM COAL FIRED POWER PLANT TO SUPPORT THE COST EFFICIENCY OF INFRASTRUCTURE DEVELOPMENT Mekkadina
	27021	OPTIMIZING WAITING LOUNGE FUNCTION AT PUBLIC SERVICE BUILDING TO ENCOURAGE SOCIAL INTERACTION AMONG VISITORS – CASE STUDY AT PUBLIC SERVICE MALL OF DKI JAKARTA Ari Naldi, Sinta Ramadhania P.M., Belathea Chastine, Agastyo Djanardono B., Ofan Bosman, Reza Dwi Putra
	27022	THE EFFECT OF LAND COVER CHANGES ON THE HYDROLOGICAL SYSTEM IN JAKARTA Fentinur Evida S, Rani Gustia, Nadya Paramitha, Rivaldo Restu, Noviana Bayu A
	27023	A PEDESTRIAN'S EXPERIENCE: REDISCOVERING ROUTE AND DESIGNING GREEN SIDEWALKS FROM FATAHILLAH MUSEUM TO MARITIME MUSEUM Andhika Nurul Wahidah, Bellanti Nur Elizandri, Karina Indah Solihah, Syahra Ariesta F.S., Dinar Dara T.P.P.
	27024	JAKARTA'S LAND SUBSIDENCE: MANAGEMENT OF JAKARTA COASTAL SPATIAL PLANNING Kartika Putri, Bayu Nugraha, Jefri E. Gultom, Vinca R.Y., Sandy Leo
	27025	JAKARTA READINESS IN FACING CLEAN ENERGY PUBLIC CHARGING STATIONS NEED ANALYSIS Muhamad Rizky, Robertus Irwan Putrantomo, Tiara Yasinta, Toni Prasetyo
	27026	THE ARRANGEMENT OF UNDERGROUND ELECTRICITY TRANSMISSION IN JAKARTA Adam Wicaksono, Djajang Godjali, Retno Utari, Umar Atik
	27027	ANALYSIS OF UNTRANSPORTED WASTE IN JAKARTA AND RECOMMENDATION FOR ALTERNATIVE LOCAL WASTE TREATMENT LOCATIONS I Nyoman Mardika Putra, Meida, Muchtazar, Peni Puspitasari



PARALLEL SESSION

TUESDAY, OCTOBER 22th 2019

SESSION 1	ROOM 1 ISTANA BALLROOM 1		ROOM 2 ISTANA BALLROOM 2		ROOM 3 KENCANA BALLROOM		ROOM 4 JAYA ROOM	
	-		-		-		ECOSYSTEM AND BIODIVERSITY CONSERVATION	
	CHAIR	-	CHAIR	-	CHAIR	-	CHAIR	Dr. Prabang Setyono
	ASSISTANT	-	ASSISTANT	-	ASSISTANT	-	ASSISTANT	Kartika Jefri
TIME	PAPER ID	TITLE	PAPER ID	TITLE	PAPER ID	TITLE	PAPER ID	TITLE
13.00 - 13.15	-	-	-	-	-	-	25324	PLANT BIODIVERSITY OF GREEN URBAN SPACE FOR URBAN COOLING SYSTEM Intan Nurul Aini, Hayati Sari Hasibuan, Tarsoen Waryono
13.15 - 13.30	-	-	-	-	-	-	25596	MANGROVE'S VEGETATION STRUCTURE AND COMPOSITION (A STUDY: MANADO CITY, NORTH SULAWESI PROVINCE) Alve Hadika and Mahawan Karuniasa
13.30 - 13.45	-	-	-	-	-	-	25845	PROTECTION OF VULNERABLE ECOSYSTEM FROM OIL AND GAS ACTIVITY BY HYDRODYNAMIC MODELLING IN KARAS AREA, FAKFAK, WEST PAPUA Rahayu Kusuma Risdiyanto, Rudy Parluhutan Tambunan, Suyud Warno Utomo, F B Prasetyo and Undang Hernawan
13.45 - 14.00	-	-	-	-	-	-	25814	ASSOCIATION STUDY BETWEEN THERMAL FRONT PHENOMENA AND BALI SARDINELLA (SARDINELLA LEMURU) FISHING AREAS IN BALI STRAIT Argo Galih Suhadha, Andi Ibrahim, Wikanti Asriningrum
14.00 - 14.15	-	-	-	-	-	-	25437	PROBLEMS IN THE PLANNING OF AREAS AND POLICY: MISALIGNMENT BETWEEN REGENCY SPATIAL PATTERN AND PROVINCE SPATIAL PATTERN: A CASE

SESSION 1	ROOM 1 ISTANA BALLROOM 1		ROOM 2 ISTANA BALLROOM 2		ROOM 3 KENCANA BALLROOM		ROOM 4 JAYA ROOM	
							STUDY IN PURWAKARTA, WEST JAVA Grace Sondang Yunika and Mahawan Karuniasa	
14.15 – 14.30	-	-	-	-	-	-	25836	A CONCEPTUAL MODEL FOR SEMARANG CITY SUSTAINABILITY Ivan Syamsurizal, Mufti P. Patria, Raldi H.S. Koestoer, and Djoko Harmantyo

SESSION 2	ROOM 1 ISTANA BALLROOM 1		ROOM 2 ISTANA BALLROOM 2		ROOM 3 KENCANA BALLROOM		ROOM 4 JAYA ROOM	
	ENVIRONMENTAL PLANNING AND MANAGEMENT		WATER AND WASTE MANAGEMENT		GOVERNANCE, CULTURE, AND POLITICS		SUSTAINABLE ENERGY AND RENEWABLE ENERGY	
	CHAIR	Dr. Prabang Setyono	CHAIR	Dr. Dwi Nowo Martono	CHAIR	Raldi Hendro S. Koestoer, Ph.D.	CHAIR	Dr. Ahyahudin Sodri
	ASSISTANT	Rani Vinca	ASSISTANT	Andhika Bayu	ASSISTANT	Dinar Rivaldo	ASSISTANT	Fentinur Jefri
TIME	PAPER ID	TITLE	PAPER ID	TITLE	PAPER ID	TITLE	PAPER ID	TITLE
15.15 – 15.30	25392	THE EFFECT OF URBANIZATION TO THE FUTURE OF RURAL AREAS IN INDONESIA Mahpud Sujai, Raldy Hendro Koestoer	25050	FACING CILEGON 2025 WATER CRISIS Adipati Rahmat Gumelar, Dwita Sutjiningsih, Abimanyu T Alamsyah, Setyo S Moersidik	24953	PPP AND GOVERNMENT GUARANTEE TO STRENGTHEN SDGS IN INDONESIA Annisa Nur Fauziah, Yuki Mahardhito Adhitya Wardhana	23224	RENEWABLE ENERGY MIX TARGET 2025: STUDY ON THE PERFORMANCE OF GEOTHERMAL POWER GENERATION IN INDONESIA IN THE LAST FIVE YEARS Hariyadi, Paulus Wirutomo, Setyo S. Moersidik, S. Witoro Soelarno
15.30 – 15.45	25309	IMPROVING FARMERS SUSTAINABILITY INDEX STATUS FOR AGRICULTURAL SUSTAINABILITY Hanipah, Hayati Sari Hasibuan, Rudy P. Tambunan	25285	USING DOMINANT INFORMATION IN RAINWATER HARVESTING MOVEMENT AS A WATER MANAGEMENT STRATEGY THROUGH UTILIZATION OF SUSTAINABLE RAINWATER Robby Cahyanto, Jatna Supriatna, Suraya Abdulwahab Affif	25278	CUSTOMARY LAW ASPECT ON THE ROLE OF RELIGIOUS JUDGE IN THE CASE OF DIVORCE Nur Mohamad Kasim	24599	METHANE GAS UTILIZATION ANALYSIS FROM AMOUNT ORGANIC WASTE VOLUME IN TPA PUUWATU KOTA KENDARI Yuspian Gunawan, Jenny Delly, Ridway Balaka, Salimin, Sudarsono, Budiman Sudia, Abd Kadir, Indrayati Galugu, Bunyamin
15.45 – 16.00	25351	IDENTIFICATION OF OXYGEN PRODUCTION AND WATER ABSORPTION IN TAMAN MATARAM MERAH AS AN ENVIRONMENTAL SUSTAINABILITY EFFORT IN SELONG AREA, KEBAYORAN Nur Intan Mangunsong	25068	ACCELERATION OF CLEAN WATER FULFILLMENT IN INDONESIA Yuki Mahardhito Adhitya Wardhana	25357	HOW GHRM PRACTICE INFLUENCE JOB PURSUIT INTENTION OF MILLENNIAL GENERATION IN INDONESIA AND MALAYSIA? Fita Wahyuningsih, Lindawati Kartika, Abdul Rashid Abdullah	24684	ANALYSIS OF UTILIZATION OF ELECTRICITY RENEWED FROM METHANE GAS ORGANIC WASTE PROCESSING PRODUCTS Muhammad Hasbi, Yuspian Gunawan, Jenny Delly, Kadir, Abdul Djoha, Samhuddin, Nanang Endriatno, Adytia Rachman, Lilis La Ome
16.00 – 16.15	25520	INDIGENOUS AND LOCAL KNOWLEDGE PROMOTING SDGS IN INDONESIA: A CASE OF THE SUMBANSE CULTURAL FESTIVAL Makoto Koike	25383	PEOPLE ACCEPTANCE OF RAINWATER HARVESTING IN FISHERIES SETTLEMENT COASTAL AREA, NORTH JAKARTA Adenira Hargianintya, Hayati Sari Hasibuan, Setyo Sarwanto Moersidik	25502	ECOLOGICAL PERIL IN RELATION TO POLITICS OF SPACE CASE STUDY: DAMA VILLAGE, LOLODA, NORTH MALUKU Tommy Christomy, LG. Saraswati Putri	25838	SPATIAL PERSPECTIVE ON THERMAL COMFORT AND ENERGY CONSUMPTION: A PLS-SEM APPROACH (CASE STUDY: PUBLIC SERVICE FACILITY IN JAKARTA TROPICAL COASTAL AREA)

SESSION 2	ROOM 1 ISTANA BALLROOM 1		ROOM 2 ISTANA BALLROOM 2		ROOM 3 KENCANA BALLROOM		ROOM 4 JAYA ROOM	
								Bayu Andalas, Haryoto Kusnoputranto, Suyud Warno Utomo, Raldi Hendro Koestoer
16.15 – 16.30	25417	ESTIMATING NITROGEN RETENTION OF A TROPICAL MEGA- CITY: JAKARTA, INDONESIA Sri Hayyu Alynda Heryati, Gretchen Gettel	25442	BEHIND THE TRASH Mana Kakinuma	25669	PRO-ENVIRONMENTAL BEHAVIOUR AT TRADITIONAL MARKET (A STUDY AT MAYESTIK MARKET (JAKARTA), IBUH MARKET (PAYAKUMBUH), AND PANDANSARI MARKET (BALIKPAPAN) Sessario Bayu Mangkara, Hayati Sari Hasibuan, Herdis Herdiansyah	25761	SOCIAL ACCEPTANCE MODEL OF TECHNOLOGY INTERVENTION TO CHANGE THE PERCEPTION OF ACID MINE DRAINAGE AS ENERGY Yuli Sulistiyohadi, Iwa Garniwa, Setyo S. Moersidik, Lana Saria
16.30 – 16.45	25546	COMBINATION MODELLING OF LEPTOSPIROSIS CONTROL BASED ON ECOSOCIAL Rr. Anggun Paramita Djati, Haryoto Kusnoputranto, Suyud Warno Utomo, M. Sakundarno Adi, Pandji Wibawa Dewabrata, Habiburrachman Alfian Houzaeri Fuad, Mochammad Arief Wicaksono	25498	STUDY OF CLEAN WATER NEEDS BALIKPAPAN, EAST KALIMANTAN, INDONESIA Ulfa Fitriati, Holdani Kurdi, Aulia Isramaulana, Mutiara Mayang	25632	THE RELATIONSHIP BETWEEN ENVIRONMENTAL LAW ENFORCEMENT RELATED TO ENVIRONMENTAL DEGRADATION AND TIN MINING ISSUE IN BANGKA BELITUNG ISLAND Syafri Hariansah, Widya Handini	25385	THE IMPORTANCE OF USERS' PERSPECTIVE IN GREEN OPEN SPACE DESIGN ON CAMPUS' POCKET GARDEN Audrey Gracia Muljono, Tri Edhi Budhi Soesilo, Donna Asteria, Denny Sundara
16.45 – 17.00	25315	ENVIRONMENTAL ASSESSMENT GAP BASED ON AMDAL AND IFC STANDARD PERFORMANCE (CASE STUDY OF LAND ACQUISITION ON BATANG TORU HYDRO ELECTRIC POWER DEVELOPMENT) Arif Muhammad Siregar, Suyud Warno Utomo, Udi Syahnoedi Hamzah	25894	THE IMPORTANCE OF WASTE MANAGEMENT KNOWLEDGE TO ENCOURAGE HOUSEHOLD WASTE SORTING BEHAVIOR IN SMALL ISLAND (STUDY PENYENGAT ISLAND) Zainul Ikhwan, R. Hamdani Harahap, Lita Sri Andayani, Miswar Budi Mulva	25772	CRITICAL DIMENSIONS OF GOVERNMENT ROLES ON HUMAN SECURITY AND SOCIAL PROTECTION IN BORDER AREAS Bambang Shergi Laksmono	25556	WHOSE GREEN IS IT? CONSTRUCTING PROPOSITION ABOUT JUSTICE IN THE SUNDERED WORLD Aji Noor Muhammad, Andhika Riyadi, Wulansari

PARALLEL SESSION

WEDNESDAY, OCTOBER 23th 2019

SESSION 3	ROOM 1 ISTANA BALLROOM 1		ROOM 2 ISTANA BALLROOM 2		ROOM 3 KENCANA BALLROOM		ROOM 4 JAYA ROOM	
	ENVIRONMENTAL PLANNING AND MANAGEMENT		WATER AND WASTE MANAGEMENT		OIL PALM, COAL MINING, AND ENVIRONMENTAL DEGRADATION		SPATIAL PLANNING AND REGIONAL ANALYSIS	
	CHAIR	Prof. Hadi Susilo Arifin	CHAIR	Dr. Dwi Nowo Martono	CHAIR	Dr. Sri Setiawati	CHAIR	Raldi Hendro S. Koestoer, Ph.D.
	ASSISTANT	Vinca Rivaldo	ASSISTANT	Noviana Bayu	ASSISTANT	Fentinur Jefri	ASSISTANT	Karina Nadya
TIME	PAPER ID	TITLE	PAPER ID	TITLE	PAPER ID	TITLE	PAPER ID	TITLE
08.30 – 08.45	25567	A STUDY ON INTEGRATION OF SANITATION PLANNING TOOLS IN SANITATION PLANNING PROCESS. CASE STUDY ON CITY OF THA KLONG, THAILAND Arina Priyanka Vedaaswari	25582	ECONOMIC OR RELIGIOUS INFORMATION? THE EFFECT OF AWARENESS INFORMATION ON THE LEVEL OF FOOD WASTE Khairun Nisa, Chaikal Nuryakin	25335	LEGAL AND SOCIAL RESPONSES ON LAND CONVERSION AGAINST FOOD SECURITY IN DECENTRALIZED INDONESIA: AN INSIGHT FROM JEMBER, EAST JAVA Muhammad Bahrul Ulum, Moch. Marsa Taufiqurrohman	23350	URBAN GROWTH OF PALEMBANG AND URBAN HEAT ISLAND IMPACT USING REMOTE SENSING AND GIS TECHNIQUE Johannes Adiyanto, Adhika Atyanta
08.45 – 09.00	25668	MAKING THE IMPOSSIBLE POSSIBLE? GAPS AND BARRIERS TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN NORTH KOREA Jungyoun Han and Jinah Kwon	25609	GROUNDWATER CATCHMENT AREA FOR HOUSEHOLDS IN BUKIT RAYA SUBDISTRICT, PEKANBARU, INDONESIA Fakhri Rafi, Mahawan Karuniasa, Abdurrahman Assegaf	25435	INDONESIA OIL PALM AS ISSUE INSIGHT OF ENVIRONMENTAL NON-GOVERNMENT ORGANIZATIONS Dwi Ajeng Zahrotun Noor	25254	STAKEHOLDER ANALYSIS AND DECISION ON VERNACULAR DEVELOPMENT AS SUSTAINABLE URBAN SPATIAL Farida Murti, Christiono Utomo
09.00 – 09.15	25603	DETECTION OF AFFECTED FLOOD AREAS AND THEIR RELATION TO LAND USE CHANGE IN THE LASOLO WATERSHED USING REMOTE SENSING SATELLITE IMAGERY Andi Ibrahim, Gatot Nugroho, Argo Galih Suhadha, Pingkan Mayestika Afgatiani, Anisa Rarasati, Mohammad Ardha, Fajar Yulianto	25887	SOLID WASTE MANAGEMENT IN SMALL ISLAND DESTINATIONS A CASE STUDY OF PENYENGAT ISLAND - KOTA TANJUNGPINANG Zainul Ikhwan	25456	COASTAL INUNDATION IMPACT TO THE SUSTAINABILITY OF AGRICULTURE SECTOR IN PEKALONGAN CITY, INDONESIA Erni Suharini, Elok Surya Pratiwi, Fahrudin Hanafi	25819	UTILIZATION OF SPOT 6/7 TO ANALYZE OPEN GREEN SPACE IN SURABAYA CITY Mohammad Ardha, Udhi Catur Nugroho, Nurwita Mustika Sari, Indah Prasasti
09.15 – 09.30	25785	SUSTAINABLE DEVELOPMENT THROUGH STRENGTHENING ENVIRONMENTAL FACTORS: GO BEYOND UNDIVIDEDLY SOCIAL-CULTURAL AND ECONOMIC EMPOWERMENT Arif Purbantara, Sari Viciawati Machdum	25712	ANALYSIS OF THE IMPACT OF URBAN DEVELOPMENT ON RIVER WATER QUALITY CASE STUDY OF THE PESANGGRAHAN RIVER Muslim Aminuddin, Chotib	25533	SUSTAINABLE REPORTING IN INDONESIA: PALM OIL CERTIFIED ISPO PROGRESS IN RIAU, WEST SULAWESI, CENTRAL KALIMANTAN Tanti Budi Suryani, Taufik Akbar Akbar, Muhammad Muflih Mappaujung	25844	IMPLEMENTATION OF SPATIAL PLANNING AND DEVELOPMENT PLANNING IN EAST KALIMANTAN PROVINCE Wedo Aru Yudhantoro

SESSION 3	ROOM 1 ISTANA BALLROOM 1		ROOM 2 ISTANA BALLROOM 2		ROOM 3 KENCANA BALLROOM		ROOM 4 JAYA ROOM	
09.30 – 09.45	25825	COMMUNITY PARTICIPATION, SUSTAINABLE DEVELOPMENT AND SLUM SETTLEMENT IN JAKARTA Yoka Pramadi, Praditya Mer Hananto, Rusydan Fathy, Dicky Rachmawan, Hidayatullah Rabbani	25722	WATER SUSTAINABILITY FOR URBAN WATER FULFILLMENT: GUNUNG PUTRI, KABUPATEN BOGOR, INDONESIA Armeinita Octavia Widyarman	25588	COAL MINING VERSUS PALM OIL PLANTATION: COMPARING THE IMPACTS OF THE INDUSTRIES ON THE HUMAN SECURITY OF LOCAL COMMUNITIES IN INDONESIA Suyani Indriastuti	25817	MANGROVE ECOTOURISM MANAGEMENT BASED ON GIS AND REMOTE SENSING IN SUKAKARTA COAST Tjong Giok Pin, Jatna Supriatna, Noverita Dian Takarina, and Rudy Parluhutan Tambunan
09.45 – 10.00	25854	ANALYSIS OF ENVIRONMENTAL SENSITIVITY INDEX AT KARAS AREA, FAKFAK REGENCY, WEST PAPUA PROVINCE Rahayu Kusuma Risdianto, Rudy Parluhutan Tambunan, Suyud Warno Utomo	25726	THE BLUE WATER FOOTPRINT OF BLOCK-PRINTED BATIK COLOURED BY NATURAL DYE OF MYROBALAN (<i>Terminalia bellirica Roxb.</i>) MORDANTED BY ALUM AND COPPERAS Widhi Handayani, Alberta Rika Pratiwi, Budi Widianarko	25655	DEVELOPMENT MODEL OF COFFEE AGRIBUSINESS IN RENGGANIS MOUNTAIN SLOPE JEMBER EAST JAVA Tanti Kustiari	25282	SUSTAINABLE FISHERIES SUBSIDIES FOR SMALL SCALE FISHERIES IN INDONESIA Andre Notohamijoyo, Adi Setya Wiyata, Mustaidz Billah
10.00 – 10.15	25791	INTEGRATED AGRICULTURAL BASED AGROTOURISM WITH ECO-FRIENDLY ENVIRONMENTAL ON CARIK INJEMAN LAND IN CIBODAS VILLAGE Etty Indrawati, Ratnaningsih Ruchiat, Dwi Indrawati, Shafira Febriani	25826	GARBAGE POLLUTION IN THE CISADANE RIVER IN THE TANGERANG REGION Hinijati Widjaja, Alicia Wellsan, Gabriella Mistissy, N. Dhea Madinah A.Q., Febri Yenny, Olivia Dais A.	25745	THE DEVELOPMENT OF INTEGRATED CATTLE FARM ON EX-COAL MINING AREA (CASE STUDY: PT BERAU COAL, EAST KALIMANTAN PROVINCE, INDONESIA) Farisatul Amanah, Tedi Yunanto, Dobby Herika	-	-
10.15 – 10.30	-	-	-	-	25864	DOES MINING AND QUARRYING ACTIVITIES BRING ENVIRONMENTAL DAMAGES? EVIDENCE FROM INDONESIA Herjuno Bagus Wicaksono, Lourentius Dimas Setyonugroho, Israul Hasanah	-	-

SESSION 4	ROOM 1 ISTANA BALLROOM 1		ROOM 2 ISTANA BALLROOM 2		ROOM 3 KENCANA BALLROOM		ROOM 4 JAYA ROOM	
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	ASSISTANT	Dinar Rivaldo	ASSISTANT	Kartika Bayu	ASSISTANT	Andhika Noviana	ASSISTANT	Rani Vinca
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KS 1

CURRENT ENVIRONMENTAL ISSUES IN SOUTHEAST ASIA

Raldi Hendro Koestoer
(School of Environmental Science (SES), Universitas Indonesia, Indonesia)

ABSTRACT

At the beginning of magnitude of Global Warming (GW), a lot of debates occurred related to environmental issues. One of the hot-spots is located and appeared in Southeast Asia (SEA). Therefore, discussions on such environmental impacts mushroom in the region concerned. One might argue that GW contains of sigma and deviant series of local climate change comprising a lot of occurrences for local climate change. Arguments would focus on the issues taken place and what institutions evolved in such environmental concerns in SEA. Regardless the debates caused, human activities might take a large part of regional climate change. Human activities such as uncontrollable land use and excessive fossil fuel usage, might lead to changes in regional atmosphere as well as natural climate variability. In turn, all of these refer to sizable temperature rise which increases the spread of diseases, frequency of natural disasters, and drastic ecosystem changes. Land, coastal and marine based resources bring ecological, economic, and social benefits to ASEAN regional development. Despite the fact that, the most serious management issues are food resiliency, water insecurity and fishery over-exploitations. Regional development of SEA is aimed to increase economic development and fulfill basic services with concerns to the harmony between plan and space use. Human resources play a significant role in inclusive and equal development. In addition, academicians and researchers in ASEAN would take part in mitigating any environmental issues which have significantly influence on the quality of life.

Keywords: global warming; climate change; environmental issues; Southeast Asia; regional development



KS 2

A FIELD-BASED HUMANISTIC UNDERSTANDING OF ENVIRONMENTAL AND SUSTAINABILITY

Yoko Hayami

(Center for Southeast Asian Studies (CSEAS), Kyoto University, Japan)

ABSTRACT

I will first introduce the Center for Southeast Asian Studies at Kyoto University and how we do research at our Center. Since our foundation in 1965, our Center has stressed a holistic understanding of society and nature of the region, by interdisciplinary approach and field-based method. From the beginning it was an interdisciplinary institution, not only including various disciplines from the humanities and social sciences, but what made it unique among area studies institution in the world at the time was the inclusion of natural sciences. Up to this day, one third of our faculty come from science disciplines such as agronomy, forest science, engineering, medical and veterinary sciences, informatics, microbiologists etc. With these interdisciplinary composition, we tackle issues that are emerging from the field. The topic of this conference, environmental science and sustainable development goals is also one that I believe requires inter-disciplinary as well as field-based study. I start by introducing some recent research from our Center. A landmark project that started in 2007 was the Sustainable Humanosphere studies. It is a framework in which we look at the world as constituting the humanosphere as an integrated whole of the geosphere, the biosphere and human society. There is now prevailing consensus that human societies expansion across the earth has led to global warming in the geosphere and biodiversity loss in the biosphere. This has led scientists to declare that we are undergoing an epoch-level transition in what we had termed the humanosphere. Since the beginning of the industrial revolution our societies have developed and expanded through fast paced technological change and this has been accompanied by global ecological degradation leading to our current environmental crises. Now, towards designing a globally sustainable path, we must re-habilitate the sustainability driven path, bringing modern technology and institutions less towards further productivity and more towards the sustainability of the global environment.

Keywords: humanistic understanding Southeast Asian; sustainable humanosphere



KS 3

AGRICULTURE AND THE NEXT GENERATION

Ben White

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ABSTRACT

As teenagers and young people all over the world demand urgent action against climate breakdown, what role might rural youth play in a future, more climate-friendly agriculture? Sustainable agricultural futures depend, partly, on the adaptive capacities of farming systems in the face of climate change. But they also depend on the ongoing struggle for control of land, farming and agri-food chains between different modes, scales and principles of farming. The UN Decade of Family Farming 2019-2028 (UNDIFF) commits member states to the support and expansion of smallholder farming as the basis of the world's food production. Family farming, according to the UNDIFF global action plan, provides 80 per cent of the world's food on only 50 per cent of the world's farmland, and can contribute to all 17 of the UN Sustainable Development Goals. But family farming is subject to many kinds of threats. Beside the onward march of corporate industrial agriculture and agribusiness domination of agri-food chains, we could mention the chronic neglect of smallholder farming by governments (with some exceptions), new risks and calamities due to climate breakdown, and the global surge of the extreme right, in alliance with big business. A revitalized smallholder farming depends not only on active support from governments, but also on the emergence of a new generation of young men and women interested in farming. Will there be a next generation of smallholder farmers? Or will smallholder farming be abandoned by the new generations, leaving big capital and the multinationals to take over? Recent research shows that while many young rural men and women indeed aspire to non-farming futures, they also have a clear idea of what is needed to make farming a more attractive option, especially: access to land, to markets, and government support, and combining farming with other income sources, reflecting the pluriactive and plurilocal character of sustainable rural livelihoods.

Keywords: climate breakdown; pluriactive; plurilocal; sustainable rural livelihoods



KS 4

TOWARDS PEOPLE-CENTERED INDONESIA-KOREA RELATIONS

Je Seong Jeon

(Korean Institute for Southeast Asian Studies (KISEAS), Chonbuk National University, Korea)

ABSTRACT

Indonesia-Korea relations have entered a Golden Age. This age is characterized by the development of human dimension beyond government relations. Investors and migrants pioneered the human dimension. The New Southern Policy, a foreign policy that the current Korean government is proposing, also presents a vision of a people-centered community. However, the performance indicator of the people-centered vision is superficially set by the increase in mutual visitors. Let's try to think about what we need to do to develop people-centered relationships. One of the tasks is strengthening solidarity for better democracy. Here it is worth looking at the status of the ILO Core Convention Ratification. Better democracy is deeper when it contributes to people's well-being. Special attention should be given to cooperation for contemporary healthcare and welfare reform. A directory on various solidarity activism between civil society organizations in both countries should also be created. These relations could be noted as regional partnerships that contribute to the achievement of the SDGs.

Keywords: golden age; Indonesia-Korea relations; people-centered community



KS 5

LOCATION INTELLIGENT DECISION SUPPORT SYSTEM FOR THE ENVIRONMENTAL AND SUSTAINABLE DEVELOPMENT

Jeetendra Kumar
(MapInfo, Pitney Bowes, India)

ABSTRACT

Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. It requires a compressive data and location intelligent solution to support the decisions. Location intelligence organizes geographic data so that a person reading a map can select data necessary for a specific project or task. Location Intelligence is an important tool for helping people map out plans for successfully achieving management strategies that are sustainable both at local and global levels. Location Intelligence is a key tool used for site assessments, prioritization, mitigation, planning, science and training. What we need is a national strategy for sustainable development, strategic and participatory process of analysis, debate, capacity strengthening, planning and action towards sustainable development.

Keywords: intelligent decision; location intelligence; map; sustainable development



KS 6

HUMAN SPECTRUM AND ECOLOGY IN SOUTHEAST ASIA AND THE PACIFIC FOR GLOBAL SUSTAINABLE

Takuro Furusawa

(Graduate School of Asian and African Area Studies (ASAFAS), Kyoto University, Japan)

ABSTRACT

Southeast Asia and the Pacific societies represent a rich human spectrum and ecology which has been formed through long history of human biological and cultural adaptation to environment. A famous "Tales of Two Islands" showed that a society collapsed in an island after over-exploitation of natural resources while the other sustained high population density in the other island by means of strict governance of resource use, wise and collective use of land, and severe population control. Today, however, the climate change is affecting both of such islands. Island people who faced with the sea level rise is suffering from new hazard such as loss of settlement, destruction of production land, and diseases risk in over population. One of the reasons that population expansion in the 20th Century did not result in global food scarcity was that the huge Asian populations had various dietary culture (e.g., consumption of marine resources, chicken, vegetarian diet, etc.) which were different from and requiring much smaller farm land than European ones. However, social and cultural globalization is changing Asian dietary culture to the one demanding more meat (especially beef) and thus farm land now, and therefore the global food security risk is rising again. SDGs is the global goals for the sustainable development, but it should be noted that there has been no scientific evidence that the 'development' in terms of global economy is 'sustainable.' Human spectrum and ecology, including diversity of culture and humans, are the key for sustainable future.

Keywords: human spectrum; diversity of culture; sustainable future; Southeast Asia



KS 7

LIVING IN A BROKEN WORLD (OR CRY OF THE PLANET, CRY OF THE POOR) DESTRUCTIVE DESIRE, DISCONNECTED DISCIPLINARILY, AND DISRUPTIVE DESCHOOLING

Nadarajah Manickam

(School of Humanities and Social Sciences (XHS) at the Xavier University Bhubaneswar (XUB), India)

ABSTRACT

The world is badly 'broken'. All our efforts – including the Sustainable Development Goals -- focused on the desire for 'growth' and the false certainty of 'disciplinary silo thinking', are not helping much. The "Cry of the Earth and Cry of the Poor" i.e. the suffering of all sentient beings and the continued destruction of the life-supporting biosphere – is only intensifying. Many of the destruction indicate irreversibility. Young people are beginning to voice out the mess world leaders – political, business and even academic – have created in relation to their present and futures. Very recently, millions of young people took to the streets the world over – it captured the voice of the next generation, which in no uncertain terms tells us how selfish, careless, blind, incompetent and unprepared we are -- no wonder why we are now in a state of eco-socio-emergency. It is high time we stopped looking at our bank balance so that we may examine our conscience. We need to promote a process of conscientisation and disruptive deschooling -- to unlearn, let go and relearn. The world needs radically new narratives, new lifestyles, new beings and new institutions. Globally and in the long term, business-as-usual and business-as-always are not going to help us anymore. Are we ready to let go? Are we really ready to ensure no one is left behind?

Keywords: cry of the aearth; destructive desire, disciplinary silo thinking; disconnected disciplinarily; disruptive deschooling



KS 8

COMMITMENT AND ENTITLEMENT APPROACH FOR LAND RIGHTS

Kosuke Mizuno

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ABSTRACT

We have explore the transformability of environmentally vulnerable society, through the commitment to the efforts of local people to look for the solution. We look for the ecological and technological suitable solution while we try to improve the livelihood of local people, for the case of peatland restoration, we implemented the program of the Rewetting, Revegitation, and Revival of the livelihood of local people. In the implementation of the restoration program, However people face with more serious and fundamental problems such as land title, land dispute, or payment in advance system. Those issues can be called with the issue of Entitlement. Entitlement is the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces. (Sen 1984). As one case of entitlement approach, here we introduce the land title issue. In developing countries, forest tenure conditions tend to be contested, overlapping, insecure. (RRI, 2008, 2012; Sunderlin, Hatcher, & Liddle, 2008; White & Martine, 2002) Lack of local control over forest use and management decisions is a lasting legacy of state appropriation, or state forest. (Ellsworth & White, 2004; Sunderlin et al., 2014). 70% of Indonesian territory is the state forest (kawasan hutan), and 40 million people live on and around the area without their own property right on land, or on insecure land right. In this keynote we introduce the case of land title at the peatland. We show the conditions of the land title at the peatland area. We show the commitment approach of transdisciplinary, and concrete case of the social forestry program at the research area at Bengkalis, Riau area where collective actions of the people are expected. In the program, customary rights are respected while the peatland restoration program is implemented.

Keywords: commitment; entitlement; peatland degradation; land title; state forest; customary rights



KS 9**STRENGTHENING SCIENCES INTERCONNECTIVITY TO REACH FOR
SUSTAINABLE DEVELOPMENT GOALS**

Emil Salim
(School of Environmental Science (SES), Universitas Indonesia, Indonesia)

ABSTRACT

Environmental science is an interdisciplinary sciences to understand and analyse the complex and dynamic interaction in environmental system. This is being analysed and develop within the context of social science. It provide a frame for analysing sustainable development that is aimed to reach 17 goals, embracing, social, economic and environmental goals. The crucial issue at stake is to properly interconnect the three prong approach of economic, social, and environmental development to reach for sustainable development goals. When the proper and balance interconnection of economic, social, and environmental process is not achieved then dissatisfaction and failure of the sustainable development is forthcoming. We need a new approach of scientific thinking which is more conducive and apt to meet the challenge of sustainable development. Let us hope that this conference provide the spark for future dialogue to strengthen interconnectivity of economic, social and environmental dimensions in sustainable development.



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25315**GAP OF PUBLIC CONSULTATION PROCESS IN AMDAL AND ESIA**

Muhammad Arif Siregar, Suyud Warno Utomo, and Udi Syahnoedi Hamzah

ABSTRACT

Development activities become one of the factors causing the disruption of ecosystems that have an impact on the environment, social and economy. Environmental management is an effort to prevent the environmental ecosystem in accordance with, its carrying capacity and capacity, social and economic in the location of activities. Particularly in land acquisition, what is characteristic is the use of public consultation instruments from the proponent in their implementation. Problem identified, environmental management using two documents, namely AMDAL and ESIA. In this thesis, the writer tries to discuss the AMDAL and ESIA documents, especially in the public consultation side of the land acquisition process in the Batang Toru Hydroelectric Power Plant, using quantitative descriptive methods and interviews with various speakers. The results of the AMDAL and ESIA process have the potential for synergy even though there are gaps in both processes. The author hopes the results of this research can be useful for decision makers both from the side of the government and proponents, as well as the community at large.

Keywords: AMDAL, ESIA, Public Consultation, Land acquisition.



25351**IDENTIFICATION OF OXYGEN PRODUCTION AND OXYGEN NEEDS IN PARK AND GREEN PATH AS AN ENVIRONMENTAL SUSTAINABILITY EFFORT IN SELONG AREA**

Nur Intan Mangunsong

ABSTRACT

The availability of land for parks and green path in the city of Jakarta is increasingly limited, so we need green open space that provides maximum value for the city community and surrounding communities. The purpose of this study is to calculate how much oxygen is produced by the Park and Green path to the oxygen demand of residents and vehicles in the Selong Village. The method used in this study is an evaluative analysis method (calculating oxygen production from vegetation based on the number and type of trees; calculating the oxygen needs of residents and vehicles) and efforts to increase oxygen production. The study was conducted in 12 parks and 18 green belt in Kelurahan Selong. The calculation results show that a garden planted with many trees does not guarantee that more oxygen will be produced if the selection of tree species is not right. Characteristics of trees that are broad-crowned, leafy and pile more produce oxygen. This research is expected to increase government and community awareness of the importance of the existence of green open space for the sustainability of oxygen availability in urban areas and can be a reference for park development.

Keywords: Oxygen production; Oxygen needs; Parks and green path; Sustainability



25392

THE EFFECT OF URBANIZATION TO THE FUTURE OF RURAL AREAS IN INDONESIA

Mahpud Sujai and Raldy Hendro Koestoer

ABSTRACT

Economic developments in various regions of the world have created new economic growth centers. Emerging market countries continue to grow to catch up with developed countries. It can be seen from increasing industrialization, rising labor markets and urbanization which has caused many villagers move to urban areas. The problem that occurs as a result of global dynamics related to urbanization is the large number of rural areas that have decreased their economic activity as a result of abandoned villages by productive residents because they moved to cities. Developed countries have such as the United States, Canada, Australia and Japan have experienced a decline in the economy in rural areas (Wood, 2008). The decline in economic activity is even more severe, because it is followed by a decline in employment, depopulation, economic depression and a decline in the quality of life in rural areas (Li et al, 2016). This phenomenon might occur in Indonesia in the next few years if it is not anticipated by the various policies needed to develop the village. Villages need to be built to avoid the continued migration of the productive age population to the city which results in a decline in economic activity in the village. This study has an objectives to analyze village evolution in Indonesia and compare to those happened in fast economic growth developing countries especially China who has already suffered by this problems. This study uses a qualitative approach with descriptive analytical methods. The study was conducted by analyzing secondary data and conducting a literature review. Furthermore, the case experience method will be analyzed from some cases that have already happened in many parts Chinese villages. The result shows that declining or even abandoning village that happened in many parts of developed countries will not happened in Indonesia.

Keywords: Regional development, rural economic growth, urbanization, village sustainability



25417**ESTIMATING NITROGEN RETENTION OF A TROPICAL MEGA-CITY: JAKARTA, INDONESIA**

Sri Hayyu Alynda Heryati, Gretchen Gettel

ABSTRACT

Background. Nitrogen from coastal cities are predicted as one of the largest sources of N loading into oceans. Jakarta is an example, with its adjacent bay suffering massive algal blooms, hypoxia and extensive fish kills due to excess nutrient loading. Despite this fact, water quality standards of Indonesia does not consider total N load. Without adequate management, the problems likely will continue and will be exacerbated by climate change and the construction of Giant Seawall. This study estimates N budgets for Jakarta for the years 2011–2015 to identify sources and assess possible factors affecting N retention, including population density, precipitation, and land cover. **Methods.** By quantifying N inputs and outputs within Jakarta using mass balance approach, N retention was estimated as the difference between them. N inputs were riverine N input, net N in food and feed, atmospheric N deposition, N fertilizer, and N fixation; and N outputs were riverine N export, solid waste exported, and manure volatilization. The dominated N sources to the city came from the riverine input, and rivers were also responsible for the largest export. **Results and discussion.** The average of N retention approximately $-8,800 \text{ kg N km}^{-2} \text{ year}^{-1}$, but trending to be negative (+15 to -24%) for years 2011–2014. The estimate for N retention drastically decreased in 2015, and although based on few data points for total nitrogen, appears to be a result of a dredging project. **Conclusion.** The possible drivers for N retention were precipitation and population density. However, to investigate the relationship between parameters was difficult, mostly because of urban dynamics happened within the fast-growing city which greatly influenced observed data. While the results are acquired from the specific case of Jakarta city, the information can be used as a reference regarding N budget in urban ecosystem elsewhere.

Keywords: Jakarta; Nitrogen budget; Nitrogen retention; Urban ecosystem



25520**INDIGENOUS AND LOCAL KNOWLEDGE PROMOTING SDGS IN INDONESIA: A
CASE OF THE SUMBANESSE CULTURAL FESTIVAL**

Makoto Koike

ABSTRACT

From the perspective of anthropology, this paper aims to explore why the festival targeting both environmental preservation and religious and cultural revitalization have been launched on the island of Sumba and how its experiences can contribute to strengthening and promoting the Sustainable Development Goals in Southeast Asia in general. I conducted research in Haharu, East Sumba, from 1985 to 1988, and have followed up the subsequent social and cultural changes. Sumba is one of the most sparsely populated and impoverished regions in Indonesia. The Sumba people were economically poor, but maintained their own rich heritage of cultures and customs. Since the 2000s, however, the process of marginalization has been drastic. They have suffered from the pressure of expanding agro-industry and mining. Most land on the beachside has been purchased and fenced off for future tourism development. Protesting the hardships the people face, in 2012, local NGOs collaborating with Sumbanese ritual specialists launched Festival Wai Humba (Festival of Sumbanese Water). Wai means water in Sumbanese, and symbolizes a source of all human activities. I researched it in 2016 and interviewed the committee members and other attendants. It aims not only to promote environmental protection but also to preserve the cultural heritage of Sumba, in terms of which the executive committee emphasizes the Sumbanese indigenous and local knowledge (ILK). The research shows the importance of a network connecting local communities all over Sumba and the translation of ILK into more adaptable and understandable knowledge. The two points are made possible by the collaboration between community leaders and NGOs, and required in order to negotiate with local and central governments and private companies. The case study of the Festival can be adapted to solve various difficulties many indigenous communities in Southeast Asia.

Keywords: ILK; Sumba; NGO

25546**COMBINATION MODELLING OF LEPTOSPIROSIS CONTROL BASED ON ECOSOCIAL**

Rr. Anggun Paramita Djati, Haryoto Kusnoputranto, Suyud Warno Utomo, Matheus Sakundarno Adi, Pandji Wibawa Dewabrata, Habiburrahman Alfian Houzaeri Fuad, Mochammad Arief Wicaksono

ABSTRACT

Research problem(s): Leptospirosis as one of the environmental-based diseases is a neglected zoonotic disease. There are ecological habitats and niches that need to be explored in depth study based on ecosocial. A basic knowledge on social networks between actors in leptospirosis control efforts is needed.. Through combination of modelling, result of studies is expected to be used as a basis for establishing leptospirosis control efforts comprehensively. Objective: Develop an integrated leptospirosis control model based on ecosocial. Methods: The location of the study was in Demak districts, Indonesia. Geographic coordinate data of cases during 2008-2018 were determined from the results of surveys of District Health Offices. Climate data obtained from BMKG. Environmental data were obtained from BIG. Data on social factors were obtained by interviewing sufferers using indepth interview. Case and environmental data was then analyzed using ArcGIS and MaxEnt version 3.4.1. Presentation of data in the form of a visual map. The model of leptospirosis control is based on the results of a study by Djati et al. (2015) who used the dynamic system method to be reformulated according to the availability of data. Determination of control scenarios was presented in graphical form. To describe who were the actors involved in efforts to control leptospirosis and the relationship were used social network analysis. The discussion to draw conclusions was done using an environmental science approach. Results: The model predicted that, the intervention was biological control, which has the highest leverage to reduce the morbidity rate. An important role in efforts to control leptospirosis is in health workers, although to be supported by self-supporting roles of the community. Management and control of natural and social environmental risk factors is very important. Conclusion: Combination model based on ecosocial was a useful tool to predict the efficiency of leptospirosis control.

Keywords: leptospirosis, control model, ecosocial



25567**A STUDY ON INTEGRATION OF SANITATION PLANNING TOOLS IN SANITATION PLANNING PROCESS CASE STUDY ON CITY OF THA KLONG, THAILAND**

Arina Priyanka VedaSwari

ABSTRACT

A lot of sanitation planning tools and approach were developed to help sanitation planning process, which ranges based on their focus, objectives and target users. SAT and FAT were the examples on sanitation planning tools to help decision making process by providing result on situational, technological and financial analysis on FSM. Tha Klong municipality, in Thailand is one of the cities that has conducted the study using these two tools. The focus on this thesis is to study on how these tools were used and implemented in the setting of Tha Klong and how the actual planning process in this city were carried out to see its implication on sanitation planning process. A case study was conducted where FGD and interview were used as the method for data collections, whereas CLUES and Sanitation 21 were further utilized as an approach to analyse the data in order to understand the overall planning process in Tha Klong municipality. The result implies that FAT and SAT assessment conducted for Tha Klong municipality did have a sufficient result as required in order to prepare for FSM implementation, although it did not materialize in the projects planned as well as policies made in Tha Klong.

Keywords: Sanitation Planning Tools; Sanitation Planning Approach; Faecal Sludge Management; CLUES, Sanitation 21



25603**DETECTION OF AFFECTED FLOOD AREAS AND THEIR RELATION TO LAND USE CHANGE IN THE LASOLO WATERSHED USING REMOTE SENSING SATELLITE IMAGERY**

Andi Ibrahim, Gatot Nugroho, Argo Galih Suhadha, Pingkan Mayestika Afgatiani, Anisa Rarasati, Mohammad Ardha, Fajar Yulianto

ABSTRACT

Flooding is the most frequent disaster in Indonesia especially during the wet season. Wet season in Indonesia has a high level of rainfall. In addition to rainfall levels, flooding is affected by infiltration, slope and land use land cover (LULC). LULC changes have a major role in flood disaster. This study aimed to determine affected flood areas and trying to obtain the relationship between flooding and land use changes in Lasolo watershed. Radar Sentinel-1 imagery year 2019 was used to analyze the differences in the appearance of during and before the flood event. In addition, a random forest method was carried out to classify changes in land cover for 19 years by using Landsat-5 imagery year 2000 and Landsat-8 imagery year 2018-2019. The results of this study indicate that flooding occurred in two sub-districts namely Lasolo and Asera with extensive inundation was about 4.284,72 Ha. In all flood-affected areas, the dominant land changes changed from forest to open area (288,18 ha), paddy field to forest (126,81 ha) and from plantation to forest (103,32 ha). This analysis is urgently needed to manage spatial planning along the Lasolo watersheds in a sustainable manner including watershed management in terms of building urban resilience towards future flood disaster.

Keywords: Extensive inundation; Flood disaster; Land use change; LULC; SAR; Watershed



25668**MAKING THE IMPOSSIBLE POSSIBLE?: GAPS AND BARRIERS TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN NORTH KOREA**

Jungyoun Han and Jinah Kwon

ABSTRACT

Would the coexistence of human rights and development in North Korea possible? While there is another round of meeting between Trump and Kim Jung-un pending, there is an overused word of "economic prosperity" by both Moon and Trump since the spring of 2018 as compensation for North Korea's denuclearisation. It raises concern as their political rhetoric sounds not much different from economic developmentalists who prioritized development over human rights. The case may be worse for North Korea due to its position as a human rights perpetrator for the last decades. While the discourse about the development of North Korea is blooming with this background, this paper explores the possibility of linking human rights and development in the context of North Korea based on many scholars including Peter Uvin, Beetham, and Anthony who explained about the nexus between development and human rights. SDG indicators from the United Nations will be juxtaposed with human rights records of North Korea from 1996 to 2018. For the human rights records, the White Paper on Human Rights in North Korean from the Korea Institute for National Unification, Database Center for North Korean Human Rights, and the UN Commission of Inquiry report on North Korean human rights will be utilized as it is the best established human rights record on North Korea.

Keywords:

25743

MONITORING SYSTEM FOR PRODUCING AND UTILIZING FLY ASH AND BOTTOM ASH WASTE FROM COAL FIRED POWER PLANT TO SUPPORT THE COST EFFICIENCY OF INFRASTRUCTURE DEVELOPMENT

Mekkadinah

ABSTRACT

Coal fired power plant (CFPP) capacity in the Banten province continues to grow, from 1983 to 2019, 2x400 MW has been installed to more than 6000MW. The increase in the number of CFPP has an impact on the amount of fly ash and bottom ash (FABA) waste produced each year in the region. The FABA waste can be used as a mixture of cement in infrastructure development. The management of FABA waste is currently 70% utilized by the cement industry for activities located outside the Banten area, so that additional transportation costs are needed for the management of the waste. On the other hand, Banten province still needs infrastructure development. A monitoring system for the establishment and utilization of FABA waste can be built to improve waste utilization, prevent environmental impacts due to further waste travel, and support increased infrastructure development in the Banten region at a lower cost because it utilizes FABA as a substitute for cement.

Keywords: FABA, fly ash, bottom ash



25785**SUSTAINABLE DEVELOPMENT THROUGH STRENGTHENING ENVIRONMENTAL FACTORS: GO BEYOND UNDIVIDEDLY SOCIAL-CULTURAL AND ECONOMIC EMPOWERMENT**

Arif Purbantara, Sari Viciawati Machdum

ABSTRACT

Village development is the process of enhancing the quality of life of people living in rural areas through community participation. It needs the commitment of beneficiaries as a group member. All the time, "profit-making" countenance becomes a private matter for uplifting needy people. In Indonesia, the sovereignty of the economic aspect shaping community intervention program for the village development. Indonesian government believes that improving the wellbeing of the people through the economic aspect is the primary access. This approach leads to increasing inequality in the village and exploitation of the environment to achieve economic prosperity. Otherwise, the development process in the Panggungharjo Village Government showed a different explanation. The village government through its environmental sustainability approach emerged as the leading factor for implementing empowerment of socio-cultural and economic aspects of people in Panggungharjo Village. This study used a qualitative approach by collecting data through in-depth interviews, focus group discussions, observation, and literature studies. Total informants were 18 informants, using purposive and snowball sampling. While previous literature has stated that the economic aspect was the essential matter, this study showed that empowerment through environmental aspects moved as a catalyst for empowerment in socio-cultural and economic aspects to encourage sustainable development.

Keywords: Sustainable Development, Environmental Factors, Social-Cultural Empowerment, Economic Empowerment, Government



25791**INTEGRATED AGRICULTURAL BASED AGROTOURISM WITH ECO-FRIENDLY ENVIRONMENTAL ON CARIK INJEMAN LAND IN CIBODAS VILLAGE**

Etty Indrawati, Ratnaningsih Ruchiat, Dwi Indrawati, Shafira Febriani

ABSTRACT

The development of agrotourism in rural areas based on the local community is expected to provide many benefits. It is not only for rural communities but also urban community to understand completely, give an appreciation to agriculture and become an educational medium. Cibodas village is one of the villages in Pasirjambu sub-district, Bandung regency. It is located at an altitude of 1000-1200 meters above sea level, with an area of about 1,926.3 Ha, including villages, rice fields, protected forests, and production forests. The population of Cibodas village is 8,591 inhabitants. Cibodas villagers mostly work as farmers and ranchers. More than 50% of the labor force population does not have permanent occupation. Dairy cattle in Cibodas village is the main livelihood for the community, but currently, it is quite difficult to find green feed, especially in the dry season. Solid waste treatment from settlement and animal waste is not optimal and sustainable. The purpose of this study is (1) to identify the factors determining agrotourism planning, (2) study integrated farming system as a support for agrotourism, (3) inventory various opinions of the apparatus related to the development of agrotourism in rural areas, farmers' perceptions, and ranchers, (4) formulate the developing model of agrotourism in integrated farming. The method used in the data analysis was a qualitative exploratory of ecological, agricultural, livestock and social factor concerning the perception of village officials and community leaders on the existence of agrotourism. It is expected that the labor force that does not have a permanent occupation can be channeled as the manager of agrotourism. The sustainable agrotourism plan which will be located at Carik Injeman land must have four zones, namely: 1) integrated agricultural system area 2) integrated waste disposal area, 3) environmental area 4) recreation and sports area

Keywords: Agrotourism, Carik Land, Integrated Agriculture, Eco-Friendly

25825**COMMUNITY PARTICIPATION, SUSTAINABLE DEVELOPMENT AND SLUM SETTLEMENT IN JAKARTA**

Yoka Pramadi, Praditya Mer Hananto, Rusydan Fathy, Dicky Rachmawan, Hidayatullah Rabbani

ABSTRACT

One of the SDG (Sustainable Development Goals) programs being implemented by the Indonesia government is "Sustainable Cities and Communities: Make cities and human settlements inclusive, safe, resilient and sustainable". Why it matters? The United Nations (UN) explicate that The cost of poorly planned urbanization can be seen in some of the huge slums, tangled traffic, greenhouse gas emissions and sprawling suburbs all over the world. Slums are a drag on GDP, and lower life expectancy. By choosing to act sustainably we choose to build cities where all citizens live a decent quality of life, and form a part of the city's productive dynamic, creating shared prosperity and social stability without harming the environment. Jakarta as Indonesia's capital city currently has many slums. But not all settlements are always in a slum condition. In our findings, basically there are 3 kinds of transformation of the slum settlements, namely: (1) Zero to Hero: settlements that used to be slum and then transformed into good settlement, being tough and staying sustainable even becoming an instagramable; (2) Zero to Ash: settlements that are slum and end remain up displaced and disappear; (3) Hero to Zero: settlements that are not slum then become slums. This transition condition perfectly reverses the resident's ability, government policy, as well as the combination in handling it. This study uses the point of view of criminogenic behavior and crisis communication in dissecting existing phenomena.

Keywords: community participation; sustainable development; slum settlement; inclusive; empowerment



25854**ANALYSIS OF ENVIRONMENTAL SENSITIVITY INDEX AT KARAS AREA, FAKFAK REGENCY, WEST PAPUA PROVINCE**

Rahayu Kusuma Risdianto, Rudy Parluhutan Tambunan, Suyud Warno Utomo

ABSTRACT

As a highly productive and dynamic ecosystem, development in coastal and marine areas often creates conflicts between interests, including oil and gas industry activities. One strategy to anticipate the effect of oil spills on the environment in coastal areas is carried out through an analysis of the Environmental Sensitivity Index (ESI). The study location is in the coastal area and waters of the Karas District, Fakfak Regency, West Papua. The purpose of the study is to determine the priority of areas that are sensitive to oil spills. This method is carried out through scoring each unit of land for vulnerability, conservation and social values. ESI Analysis is carried out through geographic information systems and classified into 5 classes of sensitivity levels. The land use classification was carried out through satellite imagery and field surveys conducted in December 2018. The results of the analysis showed that most (51%) were categorized as insensitive, sensitive low 24%, very sensitive 15%, moderately sensitive 6% and sensitive 4%. Although most are not sensitive, environmental protection must be carried out for sustainable development.

Keywords: environmental sensitivity index, oil spills, Karas, Fakfak.





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3	25814	ASSOCIATION STUDY BETWEEN THERMAL FRONT PHENOMENA AND BALI SARDINELLA (SARDINELLA LEMURU) FISHING AREAS IN BALI STRAIT Argo Galih Suhadha, Andi Ibrahim, Wikanti Asriningrum
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25324**PLANT BIODIVERSITY OF GREEN URBAN SPACE FOR URBAN COOLING SYSTEM**

Intan Nurul Aini, Hayati Sari Hasibuan, Tarsoen Waryono

ABSTRACT

The purposes of this research are to quantify the microclimate condition within urban open green spaces (UOGS), to analyse the structure of vegetation cover within UOGS as well as its urban cooling potential among each species. This research was undertaken at two urban green spaces in Tanjungpinang; Laman Boenda City Park and Pamedan Ahmad Yani City Park. The findings indicate that temperature within both parks is in the range of 28-32°C, although temperature within Laman Boenda is 1-3°C higher than temperature within Pamedan Ahmad Yani Park. *Mimusops elengi* L., *Alstonia scholaris* (L.) R.Br., *Wodyetia bifurcata* A.K. Irvine, and *Terminalia catappa* L. are discovered on vegetation cover area within both parks. Regardless of that findings, Pamedan Ahmad Yani Park has smaller number of big-size individual trees on its vegetation cover than Laman Boenda Park's, but the diameter size among trees within Ahmad Yani Park (in the range of 40-163 cm) is bigger than Laman Boenda Park's (in the range of 22-117 cm). *Swietenia macrophylla* (L.) Jacq., (mahogany tree) (30%), *Wodyetia bifurcata* A.K. Irvine. (foxtail palm tree) (15,4%), and *Terminalia catappa* L. (ketapang tree) (11%) are dominant species on vegetation cover areas within Pamedan Ahmad Yani Park while *Terminalia mantaly* H. Perrier (48%) and *Alstonia scholaris* (L.) R.Br. (16,4%) dominate vegetation cover area within Laman Boenda Park. *Terminalia catappa* L., *Alstonia scholaris* (L.) R.Br., *Swietenia macrophylla* (L.) Jacq., and *Cinnamomum burmanni* Nees & T.Nees) Blume are capable of absorbing carbon in a high amount and tend to be able to lower air temperature due to its capability.

Keywords: biodiversity; trees; small island city; tropical; urban cooling.



25596**MANGROVE'S VEGETATION STRUCTURE AND COMPOSITION (A STUDY: MANADO CITY, NORTH SULAWESI PROVINCE)**

Alve Hadika and Mahawan Karuniasa

ABSTRACT

The rise of land conversion in the city of Manado, for example reclamation, has made mangrove functions begin to be suboptimal. Therefore, conservation efforts need to be made to maintain the stability of the ecosystem. This conservation effort can begin with an inventory of the structure and composition of mangroves. One form of the inventory is the mangrove ecosystem vegetation analysis, so that changes or damage to the ecosystem can be known and make the conservation efforts can proceed as they should. This study aims to obtain results regarding the structure and composition of mangrove vegetation in the City of Manado, North Sulawesi. These results then will be the basis for policy making, monitoring changes in environmental conditions, and preservation of mangrove ecosystems in Indonesia. The research method used was descriptive and exploratory methods, while to obtain vegetation data was done by purposive sampling and plot sampling methods in each transect. Samples were taken by stratified random sampling. At the study site, no mangrove damage was found. This is thought to be caused by the role of the people of Manado City who care about the mangrove ecosystem and the research location was not located at reclamation location. The results found that there were 5 types of mangroves in the transec, all of which were classified as major mangrove categories. In general, mangrove vegetation in Manado City was dominated by *Sonneratia Alba* species. The value of the Diversity Index (H') and Uniformity (J') of the tree category in Manado City, is included in the low category. The height of the tree tends to be dominated by classes 5-10 m.

Keywords: Conservation; Mangrove; Vegetation structure; Vegetation composition.



25814**ASSOCIATION STUDY BETWEEN THERMAL FRONT PHENOMENA AND BALI SARDINELLA (SARDINELLA LEMURU) FISHING AREAS IN BALI STRAIT**

Argo Galih Suhadha, Andi Ibrahim, Wikanti Asriningrum

ABSTRACT

Many research studies have proven that thermal front have an impact on the physical and biological conditions of marine water. It has been widely used as parameters for determining fishing grounds. This study aimed to determine thermal front distribution and to analyze its relationship with the Bali Sardinella fishing zones in the Bali Strait. Aqua MODIS satellite imagery was utilized to obtain SST data. Meanwhile, Catch Per Unit Effort (CPUE) data of Bali Sardinella were collected to validate the results of our analysis. The data were then analyzed into spatio-temporal information and compared to the CPUE data and fishing points. The main facts that stand out are that the thermal front were predominantly found in the peak of first (April) and second (September) transitional season, which was the peak season for the thermal front to occur in a year. The least of thermal front occurred in South-west monsoon. The linear relationship was found when the peak of thermal front occurrence compared to the number of catch yield. Spatially, the thermal front mostly distributed in coastal areas. Based on matching distance analysis between Bali Sardinella fishing zones and thermal front with the maximum distance used (buffer twenty kilometres) show 36 matching points from 101 data compared or at range 35,6 %. In conclusion, there is a linear relationship between thermal front parameter and catch yield. It is still used to predict fishing zone, even though the correlation is not significantly found.

Keywords: Thermal Front; SST; Bali Sardinella; Fishing Areas; Bali Strait



25845**PROTECTION OF VULNERABLE ECOSYSTEM FROM OIL AND GAS ACTIVITY BY
HYDRODYNAMIC MODELLING IN KARAS AREA, FAKFAK, WEST PAPUA**

Rahayu Kusuma Risdianto, Rudy Parluhutan Tambunan, Suyud Warno Utomo, F B Prasetyo and Undang
Hernawan

ABSTRACT

The Karas coastal area is a productive ecosystem with high vulnerable ecosystem has evolved into an oil and gas industry, where potensial impact of oil and gas activities in this area need to be anticipated and planned comprehensively for sustainable environmental protection. The aims of the study is to analyze hydrodynamic conditions in its relation to the oil and gas industry in order to anticipate potential hazard and protect vulnerable ecosystem. The study was carried out by hydrodynamic modelling using MIKE21 HD model software. The field survey was carried out in December 2018. The modeling results showed that the current speed at the low tide, flood tide are 1.2-1.4 m / s. The pattern of current movements at low tide is dominated by current movements which are relatively stronger and quite dynamic from the northwest to the southeast and partly to the south with an average speed of around 0.8-1 m / s. The current at ebb tide is dominated by current from the northeast to the southwest with an average speed of 0.8-1 m / s. The general modeling results show that current from the north move away from sensitive area, so this condition have a relatively smaller impact on sensitive areas/ecosystem and can be chosen as a good time for short and brief oil and gas activities.

Keywords:



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25050**FACING CILEGON 2025 WATER CRISIS**

Adipati Rahmat Gumelar, Dwita Sutjiningsih, Abimanyu T Alamsyah, Setyo S Moersidik

ABSTRACT

This paper addresses the challenges in discussing renewal of clean water in the city of Cilegon in 2025. The predictions submitted by the Ministry of National Development Planning and also the Ministry of Public Works and Public Housing, reminded about the possibility of a deficit in air resources in the city of Cilegon, then for the City of Cilegon it will no longer be fulfilled. The air crisis which is expected to have an impact on industrial decline and a decline in the level of society must be avoided as far as possible. This research uses a dynamic system method that is able to model the air movement of the City of Cilegon, to then build a scenario of anticipation of the air crisis in 2025. This study discusses how to arrange the air planning of the City of Cilegon which can be used by using air resources in the City of Cilegon independently and sustainably . These findings are expected to contribute to building an agreed city air resources governance scenario to support the improvement of future crises. This study discusses why removing water in the City of Cilegon, the Government of the City of Cilegon needs to improve its water using new air sources, namely from sea air and rain water, and helps support groundwater that has been changed in price.

Keywords: Water crisis, Cilegon, System Dynamics, Coastal City.



25068**ACCELERATION OF CLEAN WATER FULFILLMENT IN INDONESIA**

Yuki Mahardhito Adhitya Wardhana

ABSTRACT

The government has a target of providing 100% clean water through the 100-0-100 program, the target is in accordance with the Medium Development Plan (RPJMN) 2015-2019 and the target of achieving the Sustainable Development Goals (SDGs) in 2030. The realization of clean water supply until 2018 is 73% and with only growth of 2 % per year. The cost needed to achieve the target of fulfilling 100% of clean water in Indonesia is 253 trillion Rupiah. Within fiscal limitation from the State Budget, financing alternatives need to be developed. This research will see the most effective scheme in accelerating the fulfillment of clean water in Indonesia, but still considering environmental sustainability and balance. The purpose of this study is to determine an effective and efficient clean water supply scheme in Indonesia. The method that is currently being used to conduct this research is risk-based allocation method. The results of this study are to show that PPP scheme is one the most effective sustainable scheme compared to other schemes available in Indonesia. Through a PPP scheme, 43.8% of allocated risk is transferred from government risk to Project Company, and about 25% becomes shared-risk. By this effectiveness, it is predicted that using PPP scheme could mitigate risk of increase in construction cost about 71.6 % and 56.9 % of O&M cost.

Keywords: Water; PPP; Sustainability.



25285**USING DOMINANT INFORMATION IN RAINWATER HARVESTING MOVEMENT
AS A WATER MANAGEMENT STRATEGY THROUGH UTILIZATION OF
SUSTAINABLE RAINWATER**

Robby Cahyanto, Jatna Supriatna, Suraya Abdulwahab Affif

ABSTRACT

Decreasing the volume of raw water sources results in an imbalance between clean water needs and raw water supply. Therefore good water management. One of them is the use of rainwater through rainwater harvesting activities. The Banyu Bening Rainwater Community in Yogyakarta is one of the voluntary associations that has successfully implemented water management by harvesting rainwater through sustainable use of house roofs. This community spreads sustainable rainwater harvesting techniques to various locations in Indonesia by utilizing the dominant information they have. Dominant information is one of the sources of strength and is information that is difficult or cannot be verified, according to the actor-centered power theory (Actor-Center-Power). This study aims to analyze the factors that influence community decision-making to participate in rainwater harvesting activities, find out the sources of information that form the basis of decision making, and find out the influence of the dominant information in community decision-making. The researcher used a qualitative approach to the type of research in a case to obtain a picture of the dominant information strength in the spread of the rainwater harvesting movement. Data is collected by triangulation/combination (indirect structured interviews) with respondents of rainwater harvesting plant owners. The results of the study show that community decision-making to be involved in rainwater harvesting activities is influenced by (1) promotion of rainwater harvesting activities as an alternative to overcome water scarcity, (2) material or content of rainwater harvesting promotion delivered by the Banyu Bening Community, and (3) the main reasons people participate in rainwater harvesting activities. Sources of information that form the basis of community decisions from circulating oral information, direct promotion or socialization activities, print media (leaflets), and social media. The influence of dominant information in making decisions regarding community participation has made people interested in using and participating.

Keywords: Water management; Rainwater harvesting; Dominant information

25383**PEOPLE ACCEPTANCE OF RAINWATER HARVESTING IN FISHERIES
SETTLEMENT COASTAL AREA, NORTH JAKARTA**

Adenira Hargianintya, Hayati Sari Hasibuan, Setyo Sarwanto Moersidik

ABSTRACT

Muara Angke Fisheries Settlement Area, North Jakarta is a region that potential to experience water scarcity caused by limited water piped network and accompanied by poor groundwater quality due to seawater intrusion. In this situation, rainwater can be an alternative water source to meet household water needs. However, the implementation of Rainwater Harvesting (RWH) in hamlets 22, Muara Angke has not been a priority. Hence, this study aims to assess the acceptance of residents on RWH, their willingness to participate in implementing RWH, and the challenges of installing and maintaining RWH. The study uses the Multi-Dimensional Scaling (MDS) method with social, economic, and environmental aspects. The social aspect consists of 3 indicators: social capital, education, and government support. The economic aspect consists of 3 indicators: income, maintenance cost, and saving. The environmental aspect consists of 3 indicators: the quality, the quantity, and the continuity of rainwater. Data collection in this study involved 93 questionnaires which distributed after socialization of the RWH program and its benefit to the residents. This study analyzes the local people acceptance after socialization the RWH program and benefit to the residents. Results showed that education, social capital, government support, income, maintenance costs, saving, and 3 aspects of rainwater were statistically significant in explaining local residents acceptance of RWH in the study area. The people acceptance of RWH after socialization was change compared to before the socialization.

Keywords: Rainwater Harvesting, people acceptance, Coastal Area, Community Access

25390**DISPERSION OF IODINE-131 RADIOACTIVE AIRBORNE IN THE FORM OF CH₃I, HOI AND I₂ FROM RADIOISOTOPE PRODUCTION FACILITY STACK TO THE ENVIRONMENT**

Gatot Suhariyono and Makhsun

ABSTRACT

Radioiodine (I-131) is one of the large enough radioactive substances to get attention, because of its volatile nature and can damage the thyroid gland from the people health. I-131 sampling by using a charcoal device is carried out in the stack, before it is released into the environment and in the outdoor. These charcoal devices include charcoal filters, silver coated gauze and glass fiber paper filters. Charcoal filters are used to adsorb organic Iodine methyl Iodide (CH₃I). Silver coated gauze is used to adsorb elemental Iodine (I₂). Glass fiber paper filters are used to adsorb inorganic hypiodous acid iodine (HOI). The release of I-131 activity concentrations on average from the stack and the concentration of I-131 activity in seven outdoor research locations in outdoor settlements around the isotope production facility are still below the standard level of I-131 radioactivity in the air (530 Bq/m³) based on Head regulations of Nuclear Energy Supervisory Agency (BAPETEN) No. 7/2013. Potential risk of removable dispersion radioactive iodine-131 from the stack of radioisotope production facility for the health of residential communities around radioisotope production facility does not pose a significant risk to public health (RQ <1). I-131 Dispersion from the stack to the settlement average with the north of the stack, the concentration of I-131 forms a parabolic curve starting to rise from the Sengkol settlement (0.8 km), the highest in BATAN Indah (2.6 km) and decreasing in Jaletreng (4.2 km). The activity concentration of I-131 during rain and high humidity tends to rise, while the presence of sunlight decreases the activity concentration of I-131. The activity concentrations of I-131 in stack from large to small were CH₃I (63.03%), I₂ (30,27%) and HOI (7.70%) respectively. While the activities concentration of I-131 on average in the outdoors were CH₃I (61.12%), I₂ (20.37%) and HOI (18.39%).

Keywords:

25391**IMPACTS OF LAND USE AND LAND USE CHANGE IN RIVER BASIN TO WATER QUALITY OF CIRARAB RIVER, INDONESIA**

Kus Indriyani, Hayati Sari Hasibuan, Misri Gozan

ABSTRAK

Land use and land cover (LULC) changes are two main factors contribute to the decreasing quality of water. This research aims to assess the impacts of land use and land cover changes on the river basin towards water quality of Cirarab River. The method of this study is GIS analysis with data land use/land cover changes from 2013 to 2018. The water quality is analyzed based on Government Regulation No. 82/2001 concerning Water Quality Management and Water Pollution Control. Furthermore, the potential pollution load originating from residential on the riverside calculated and compared to the maximum pollutant load. Water samples were collected five times a day in three locations: Curug Kulon, Cukang Galih, and Kadu Jaya. The result showed the percentage of land use in the river basin, namely: residential (15.42%-42.48%), industry (6.73%-44.22%), and paddy field (7.15%-26.49%). Between 2013 and 2018, residential and industrial areas increased respectively of 110.08ha and 388.37ha; meanwhile, shrub/vacant land decreased by 407.15ha. The calculation results of potential pollution load amounted to 2615.78 kgBOD/day (117% of the total maximum pollution load (2234.30 kgBOD/day)) and 3713.87 kgCOD/day (20% of the total maximum pollution load (18619.20 kgCOD/day)). This study found that the values of river water quality parameter have exceeded the standard. The value ranged as follows: the temperature (28.0-30.1oC), pH (6.77-8.08), COD (15-124 mg/l), and BOD (3-57 mg/l). Almost all monitoring points of COD and BOD parameters exceed the required quality standard. In general, the water sample collected from the river basin with shrubs/vacant land has relatively better water quality compared to those collected from residential and industrial areas. These results help to understand the impacts of land use to water quality and are useful to formulate river management strategy and land use management in the river basin.

Keywords: land-use change, land-cover, water quality, pollution load, river

25442**BEHIND THE TRASH**

Mana Kakimuna

ABSTRACT

Background. Trash is one of the most serious environmental issues. People strive to solve the problem with reducing the use of plastic and figuring out the method to recycle efficiently; however, the story of trash pickers is barely on the topic. This discussion will examine the importance of understanding the people behind the trash by investigating the trash pickers community in Cirendeui, Indonesia. Before doing the research, the author has visited the communities several times and had been given the impression of pity, poor and helplessness; however, since the waste management system in Indonesia is unclear, they must be playing a significant role. Methods. The author carried qualitative research including fieldwork and interview in Bahasa Indonesia, with supports from a local non-profit organization, XSProject, which has been communicating and supporting the trash pickers for a decade. Results and discussion. The results from the research indicate that they contribute to recycle to a great extent. Their waste disposal method is quite systemized. They are also skillful, active and ambitious. There is a person who has the second job, skill to make aquarium for his children, own shops and teach sawing. All group leaders of trash pickers, called Lapak have a skill to build houses and carts for his men, anak-buah. Their skills of sorting the trash let XSProject reuse more than hundreds of kilograms of plastics including plastic packaging, grocery bags and rice sacs each year. Conclusion. Their contribution for Indonesian environment is underrated although it is huge. The problems are the ignorance and underestimation of the society. People should consider the integrated solution for both the environment and those trash pickers. The ideal solution would be formalizing waste disposal system, officially hire trash pickers for their stable life, and let their children access to education for brighter future.

Keywords: Sustainable development; Environment; Human security; Waste disposal; Trash;



25489**STUDY OF CLEAN WATER NEEDS BALIKPAPAN, EAST KALIMANTAN, INDONESIA**

Ulfa Fitriati, Holdani Kurdi, Aulia Isramaulana and Mutiara Mayang

ABSTRACT

Clean water in human life has a very important function. The trend that is happening now is reduced availability of natural water resources that can be used directly from day to day. This is due to influence of increasing development progress, population growth increase so that the capture of water by the soil as a source of ground water is reduced and industrial waste pollution in rivers as one source of clean water on the surface. The Human need for clean water is directly proportional to the population growth in an area. In Balikpapan, which is the capital city of East Kalimantan Province has population 735,850 people by 2015, which represents 22% of total population of East Kalimantan. This research is done by calculating the projection of clean water requirement in Balikpapan up to 20 years ahead and testing water quality by direct testing in the field using some tools that want to know the physical parameters contained in that water. The results obtained for needs of clean water have not been sufficient and the water quality data distribution obtained from the test water sample Tirta Manggar PDAM has qualified the water requirements Class I. In the calculation of clean water needs of Balikpapan City above, the percentage of non-domestic with domestic demand is 50.30% its mean Balikpapan City have a lot of facility especially office and international company. Balikpapan City needs to immediately add the capacity of Intake because in 2017, Intake in Tirta Manggar PDAM is unable to meet the needs of clean water in Balikpapan City. Tirta Manggar PDAM Tirta Manggar has almost reached 80% service coverage, but loss of water equal to 36.92%, so Tirta Manggar PDAM must reduce water loss by 20%.

Keywords: Balikpapan; clean water need; PDAM.

25582**ECONOMIC OR RELIGIOUS INFORMATION? THE EFFECT OF AWARENESS
INFORMATION ON THE LEVEL OF FOOD WASTE**

Khairun Nisa, Chaikal Nuryakin

ABSTRACT

FAO in 2009 estimates that globally, one in every four calories of food produced for humans is ultimately not consumed or being food waste and loss. In the Food Sustainability Index Report 2016, Indonesia finished second as the world's largest food waste producing country. It is interesting because 87% of the Indonesian population is Muslim, and wasting food is forbidden in Islam. Therefore, efforts to reduce food waste are crucial to be examined, including a religious approach. This research aims to observe the behaviour of consumers related to food waste in a field experiment by giving posters containing food waste-related information. Two different groups of consumers will be given posters containing economic data related to food waste (economic info) and posters containing religious evidence that prohibits the act of throwing food (religious info), while one other consumer groups are left without treatment (control). With the Difference in Difference (DID) analysis, it is found that both types of posters containing religious evidence and economic data do not affect the behaviour of consumers to reduce food waste. From a qualitative survey with 62 respondents, it was found that posters containing economic info placed at the consumer desk were only realized by 69% of respondents and only 29% read the posters carefully and affected. For posters that contain religious info, based on the results of a qualitative survey with 77 respondents, found that the posters were only realized by 55% of respondents and only 23% of respondents read the posters carefully and affected. It also found that the cause of respondents' food waste generation is almost the same as the causes of food waste by consumers in high-income countries such as in a hurry, portions of food too large, food taste is not right, and already satiety.

Keywords: Food Waste, Experimental Method, Awareness Information, DID

25609**GROUNDWATER CATCHMENT AREA FOR HOUSEHOLD IN BUKIT RAYA
SUBDISTRICT, PEKANBARU, INDONESIA**

Fakhri Rafi, Mahawan Karuniasa, Abdurrachman Asseggaf

ABSTRACT

Clean water demand increase along with population growth and urban development. People switching from surface water to protected and deep groundwater wells. The large amount of groundwater use makes the groundwater level decrease. Pekanbaru is one of the cities with rapid urban development and population growth, especially in the Bukit Raya subdistrict. The existence of government agencies, public facilities, industries and the increasingly rapid construction of settlements that use groundwater. This study identified the catchment area of groundwater and groundwater used by households and evaluating groundwater balance in 2014 to 2018 then projecting until 2023 using the water balance method according to the Thornthwaite & Mather method and the Ffolliot method. Result of this study showed that every year the value of calculation of water balance did not deficit until 2023. Based on our findings, households and the government need to maintain the quantity of water in the groundwater catchment area by providing additional water supply systems.

Keywords: Water balance; groundwater catchment area; households demand



25712**ANALYSIS OF THE IMPACT OF URBAN DEVELOPMENT ON RIVER WATER QUALITY CASE STUDY OF THE PESANGGRAHAN RIVER**

Muslim Aminuddin, Chotib

ABSTRACT

The Pesanggrahan River from the characteristics its river width is an intermediate river. The chemical and biological content of Pesanggrahan River water shows that the Pesanggrahan River has been polluted. Water pollution in the Pesanggrahan River is greater in the downstream area, this is due to the accumulation of chemical compounds from industrial and domestic waste. Most of the Pesanggrahan Watershed are residential areas. City development in the Pesanggrahan Watershed has a major influence on the decline in the water quality of the Pesanggrahan River. The biggest development occurred in the period 2004-2010. Then, in the 2010-2013 period the development was more on the changes in the structure of the Pesanggrahan River flow, namely on river widening and straightening. The area in the Pesanggrahan Watershed is widely used as an illegal industrial area, thus violating existing spatial provisions. The role of the Jakarta City Government in maintaining river water quality is in the function of building and supervising buildings that violate the rules. This refers to the granting of permits and finally to prosecution of parties who violate and play a role in decreasing the quality of the Pesanggrahan River water.

Keywords: Pesanggrahan River, Pesanggrahan Watershed, Water Quality.



25722**WATER SUSTAINABILITY FOR URBAN WATER FULFILLMENT: GUNUNG PUTRI,
KABUPATEN BOGOR, INDONESIA**

Armeinita Octavia Widyarman

ABSTRACT

One of the highest population growths of urban areas in Kabupaten Bogor is Kecamatan Gunung Putri. This population growth has led to higher activities which increase the needs of clean water. Water Supply Company is one of the urban water provisions, but to improve their services, especially in quantity aspect, will depend on the water availability on the area. The purpose of this paper is to identify the service quality gaps between water supply and the benefits received by the users (customers), and to analyse the water sustainability regarding increasing water needs in urban area. This research uses a quantitative and qualitative approach, data collection is done through area observation and questionnaires. The assessment of service quality is carried out through weighting based on the Likert scale, data processing and analysis methods are carried out through the Structuring Equation Modelling (SEM) method, then the water sustainability analysis is carried out by in-depth interview and agency visits, as well as literature reviews. The results showed that there is a gap quality service in quantity aspects due to lack of management, and there is a chance of water provision degradation for the increasing of urban water supply (quantity). The conclusions can be done by forming irreparable factors to reduce the gap of service quality between water supply and benefits to the users, and to create other solutions to preserve water availability.

Keywords: Water supply company; Service quality; Water resources; Water sustainability



25726**THE BLUE WATER FOOTPRINT OF BLOCK-PRINTED BATIK COLOURED BY
NATURAL DYE OF MYROBALAN (*Terminalia bellirica* Roxb.) MORDANTED BY
ALUM AND COPPERAS**

Widhi Handayani, Alberta Rika Pratiwi, Budi Widianarko

ABSTRACT

The production of batik by small and medium enterprises in Central Java, Indonesia, has been reported to create environmental problem, particularly in the form of surface water pollution in some batik centres. Pollution which is related to the use of synthetic dyes has been considered to show adverse impact to the environment and community, and this situation has triggered to the use of natural dyes as the latter is considered to be eco-friendly. However, the use of natural dye extract could contribute to the consumptive water use, as the fabric should be immersed into the extract repetitively, and this could make up to the high of Blue Water Footprint. This study aims to examine the Blue Water Footprint (BWF) of batik production coloured by natural dye extract of Myrobalan (*Terminalia bellirica* Roxb.). The research was conducted through experiment and observation in a large-scaled batik home industry in Jarum village, Klaten. An experiment was designed by preparing white cotton clothes of 2.00 m x 1.15 m in size which has been block-printed in the same motif. A natural dye extract of Myrobalan was applied onto the clothes, with alum and copperas as the mordants. Water usage during dyeing process as well as other processes were observed and calculated. The result showed that the type of mordants influence the colours resulted on the block-printed batik clothes. The Blue Water Footprint of block-printed batik of both treatments were in the range of 156.48 – 158.70 L/pc or equal to 68.52 L/m² of fabric, on average. Surprisingly, it was the dewaxing process which contributes the biggest portion of the Blue Water Footprint, and therefore the water sustainability of natural-coloured batik is questionable. Some efforts to increase the efficiency of water is required by promoting awareness of batik artisan, as well as treat the wastewater and implementing cleaner production.

Keywords: Home industry; Block-printed batik; Blue water footprint; Mordant; *Terminalia bellirica*



25826**GARBAGE POLLUTION IN THE CISADANE RIVER IN THE TANGERANG REGION**

Hinijati Widjaja, Alicia Wellsan, Gabriella Mistissy, N. Dhea Madinah A.Q., Febri Yenny, Olivia Dais A.

ABSTRACT

The Cisadane River that crosses the Tangerang area every year enters 14-17 tons of garbage entering from the surrounding land and along with the flow of water from its upstream. The influx of large amounts of garbage makes the function of the river as a source of raw water and flood control becomes disrupted. This research was conducted with the aim to determine the impact of waste pollution on the Cisadane River in Tangerang Region. In addition, this study can conclude that waste has caused: siltation in several parts of the river such as riverbanks. The volume of waste from 13 subdistricts in the Tangerang area, in August 2018 which is usually 14 tons to 17 tons, is compounded by the presence of garbage carried from the water flows of Bogor Regency and South Tangerang. Whereas 61% of the area is residential, 18% are paddy fields and 17% are airports; so that it can be understood if floods always occur in some areas of Tangerang City. This study concluded that waste has caused siltation at the edges, bodies and banks and disrupted the function of the Cisadane River. In addition, certain areas are susceptible to flooding such as Karawaci District, Priuk District and Neglasari sub-district, Curug District, Kosambi District, Mekar Kondang District, Paku Haji District, Sindang Jaya District, Teluk Naga district.

Keywords: Cisadane River, Tangerang, waste

25887**SOLID WASTE MANAGEMENT IN SMALL ISLAND DESTINATIONS A CASE STUDY OF PENYENGAT ISLAND - KOTA TANJUNGPINANG**

Zainul Ikhwan

ABSTRACT

Background: Solid waste management is a critical, complex, multi-dimensional challenge for societies. The nature of solid waste management in each community can differ based upon a number of factors including economic activities and geographies. Solid waste management in small island tourist communities is often complicated by their isolated geographies and tourism dominated economies, resulting in even greater challenges for ensuring sustainable solid waste management. The purpose of this study was discusses a case study of the small tourist island of Penyengat, Tanjungpinang that has addressed their long-standing issues of solid waste management through a governance and management approach centered on a multi-stakeholder partnership. **Method:** This study conducted the qualitative research were implemented by means of semi-structured interviews, which were supplemented by observation for data collection. Interviews were conducted with 21 stakeholders in the island's waste management system, representing all groups including public and private sectors, non-governmental organizations, community based organizations, waste service users and the informal waste sector. **Results and Discussion:** Initiatives include source separation, expansion of collection services, collection fees, material reuse projects, education and awareness initiatives and enhanced planning. **Conclusion:** The partnership involves collaboration between a community-based organization and environmental non-governmental organization, each having broader ties to stakeholders in the island community.

Keywords: waste management, Penyengat, small island



25894**THE IMPORTANCE OF WASTE MANAGEMENT KNOWLEDGE TO ENCOURAGE
HOUSEHOLD WASTE SORTING BEHAVIOR IN SMALL ISLAND
(STUDY PENYENGAT ISLAND)**

Zainul Ikhwan, R. Hamdani Harahap, Lita Sri Andayani, Miswar Budi Mulya

ABSTRACT

Background: Waste sorting behavior in Small Island is still low and becomes the reason of the government policy enactment about recycling programed through waste bank which unfortunately only 30% of it works regularly and small island. The main problem of recycling is the households doesn't have waste separation behavior, thus all the solid waste gets mixed. The purpose of this study was analyzed the association between waste management knowledge and waste-sorting behavior at the household level in Penyengat Island. Method: This study conducted the quantitative research using a cross sectional design. A sample of 165 people, taken by stratified sampling. Data analysis with Chi-square test and the logistic regression test was applied to identify the most dominant variable that influenced the waste-sorting behavior of households in Penyengat Island. Results and Discussion: Waste sorting behavior at the household level in Penyengat island is only 2% with waste management knowledge, which relates to waste sorting behavior as the dominant factor ($p < 0.05$). Logical Regression Equation In ($p / (1-p)$) = $-1.771 + 1.010$ Knowledge of managing waste + 0.859 education + 0.642 Surface Area. Conclusion: Increasing understanding and sense of need and waste management facilities can improve sustainable sorting behavior

Keywords: Waste management knowledge, Small island, Sorting Behavior



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23350**URBAN GROWTH OF PALEMBANG AND URBAN HEAT ISLAND IMPACT USING
REMOTE SENSING AND GIS TECHNIQUE**

Johannes Adiyanto, Adhika Atyanta

ABSTRACT

Palembang has a new identity after a sports event. Palembang transforms from river city to landed city. A lot of swamps burry become 'land' to fulfil the area for sports facilities. This research analyses the transformation of Palembang using remote sensing and spatial metrics. This research used 3 different images of the map take from Landsat image. That map separates into 4 categories: first category maps from 2001 and 2003, before National sports event (PON XVI in 2004); second map, after SEA Games, maps from 2014; the third category from the map of 2015 and 2016 (before Asian Games 2018) and the last map at 2018, after all sport event at Palembang. Those maps are taken from Landsat 7 dataset and were analysed into two different categories. The first categories were analysed the built-up index and the second one about land surface temperature. This research shows that sports events can transform Palembang into a modern city The result of analysis shows that the urban growth of Palembang brought the impact. The built-up growth in sub-urban area and that have a correlation with the infrastucture construction. That 'new' area brought UHI impact to urban area of Palembang.

Keywords: Urban Growth; Remote Sensing Analysis; GIS Technique, and Land Surface Temperature



25254**STAKEHOLDER ANALYSIS AND DECISION ON VERNACULAR DEVELOPMNET AS
SUSTAINABLE URBAN SPATIAL**

Farida Murti, Christiono Utomo

ABSTRACT

In each stage of development of the vernacular settlement, there must be many decisions to be made to choose the best alternative as part of the urban spatial structure. Vernacular settlement was born from ethnic societies on ethnic traditions, using local techniques and materials. The change and development of the built vernacular must be carried out by multidisciplinary expertise because of the diversity of stakeholders. It is a form of respect for the cultural identity of the community that has been established. This research presents a decision model for development solution of a settlement heritage as urban spatial. There are factors supporting the achievement of successful vernacular settlement as a settlement heritage. The factors are effective design collaboration process, as well as the supporting factors of the concept of sustainability. This study uses satisficing options based on Analytical Hierarchy Process (AHP) method to determine the best solution among three inclusive, exclusive or process combining alternatives. Exclusive means that vernacular settlement is developed in a special function as a cultural preserve or developed in certain clusters in parts of the city. Process combining means vernacular settlement is developed to grow alongside urban development. The selection is determined by stakeholders based on their preferences of the criteria. There are five criteria which are (1) building cultural and cultural heritage, (2) constructive materials and techniques, (3) regional and environmental adaptation, (4) energy efficiency and sustainable design, and (5) natural hazards and risk mitigation. The results show that an "inclusive" design is determined as the most suitable option. It means that vernacular settlement will become part of the development of urban modernization, it can be integrated into various functions of property buildings. This decision can help stakeholders achieve a balanced strategy for the development of vernacular settlements as urban spatial planning.

Keywords: Vernacular settlement; urban spatial; sustainable; decision; stakeholder



25330**PERCEIVED BENEFITS AND CHALLENGES OF PRACTICING URBAN AGRICULTURE BY URBAN GARDENERS IN SAWAH BESAR SUB-DISTRICT, CENTRAL JAKARTA**

Janice Jacob Kayan Jap, Tri Edhi Budhi Soesilo

ABSTRACT

The contribution of urban agriculture (UA) to the economic, social, and environmental aspects of sustainable urban development has been recognized by a growing body of literature, but evaluations of their benefits from developing countries are still scarce. In Jakarta, several household and community-scale UA initiatives have been implemented by multiple government institutions to improve food security. Considering that urban gardener's motivation and access are two key determinants in starting and sustaining UA, this study seeks to evaluate the perceived benefits and challenges experienced by urban gardeners in Sawah Besar Sub-district in Central Jakarta. Respondents who fit this study's target population criteria were selected via snowball sampling. This resulted in 53 gardeners who completed questionnaires about gardening motivations, perceived benefits, and challenges of gardening in dense and resource-poor environment. Results were analyzed using descriptive statistics and revealed that gardeners mainly practiced several forms of community-scale gardening. This corresponds to gardeners' motivation to pursue the social aspects of gardening (hobby, socializing, self/group empowerment, or education). Analysis of perceived benefits showed that social benefits were most evident and commonly experienced by respondent. Three most pressing challenges to sustain gardening were lack of space for gardening, increasingly expensive gardening practice, and lack of government institutions' support. These results provide insights to the kind of supports that can be tailored to improve UA practice in Jakarta.

Keywords: Developing countries; Edible landscapes; Perceived benefits; Sustainable development; Urban agriculture



25413**DEVELOPING WEB BASED GIS MODEL LAW IN THE CITY PARE PARE,
SOUTH SULAWESI**

Mulyawan, Hayati Sari Hasibuan, Ahyanudin Sodri

ABSTRACT

The town of Pare Pare in South Sulawesi, has a population growth rate of 2.2% annually. Population growth requires land for schools. The strong demand for land for the development of regulation must be provided to prevent inconsistencies in the spatial plan and changes in land use functions. One of the causes of land-use change and abnormalities in regional spatial plans (RTRW) is the lack of information on the suitability of land for the development of regulation. This article aims to build an information model based on GIS for the adequacy of housing development in the town of Pare Pare self-built housing for people of Pare-Pare. The method used is the spatial analysis of the recovery space and mark the data using the software (GIS). As for the perceptions and social interest Done retrieving data through interviews and dissemination of the questionnaire - interviews with government. And the questionnaire distributed to 355 residents. The results of this study show that the density of colonies concentrated in the city center. The settlement area moved to suburban areas where land conversion caused. The forest area of 3055 hectares in 2010 decreased to 2,971 hectares in 2014, and rice fields Decreased by 837 hectares, while land for settlements increased to 923 hectares in 2015. This GIS-based models show the distribution site may space suitable for the allocation of the settlement zone following the carrying capacity of the environment and the regional development plan of the city of Pare-Pare. Produces a digital database for spatial urban growth and land transformation by integrating GIS with websites. This settlement development model based on GIS Web sites should be a reference for people to make decisions on the advice of their housing slots / regulations. Moreover, it could be models as tools to anticipate the negative effects of the inconsistency of spatial planning in the town of Pare-pare. Produces a digital database for spatial urban growth and land transformation by integrating GIS with websites. This settlement development model based on GIS Web sites should be a reference for people to make decisions on the advice of their housing slots / regulations. Moreover, it could be models as tools to anticipate the negative effects of the inconsistency of spatial planning in the town of Pare-pare. Produces a digital database for spatial urban growth and land transformation by integrating GIS with websites. This settlement development model based on GIS Web sites should be a reference for people to make decisions on the advice of their housing slots / regulations. Moreover, it could be models as tools to anticipate the negative effects of the inconsistency of spatial planning in the town of Pare-pare.

Keywords: Model, settlement area, the geographic location information system (GIS)

25433**STRATEGY FOR MANAGING PUBLIC PARK MAINTENANCE AS ONE EFFORT FOR THE IMPLEMENTATION OF SUSTAINABLE GREEN OPEN SPACE**

Silia Yuslim

ABSTRACT

The problem in managing the existence of Green Open Space in Indonesia, especially Jakarta lies in the management of maintenance. Efforts to maintain open green space, especially public parks, do not run optimally. Public parks that have been well built, ultimately cannot function optimally. This study aims to provide an alternative strategy for managing public park maintenance that can maintain and enhance the role of parks in a sustainable manner. The research method used is descriptive analysis and comparative study methods. Sampling is done by purposive sampling. Data collection is done by spreading the two-way assessment matrix from the Leopold Method in a limited manner to the parties involved in the relevant agencies followed by in-depth interviews and observations. Data analysis will be carried out descriptively and the Delphi Analysis of the assessment matrix is matched with the results of comparative maintenance management studies in Europe. The results of the study show that the involvement of parties non-government (private and local communities) can optimize the maintenance of public parks. Thus, the function of public parks as one of the forms of green open space as a forum for social interaction and providing a balance for local ecosystems can work.

Keywords: Maintenance Management Strategy, Public Park, sustainable Green Open Space



25437**PROBLEMS IN THE PLANNING OF AREAS AND POLICY: MISALIGNMENT
BETWEEN REGENCY SPATIAL PATTERN AND PROVINCE SPATIAL PATTERN: A
CASE STUDY IN PURWAKARTA, WEST JAVA**

Grace Sondang Yunika and Mahawan Karuniasa

ABSTRACT

Planning for the development of sustainable urban development has become an effort to monitor levels of urban expansion that appear to be out of control. The purpose of spatial planning for sustainable especially to against bad effect of city development by using land use planning activities. Each province and district/city is mandated to have a regional spatial plan (RTRW) regencies/cities that are mandated in the Constitution No. 26 of 2007 About Spatial Planning. Basically, RTRW of regencies/cities are made by referring to spatial planning of national areas and spatial planning of province areas; guidelines and instructions for implementing the spatial planning field; and regional long-term development plans. In fact, regencies/cities spatial pattern are not always in line with provincial spatial pattern. The purpose of this research is to analyze the spatial planning misalignment between Purwakarta Regency and West Java Province. This research used geographic information system (GIS). The data process was conducted with overlay between space pattern of West Java Province with Purwakarta Regency space pattern. Synthetic map, result of overlay between provincial and district spatial patterns will capture the misalignment between provincial and district spatial planning as indicated by the extent and distribution of loci. The result shows that 60.27% of the spatial pattern of Purwakarta Regency is not in line with the spatial pattern of West Java Province. Spatially, the the misalignment of distribution between provincial spatial pattern and spatial pattern is evenly distributed in Purwakarta Regency. There are 140 schemes of misalignment between provincial and district spatial pattern. 21 schemes are in line between provincial spatial pattern and district spatial pattern, 86 schemes are not in line between provincial spatial pattern and district spatial pattern, and 33 schemes that contain elements of water bodies (rivers, reservoirs and Situ) are considered to be in line.

Keywords: spatial planning, spatial policy, spatial pattern, urban development, sustainability



25461**EMISSION INVENTORY AND PREDICTION OF ROAD TRANSPORTATION SOURCES IN DKI JAKARTA BASED ON AUTO COHORT MODEL WITH EMISSION SUB MODEL**

Merita Gidarjati

ABSTRACT

In the last couple of years, DKI Jakarta has been mentioned several times in the news as one of the top cities with the worst air pollution in Asia or Southeast Asian countries. According to the previous studies, transportation has the highest contribution to the emission inventory of CO₂ in DKI Jakarta. Most of the study in Indonesia used the calculation of CO₂ emission by using the total fuel consumption. The age of vehicle has rarely been included as one of the important factors in this calculation of the CO₂ emission. Therefore, the author will use the vehicle age cohort models using the STELLA application. With this model, emission inventory for air pollutants such as CO, HC, NO_x, and PM₁₀ will be able to be calculated based on age cohort. The result of the calculation shows that motorbike was the major contributor to the increasing of four pollutants in DKI Jakarta from 2007 to 2018 and will still be the major contributor until 2040 if there is no intervention to address the issue. In 2018, the major contributor for CO was Motorbike (51.95%), for HC was Motorbike (79.59%), for NO was Bus (50.32%) and for PM was Motorbike (85.9%). In 2040, if there is no intervention, the major contributor for CO will be Motorbike (67.42%), for HC will be Motorbike (88.54%), for NO will be Motorbike (41.09%) and for PM will be Motorbike (92.43%). The car using gasoline as fuel will become the second major contributor until 2040 if there is no intervention to address this condition. Through this study, it is identified that the motorbike with production year before and on 2013 will be the major contributor for air pollution.

Keywords: Air Pollution; Auto Cohort Model; Emission Inventory; Road Transportation Sources.



25817**MANGROVE ECOTOURISM MANAGEMENT BASED ON GIS AND REMOTE SENSING IN SUKAKERTA COAST**

Tjiong Giok Pin, Jatna Supriatna, Noverita Dian Takarina, and Rudy Parluhutan Tambunan

ABSTRACT

Ecotourism is one of the fastest growing sectors in the tourism industry at present. The market for nature holidays especially located in coastal is certainly a growing one. However, the current management of ecotourism infrastucture is lacking the spatial platform and analysis. As a result, ecotourism located in coastal has experienced damages. Correspondingly, this study aims to employ the GIS and remote sensing to support mangrove ecotourism infrastucture management in Sukakerta coast, West Java. For this purpose, this study try to identify the appropriate areas for mangrove ecotourism development. The methodology used in this study including the land classification and spatial analysis. The Landsat 8 OLI were used to obtain the latest land uses and infrastructures. Several Landsat band combinations were performed that include NDVI, NDBI, and NDWI in order to assess the mangrove cover land uses and infrastructures. A GIS was performed to classify the mangrove cover land uses and infrastructures derived from Landsat 8. In this study we confirm that remote sensing and GIS approach is an innovative discipline to manage the mangrove ecotourism by integrating spatial and non-spatial data. After identifying the potential sites, a demonstrative plan can be made for sustainable ecotourism development based on locally available mangrove resources.

Keywords: ecotourism; GIS; mangrove; remote sensing; spatial analysis.



25819

UTILIZATION OF SPOT 6/7 TO ANALYZE OPEN GREEN SPACE IN SURABAYA CITY

Mohammad Ardha, Udhi Catur Nugroho, Nurwita Mustika Sari, Indah Prasasti

ABSTRACT

The movement of people from villages to cities is a fairly common phenomenon today. One of the destinations for urbanization is the city of Surabaya. Increasing community needs are human needs for shelter, and human needs to make a living. One of the many changes in land use is the change in land use to built-up land. Nowadays the increase of built-up land also raises a new phenomenon where the reduction of open space due to changes in land use, therefore, the government plans to increase the amount of open space for planting vegetation or better known as green open space. This study aims to see the extent to which the city of Surabaya in providing green open space for its citizens by using the NDVI method to see trends in changes in green open space in the city of Surabaya. The data used are SPOT 7 image years of recording 2015, 2016, 2017 and 2018. The method used is to build a Vegetation density index or NDVI model. NDVI value to explain the object, whether green space or others, in this case, the value used has a minimum range of values of 0.5. The selection of 0.5 is based on the value of objects included in vegetation, namely agricultural land, mixed gardens and dry fields where all the objects have a value of 0.5. Based on this method, green space in Surabaya city in 2015 is 33.44%, at 2016 is 20.88%, then at 2017 is 10.03%, and at 2018 is 16.07%. The conclusion of this activity is NDVI can be used to see a vegetation density that can indicate green open space in an urban area. The results of this study will be better if the clip area is done using pre-existing Open Green Space data, which is determined by local government law, to obtain a more accurate area.

Keywords: Open green space; remote sensing; SPOT; Surabaya; NDVI



25836**A CONCEPTUAL MODEL FOR SEMARANG CITY SUSTAINABILITY**

Ivan Syamsurizal, Mufti P. Patria, Raldi H.S. Koestoer, and Djoko Harmantyo

ABSTRACT

Coastal is a very strategic area, proven by the fact that 70% of big cities in the world are in coastal areas or precisely in coastal areas. Coastal also has a high level of sensitivity to natural phenomena such as: tsunami, tidal floods, strong sea winds, or abrasion. Semarang City is one of the coastal cities with high vulnerability, especially from the tidal flood caused by rising sea levels and land subsidence. Kota Lama/historical area is an area directly adjacent to the coast of Semarang City. This area is the first area affected by Rob flooding that often occurs in Semarang City. This research aims to provide an alternative model for the sustainability of cities in the coastal area through a protection approach to historic areas as a factor of resilience to the city. The method that used to produce the model is overlay analysis using ArcGIS software. The variables used in this study are physical factors and social factors. The physical factors consist of the slope of the coast, the maximum tidal range, average wave height, sea level rise, beach geomorphology, coastline changes, and land subsidence. Social factors consist of population density, land use, population age and education level. All variables are given a weight according to their respective criteria by the weighted overlay method. The next step is process of adding the weights of each variable using simple mathematical operations using the sum tools. The final stage to obtain the vulnerability index distribution zone is carried out reclassification to show its spatial distribution. The results show that the Kota Lama Region is proven to have contributed to the formation of City resilience. In the case of Semarang City, the historical area has a resilience index of 0.27 or 27% of the city's total resilience to the Rob disaster.

Keywords: Model; coastal; land subsidence; Kota Lama/historical area; Resilience

25844**IMPLEMENTATION OF SPATIAL PLANNING AND DEVELOPMENT PLANNING IN
EAST KALIMANTAN PROVINCE**

Wedo Aru Yudhantoro

ABSTRACT

This study is testing for the truth of development and correctly implementation from spatial plans document in East Kalimantan, Indonesia, East Kalimantan has 127.346,92 km² areas which divided into 10 cities. Spatial plans in East Kalimantan was divided into spatial structure, infrastructure, special pattern, natural disaster areas, geological protected areas, mining areas, strategic areas, outline, and forest management areas. The biggest potential from East Kalimantan is mining product and palm oil product. In 2016 East Kalimantan was taken a document about Urban Land use Plan for 20 years planning until 2036. This research used qualitative method by analysis the real development from 2016 until 2019 using geospatial analysis process. The result until 2019, there is some problems with the implementation of the suitability of mining and palm oil areal. In mining areal case, the biggest permission was developed in residential areas with number 75,22% which mean 2.062.075,5 hectare areas. The same problem has happened in palm oil areal that develop in 46,7% which mean 543.021,92 hectare areas. Spatial planning is a process to create spatial structure and spatial pattern that included making and appointment of spatial plans. Spatial planning was divided in national scope, province scope, city scope, and sub-district scope. Another result was showed that in mining and oil palm areas already has overlapping areas in 3,53% or 449.753,53 hectare areas. There's problem in development process in past of three years. It needs evaluate in real for make sure the urban land use plan from 2016 until 2036 still on the right way.

Keywords: Development; Spatial planning; Spatial structure; Urban land use



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SUSTAINABLE ENERGY AND RENEWABLE ENERGY

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1	23224	RENEWABLE ENERGY MIX TARGET 2025: STUDY ON THE PERFORMANCE OF GEOTHERMAL POWER GENERATION IN INDONESIA IN THE LAST FIVE YEARS Hariyadi, Paulus Wirutomo, Setyo S. Moersidik, S. Witoro Soelarno
2	24599	METHANE GAS UTILIZATION ANALYSIS FROM AMOUNT ORGANIC WASTE VOLUME IN TPA PUJWATU KOTA KENDARI Yuspian Gunawan, Jenny Delly, Ridway Balaka, Salimin, Sudarsono, Budiman Sudia, Abd Kadir, Indrayati Galugu, Bunyamin
3	24684	ANALYSIS OF UTILIZATION OF ELECTRICITY RENEWED FROM METHANE GAS ORGANIC WASTE PROCESSING PRODUCTS Muhammad Hasbi, Yuspian Gunawan, Jenny Delly, Kadir, Abdul Djoha, Samhuddin, Nanang Endriatno, Adytia Rachman, Lilis La Ome
4	25838	SPATIAL PERSPECTIVE ON THERMAL COMFORT AND ENERGY CONSUMPTION: A PLS-SEM APPROACH (CASE STUDY: PUBLIC SERVICE FACILITY IN JAKARTA TROPICAL COASTAL AREA) Bayu Andalas, Haryoto Kusnoputranto, Suyud Warno Utomo, Raldi Hendro Koestoer
5	25761	SOCIAL ACCEPTANCE MODEL OF TECHNOLOGY INTERVENTION TO CHANGE THE PERCEPTION OF ACID MINE DRAINAGE AS ENERGY Yuli Sulistiyohadi, Iwa Garniwa, Setyo S. Moersidik, Lana Saria

23224**RENEWABLE ENERGY MIX TARGET 2025: STUDY ON THE GEOTHERMAL POWER PLANT PERFORMANCE IN INDONESIA IN THE 2014-2019**

Hariyadi, Paulus Wirutomo, Setyo S. Moersidik, S. Witoro Soelarno

ABSTRACT

The geothermal power plant (GPP) development has a strategic importance to achieve renewable-based energy security, the climate mitigation, and sustainable development mission. As a country, which has abundant geothermal resource, Indonesia has taken breakthrough policies in developing the GPP as a national strategic program to achieve the renewable energy mix target in 2025 and beyond. Nevertheless, the government's breakthrough policies to promote the GPP development have not shown optimal performance in the past five years. This article will aim at answering crucial issues that underlie the ineffectiveness of the breakthrough policies for the GPP development and its impact on achieving the energy mix target. This paper uses a qualitative approach, and secondary data/literature study will be used, as well as the result of a case study in one of the geothermal power generation project in Indonesia. The results of the study indicate that the issue of political support and governance of the social opposition issues in the GPP development is the main obstacle in the geothermal power generation performance in the 2014-2019. As a result, Indonesia will not certainly achieve the development target of GPP in its renewable energy mix.

Keywords: Energy mix; Geothermal source; GPP; Political breakthrough; Renewable energy; Social opposition.



24499**METHANE GAS UTILIZATION ANALYSIS FROM AMOUNT ORGANIC WASTE
VOLUME IN TPA PUUWATU KOTA KENDARI**

Yuspian Gunawan, Jenny Delly, Ridway Balaka, Salimin, Sudarsono, Budiman Sudia, Abd Kadir, Indrayati
Galugu, Bunyamin

ABSTRACT

The aim of the study was to determine the amount of TPA Puuwatu waste and the amount of methane gas produced from the amount of waste. This research was conducted in the Puuwatu Landfill Area in Kendari City, Southeast Sulawesi Province. This research was supported by data obtained from the agencies or institutions related to this research such as the Kendari City Sanitation and Landscaping Office, Kendari City Statistics Agency, and several other institutions in the related cities of Kendari and Southeast Sulawesi. The survey locations were located in the Temporary Disposal Site (TPS) and the Puuwatu Waste Processing Site (TPA) of Kendari City. Checked using references from previous libraries. The results revealed that the average volume of waste from January to July 2018 was 5.278 m³, while the total volume of waste from January 2018 to July 2018 was 32.667m³. with waste potential (Q) 184,503,216 kg / day. While the volume of methane gas produced is 15,360,3062 m³ / day

Keywords: Methane Gas, Organic Waste, Final Processing Site (TPA)



24684**ANALYSIS OF UTILIZATION OF ELECTRICITY RENEWED FROM METHANE GAS
ORGANIC WASTE PROCESSING PRODUCTS**

Muhammad Hasbi, Yuspian Gunawan, Jenny Delly, Kadir, Abdul Djoha, Samhuiddin, Nanang Endriatno,
Adytia Rachman, Lilis La Ome

ABSTRACT

The aim of the study was to determine the amount of electrical energy generated from methane gas produced from the volume of waste. The research method is carried out by literature review and field surveys, as well as theoretical calculations. Data was collected at the Tempat Pembuangan Akhir (TPA) and Kendari City Sanitation Office, by meeting and interviewing people directly related to the landfill management process, communities in energy independent settlements, as well as in the municipal sanitation office. The results of the study revealed that the energy produced from the Tempat Pembuangan Akhir (TPA) Puuwatu in the daily average was 288,466.5332 kWh. The amount of electrical energy that has been utilized by the Pemukiman Mandiri Energi is 1,080 kWh. The untapped energy is 287,386.5332 kWh.

Keywords: Energy independent settlement, Methane Gas, Organic Waste, Electric Energy



25838**SPATIAL PERSPECTIVE ON THERMAL COMFORT AND ENERGY CONSUMPTION:
A PLS-SEM APPROACH (CASE STUDY: PUBLIC SERVICE FACILITY IN JAKARTA
TROPICAL COASTAL AREA)**

Bayu Andalas, Haryoto Kusnoputranto, Suyud Warno Utomo and Raldi H.S. Koestoer

ABSTRACT

Jakarta has implemented Environmentally-friendly buildings and Energy saving act policy. However, the energy consumption in the building sectors remains significantly increased. It dominated by consumption in building's air conditioner and related to thermal comfort for building's occupants and also the work performance of civil services employee. The present research article reports the results of a statistical questionnaire-based of subjective answers by a civil service employee of Jakarta Capital Government. This study was conducted by concerning spatial perspective or geographic location of the object in six administrative parts of Jakarta Metropolitan regions with different climatic conditions (center, east, north, west, south and Seribu archipelago). The questionnaires were distributed to 367 buildings occupants during the dry-wet season (October-November). The study were performed in 311 Public service facility, then the data were analyzed using Partial Least Square-Structural Equation Modeling (PLS-SEM) method to answer research questions about the link between thermal comfort and energy consumption. The results showed a significant result between two variables. A model using those variables was generated to show the link between them and suggested as a tool to conduct better building-related policies in Jakarta Provincial Government.

Keywords:

25761**SOCIAL ACCEPTANCE MODEL OF TECHNOLOGY INTERVENTION TO CHANGE THE PERCEPTION OF ACID MINE DRAINAGE AS ENERGY**

Yuli Sulistiyohadi, Iwa Garniwa, Setyo S. Moersidik, Lana Saria

ABSTRACT

The purpose of this study is to build a model of social acceptance by technology intervention in acid mine drainage (AMD) treatment. This study aims to analyse how much influence the new technology of AMD treatment technology uses on electrification cell to change stakeholder perceptions about impact of AMD in mining activities. This research using a quantitative approach with exploring the perceptions of respondents from government, private, and community elements. Respondents from stakeholders who are directly related to AMD, namely mine workers at the level of mine operational supervisors. Data is processed and analysed using Smart-PLS® devices to build structural equation models.

New technology for managing AMD in mining lake uses electrochemical principles by creating electrification cell to process mine acid water into electrical energy. The energy produced from AMD is used to fulfil the energy demand from the community around the mine site. The respondents' old perceptions of acid mine drainage and mining lakes are related to knowledge about the usefulness of AMD and mine lakes for communities around the mine, which significantly affects the AMD treatment technology interventions. The AMD processing technology intervention has a significant change in the respondents' new perceptions of AMD. Energy generated from AMD processing using electrification cells has a significant new perception.

Keywords: Social acceptance; Technology intervention; Acid mine drainage; Change perception; Energy from AMD



LIST OF PAPERS

GREEN BUILDING

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1	25385	THE IMPORTANCE OF USERS' PERSPECTIVE IN GREEN OPEN SPACE DESIGN ON CAMPUS' POCKET GARDEN Audrey Gracia Muljono, Tri Edhi Budhi Soesilo, Donna Asteria, Denny Sundara
2	25556	WHOSE GREEN IS IT? CONSTRUCTING PROPOSITION ABOUT JUSTICE IN THE SUNDERED WORLD Aji Noor Muhammad, Andhika Riyadi, Wulansari
3	25388	MODEL PREDICTIVE CONTROL OF PRECISION AIR CONDITIONING SYSTEM WITH SECONDARY CONDENSER Iput Kasiyanto



25385**THE IMPORTANCE OF USERS' PERSPECTIVE IN GREEN OPEN SPACE DESIGN ON CAMPUS' POCKET GARDEN**

Audrey Gracia Muljono, Tri Edhi Budhi Soesilo, Donna Asteria, Denny Sundara

ABSTRACT

Green open spaces (GOSs) have great functions and are positively impacting urban residents, both psychologically and physically, not exempting urban college students. City expansions and development reduce these GOS areas, bringing forth the green campus program as an effort for sustainability by city-located campuses. However, much research about green campus planning and design are mostly focused on energy or infrastructures and almost never on GOSs. Campus' own citizens and caretakers are inadequately engaged despite their roles in utilizing GOSs. These spaces supposedly also encourage pro-environment behavior, which will determine campus sustainability. Our first aim of this study is to figure whether GOS design follows the needs and perspectives of GOS users. The next objective is designing a GOS based on our study results. A qualitative method was used for this research. Interviews was conducted with administrators, experts, students, and GOS caretakers, while the researcher observed their behavior. Results provide information in regards to including GOS aspect and users' perspectives in designing green campus in the future. Most students and GOS caretakers use GOS for social purposes, while some of them use GOS to wait and relax. Seating and shading areas are the reasons users came into GOS. Respondents did not feel comfortable in the GOS because they think it is ungroomed. The users recreated some behavior from seeing other users. To motivate the GOSs caretakers, the researcher proposed an edible garden concept into pocket gardens and to create a sustainable garden. The paper concludes that the users' perspective can be different from the intention of campus administrators. The sustainability of GOSs depends on the motivation of the users. GOS quality depends on users' perspective with clearer policy about the GOS.

Keywords: Campus garden; edible garden; green open space design; user perspective design

25556**WHOSE GREEN IS IT? CONSTRUCTING PROPOSITION ABOUT JUSTICE IN THE SUNDERED WORLD**

Aji Noor Muhammad, Andhika Riyadi, Wulansari

ABSTRACT

Values about justice are always inherently brought when we talk about sustainability, so does the approach that stands beside it. 'Green' is one of those approaches that refers to the specific treatment that mankind does to nature. It is also commonly assumed that mankind and natural objects are separated. Contrary to the common belief, these treatments are related to cultural and political values that undermine it. This research aims to explore how theoretical propositions about 'Green Open Space' are constructed, also how dichotomy about social and natural are formed as we construct those propositions. Using Actor-Network Theory as a method, this research will attempt to explain how proposition about justice in that theory is carried out in social movement along banks of Ciliwung River, and how these social movements are taking environmental objects around them into account.

Keywords: Human-Nature Dichotomy; Justice; Green Open Space; Actor-Network Theory; Social Movement.



25388**MODEL PREDICTIVE CONTROL OF PRECISION AIR CONDITIONING SYSTEM
WITH SECONDARY CONDENSER**

Iput Kasiyanto

ABSTRACT

Due to high specification of ASHRAE requirements, a data center (DC) must have sophisticated cooling system to maintain its environment conditions. Its high dimensional coupling system dynamics makes controller design very challenging and complicated. A non-linear system model of a precision air conditioning (PAC) system with secondary condenser has been previously developed and then linearized at steady state operating point. Based on the model, a model predictive control (MPC) based controller is designed to deal with coupling state variables (i.e: temperature and relative humidity). The controller also has ability to improve energy efficiency of the PAC system. The performance of the proposed controller is validated through simulation. The results showed the effectiveness of MPC based controller against the defined constraints.

Keywords: Energy efficiency; Model predictive control; Precision air conditioning;



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SUSTAINABLE FORESTRY AND PEAT LAND MANAGEMENT

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2	25615	IMPACT OF INTER-ANNUAL PHENOMENA TO POTENTIAL FISHING ZONE IN WPPNRI 573 Rizky Faristyawan, Devica Natalia Br Ginting, Argo Galih Suhadha, Wikanti Asriningrum
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6	27001	THE ESTABLISHMENT OF THE STATE FOREST SYSTEM AND ITS HOSTILITY TO LOCAL PEOPLE Kosuke Mizuno

25309**IMPROVING FARMERS SUSTAINABILITY INDEX STATUS FOR AGRICULTURAL SUSTAINABILITY**

Hanipah, Hayati Sari Hasibuan, Rudy P. Tambunan

ABSTRACT

Karawang Regency was famous as the rice-production in Java. However, in recent years, there has been land-use changes from the paddy field to the industrial and housing area. The proportion area of paddy fields changed from 55.35% (2009) to 54.49% (2017) of the total area of Karawang, 175,327 ha. The existence of industries in Karawang also attracted people to switch professions from farming to the industrial sector. Indicated by the decreasing number of workers in the farming sector, from 4,628 people (2009) to 3,744 people (2010). At the same period, there was an increasing number of workers in the industrial sector, from 89,163 people (2009) to 242,896 people (2016). The purpose of this study is to measure the index of farmers' sustainability status. This research was carried out in Telukjambe Barat District, Karawang Regency, West Java. The study uses the Multi-Dimensional Scaling (MDS) method with 3 dimensions: (1) social dimension (access to the education and health services, and participation to the development), (2) economic dimension (revenue, living cost, and well-being), and (3) environmental dimensions (land ownership, access to the fertilizer, and access to the irrigation). Data obtained from the questionnaires and interviews with the farmers and non-farmers in the study area. The results of the study found that the economic dimension of farmers in Karawang has the lowest index compared to other dimensions. The most problem in the economic dimension is the high capital for production in one season. The social dimension showed that farmers have no generation to pursue being a farmer. Moreover, the environment dimension showed that almost 60% of the farmers have no land of paddy-field, and the most critical issue to deal with are access to the irrigation to increase the rice-production.

Keywords: Farmer; Index status; Karawang's farmers; Profession transition; Sustainability



25615**IMPACT OF INTER-ANNUAL PHENOMENA TO POTENTIAL FISHING ZONE IN WPPNRI 573**

Rizky Faristyawan, Devica Natalia Br Ginting, Argo Galih Suhadha, Wikanti Asriningrum

ABSTRACT

Indonesia is in the equatorial region which is affected by phenomena of two oceans and two continents, including monsoon and inter-annual phenomena such as ENSO and IOD. Ocean currents and sea surface temperature are physical parameters that also affected by these phenomena. Ocean currents have an important role for sea surface temperature distribution as basis for determining Potential Fishing Zone (PFZ). This research was conducted to determine the impact of inter-annual phenomena on potential fishing points distribution in the WPPNRI 573 (Republic of Indonesia Fisheries Management Region 573). The data in this study consists of sea current, sea surface temperature, Dipole Mode Index (DMI), Nino 3.4 Index, and PFZ distribution data in 2015-2018. This study shows a change of 0.4943 degrees Celsius to sea surface temperature and 0.0566 m/s changes in current speed due to inter-annual phenomena. The existence of this inter-annual phenomena also has an impact on PFZ distribution. When positive DMI and strong El-Nino occur, the distribution of PFZ is concentrated in the eastern coastal areas of WPPNRI 573, when DMI positive occurs, the majority of PFZ are scattered in the southern offshore area of Indonesia, and when DMI positive and weak El-Nino occur, the distribution tends to be evenly distributed in the coastal region and in the offshore area. This information is needed to support SDG 1 No Poverty, Zero Hungry SDG 2, and SDG 14 Life below water.

Keywords: Inter-annual; PFZ; Sea current; Sea surface temperature; WPPNRI 573.

25682**PERCEPTION AND UNDERSTANDING OF AGRICULTURAL EXTENSION WORKER
TO SOIL AND HOW TO UNDERSTAND AND ASSESS SOIL AND SOIL QUALITY**

Latief Mahir Rachman

ABSTRACT

The Indonesian government's program to achieve self-sufficiency and food independence needs to be supported by increased agricultural production and welfare of farmers. The role of agricultural extension agents is needed and strategic to increase agricultural growth and production. Agricultural extension workers must understand all components related to agricultural cultivation. One component of cultivation that greatly determines agricultural production is land. Though supposedly still quite a lot of agricultural extension that do not have an understanding of the components of the soil adequately. Adequate understanding of land and soil quality is very necessary for determining the type and density of cultivated plants, crop rotation, tillage, type and dosage of fertilization, and irrigation. Whereas to support the implementation of Agriculture 3.0 and 4.0, the role of agricultural extension agents is needed to produce careful calculations and intelligent decision making for agricultural management. This study aims to determine the perceptions, knowledge and conception of agricultural extension workers on soil, fertility and soil productivity, soil fertilization, soil quality and techniques to assess soil. The results of research conducted on farmers in seven regencies in West Java Province and Central Java Province, respectively show that overall knowledge of agricultural extension workers on soil and techniques to assess soil is still not satisfactory. They still face difficulty to learn and to understand soil so that it is more appropriate and beneficial in making decisions on matters related to soil. They need knowledge, data, and information about soil and techniques to assess soil that is more easily accepted and understood, practical, and measurable.

Keywords: Agricultural extension worker; Soil; Soil assessment; Soil management; Soil quality



25694**FARMER WELFARE ANALYSIS IN RICE FARM PRODUCTION PROCESS (CASE STUDY IN CURUG VILLAGE, SUSUKAN LEBAK DISTRICT, CIREBON REGENCY, WEST JAVA PROVINCE)**

Jiwa Muhamad Satria Nusantara

ABSTRACT

Economic development and growth in Indonesia are an accumulation regional below. In West Java and Cirebon, agriculture is one of the highest sectors contributing to GRDP. However, the condition of the farmers welfare who can contribute a large GRDP to the region needs to be considered. In fact, measuring the welfare of farmers is not enough to just look at Farmer Exchange Rate (FER). The researcher Alhe Laitte in Tarigan (2017) stated that, "FER is more appropriate for measuring farmers' purchasing power, while the measure of farmers' welfare is not only limited to farmers' power, but also covers other broader aspects." This study analyzes the welfare of farmers in the rice production process. The purpose of the research is to describe the problems faced by farmers in farming process. This research is a descriptive study with a method of collecting data in questionnaires to 50 respondents of farmers in Curug Village, Susukan Lebak District, Cirebon Regency. The results of this study indicate that, farmers are currently not prosperous. This is seen from the farmers capital, threats to crop failure, limited knowledge, selling price of grain and farmers' income are still below regional minimum wage. Recommendations from this study, the government should pay attention to the condition of the farmers' cycles starting from capital ownership. Government programs such as capital loans, raw material assistance and crop failure insurance are needed by farmers. On the other hand, regulating the purchase price and buyers of grain also needs to be regulated and monitored.

Keywords: Agriculture; Development; Farmers; Village; Welfare

25710**DEFORESTATION: THE CHALLENGES FOR EAST KALIMANTAN AS NEW CAPITAL CITY OF INDONESIA**

Boby Bagja Pratama, Hayati Sari Hasibuan, Supriatna

ABSTRACT

Indonesia government assessed several regions to move the Indonesian capital. one of them is in East Kalimantan. This research focuses on deforestation in East Kalimantan from 2001 to 2018. It aims to analyze and to learn as much as possible from the data set of East Kalimantan as new Indonesian capital about the trade-offs between economic and social growth, and also environmental degradation. It uses spatial information and as tools to describe and analyze environmental degradation. It examines data Landsat Imagery between 2015 and 2018 for calculating the deforestation area in East Kalimantan. Moreover, addressing deforestation this research analyzes the impact of tree loss that used for agriculture, mining, housing, infrastructure and other land use. This research concludes that deforestation in East Kalimantan affect the economic and social growth. In some areas that deforestation rates are relatively high, it's have also contribute significant rates economic and social growth.

Keywords: Deforestation; Spatial Information; Land use; East Kalimantan.



27001**THE ESTABLISHMENT OF THE STATE FOREST SYSTEM AND ITS HOSTILITY TO LOCAL PEOPLE**

Kosuke Mizuno

ABSTRACT

Presently, the state forest (kawasan hutan) in Indonesia is so vast, covering 70% of Indonesia's land surface. This area has become the site of many problems, including issues concerning the overlapping of land rights, illegal logging and serious environmental degradation. This study looks into the origin of the state forest system during the colonial era, paying particular attention to the establishment of the forest service administration of the time. Faced with deforestation at the end of 18th century, and also the middle of the 19th century, under the name of forest protection and conservation, the forest service administration was established, imposing the corvée system of forced labor, as well as implementing bureaucratic administration based on waged labor. For the purpose of forest protection and conservation, the forest police and the forest judicial system were established in the 19th century. The system was quite hostile to the local people, such that the slash and burn system was prohibited, leading to the punishment of local people who defied this prohibition. Many traditional activities carried out by the people were criminalized within this context. Increase of the forest offense reflected the development of local economy. The government attempted to stabilize the system partly by allowing the activities of local people with issuing the permit, and by increasing the number of forest police on patrol. Permit system was not functioned because the system had many problems and almost nobody got the permission. Since 1920, through the strengthening of collaboration between inter-regional police forces, such as the village police and the district police. However, this attempt failed, and the number of forest offences had increased until the end of the 1930s. One of the reasons why the attempt was unsuccessful was that collaboration between the forest thieves and the local administration, including the forest police, led to local people carrying out revenge against the police's strict control by burning the forest. More fundamental problem was that making use of the forest such as cutting the tree, and assembling the fallen trees, branches and leaves were recognized as people's customary right by people, on the other hand, the colonial Government denied the right, and confined their rights within the permit and police system. Abstract with no more than 300 words should be supplied to reflect the content of the paper. A concise and factual abstract is required.

Keywords: state forest; forest service administration; forest police; forest offences; customary rights of local people





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25430**FACTORS AFFECTING THE PERCEPTION OF THE LOCAL COMMUNITY IN
MAINTAINING THE SUSTAINABILITY OF THE SETU BABAKAN BETAWI
CULTURAL VILLAGE IN SOUTH JAKARTA**

Dwinanto Suberlian

ABSTRACT

The Setu Babakan Betawi Cultural Village is an area that has been established by the Government for Betawi Culture preservation since 2000. The purpose of this study is to analyze the current land use and at the time of its establishment as a Betawi socio-cultural preservation area, analyze the attitudes and expectations of the surrounding community towards the existence and sustainability and analyze the variables that influence people's perceptions of area. A total of 345 questionnaires were distributed using a simple random sampling method. Descriptive analysis is used to find out the categories of respondents' statements from each variable indicator. While quantitative analysis using Structural Equation Modeling analysis technique aims to measure how significant the relationship between variables and indicators. There was a change in the land use from 2005-2019, namely the reduction of green open space and the increase in residential land area. Community perceptions are shown in a statement supporting and agreeing that the home environment of the residence is included in the area. The hopes and desires of the people around Betawi Village are that the community can continue to be in the area and be involved in activities within the area. Economic factors are the most important variable for the community to maintain sustainability because the community feels very economically helped by opening small businesses in the region. Social factors also play an important role in maintaining the sustainability. Based on the results of path analysis from structural equation models it is depicted that public perception is significantly influenced by economic factors and social factors while environmental factors do not significantly influence people's perceptions.

Keywords: Sustainability; Maintain; Community Perception, Betawi Cultural Village; Efforts



25532**CARRYING CAPACITY OF TRANSIT-ORIENTED DEVELOPMENT
AREA OF JAKARTA**

Riza Harmain, Hayati Sari Hasibuan, Ahyahudin Sodri

ABSTRACT

Transit-Oriented Development (TOD) is an integrated land use and transportation development concept which consists of density, diversity, and design elements. Developing the TOD concept needs to consider supporting systems such as land and water, which conceived in carrying capacity concepts. This research aims to analyze the carrying capacity of the TOD area according to variables of land capability and water availability. This research conducted in the TOD of Lebak Bulus and Dukuh Atas that become a part of Jakarta's Mass-Rapid Transit (MRT) line phase 1. The overlay analysis of GIS to determine the carrying capacity of the TOD. The TOD areas are at the right level of land capability, but not at a good level of water availability due to the low quality of the groundwater. The water availability needs to supported by the local water company to keep the water supply in the right conditions.

Keywords: Carrying Capacity, Transit-Oriented Development, Land Capability, Water Availability, Geographical Information System.



25539**THE PERSISTENCE OF AN ECOLOGICAL SOCIETY: IN DEPTH CRITICAL ANALYSIS OF THE COMMUNITY MOVEMENT IN GERIANA KAUH, KARANGASEM**

LG. Saraswati Putri

ABSTRACT

This research investigates the tenacity of the villagers of Geriana Kauh in the Regency of Karangasem, Bali, in preserving their culture and nature. Balinese are facing immediate threats due to massive modernization and industrialization. The excessive, and intrusive development generated by mega tourism, are causing environmental and societal degradations. The small village of Geriana Kauh, have been striving to protect their ancestral land with the power of cultural consciousness. For the past 10 years they have worked to rehabilitate their social and ecological crises caused by modernizations. This research utilizes eco-philosophy theories, first is post-structuralism Three Ecologies theory by Felix Guattari. Using this critical theory, we can extract the importance of equilibrium within the psyche, the social, and the ecological. Second theory is by Murray Bookchin in relation to understanding the forming of a conscious ecological society. Balinese foundation of living lies within the philosophy of Tri Hita Karana, or three sources of happiness. Harmony among each others (pawongan), within the environment (palemahan), and to God (parahyangan). The villagers of Geriana Kauh lived by this philosophy. They are predominantly farmers who have inherited the land, which had been passed down from generation to generation. This farming tradition is also intertwined alongside to the ancient tradition of irrigation, or Subak. Cultivating lands have become their cultural and spiritual identities. The emergence of modern farming in the 1960s with harmful pesticide and chemical fertilizer, have caused danger to the paddy fields ecosystem. Now, they are returning to sustainable farming by restoring the traditional rice culture and living in accordance with nature.

Keywords: Ecological Society, Three Ecologies, Tri Hita Karana, Subak, Rice Culture, Sustainability.



25584**ASSESSING LEVEL OF EFFECTIVENESS OF COMMUNITY ENGAGEMENT FORMS
IN SOCIAL LIFE CYCLE ASSESSMENT (S-LCA)**

Indah Budiani

ABSTRACT

Midgley (1995) argues that the major problem facing developing nations and regions today is "distorted development" when economic growth is not accompanied by concurrent progress in social welfare for the entire population. Therefore, businesses are encouraged to be able to pay attention to the social and economic impacts of their activities especially on the social welfare of local community. One of the tools to measure the impact is the Social Life Cycle Assessment (S-LCA), where the inclusion of stakeholders is an important part. The paper will analyse the sub-category of "community engagement" in UNEP/SETAC Guideline of SLCA. To measure the effectiveness of the several forms of community engagement as a breakdown of the sub-category. The highest level of community engagement form is expected can effectively mitigate negative social impact of the business activities on local community stakeholder. The research approaches applied in this study is the qualitative research approached to capture community engagement practices and the impact to company productivity from literatures and case studies in palm oil sector such as whether or not the companies have written policies on community engagement at organization level, diversity of community stakeholder groups, number and quality of meetings with community stakeholders, and organizational support (volunteer-hours or financial) for community initiatives. As the result from assessing 14 companies, the company's policy should be the priority approach to ensure the community engagement can mitigating negative impact to local community, eliminate conflict, and to maintain company reputation. While financial support such as for capacity building, social economic development, or community initiative can be also effective as long as there is a thorough assessment in advance and participation of local community in developing the intervention plan.

Keywords: Community engagement; Palm oil sector; Social life cycle assessment.



25585**THE IMPACT OF GEOTHERMAL POWER PLANTS ON THE ECONOMIC AND SOCIAL ASPECTS OF THE SURROUNDING COMMUNITY**

Raity Arief Hidajat

ABSTRACT

Recently, electricity consumption in Indonesia continue to increase rapidly along with the increase in development, economic growth and also the increase in the population. One potential source of electrical energy comes from geothermal energy, where Indonesia has enormous potential. According to data from the Geological Agency, Ministry of Energy and Mineral Resources, until the end of 2016 there were at least 331 geothermal energy source locations throughout Indonesia, where most of the potential was on a volcanic track with a potential of 28,579 MW and this is the largest geothermal energy in the world. Geothermal power plants are known as environmentally friendly power plants that use renewable source. Like photovoltaic and wind, power generation from geothermal power produces air pollution which is little compared to using fuel oil. Land use for geothermal power plants is smaller per megawatt than other types of power plants. Based on environmental aspects, geothermal power plants have been shown to have a minimal impact on the environment. In this research the aspects studied are other aspects of sustainable development, namely economic and social aspects, where the existence of geothermal power plants is expected to have a positive impact on the sustainability of economic and social of the surrounding communities. The method used is interviews with several sub-district and Government stakeholders who are in charge of geothermal and data review on the economic and social development of the area so that it can be known how much the economic and social impacts of the existence of geothermal power plants. The results of the study show positive response and increased economic and social benefits felt by the community.

Keywords: geothermal, sustainable development, community



25716**STUDY OF SLUM AREA ENVIRONMENTAL CARRYING CAPACITY FOR THE
HAPPINESS OF SLUM HOUSEHOLD FAMILY LIFE (CASE STUDY OF GENDER AND
ECOLOGICAL PERSPECTIVES)**

Sitti Nursetiawati, Dian Pertiwi Josua

ABSTRAK

A decent residential area is difficult to find, especially in urban areas. At present, slums are an option for families to live and settle on the grounds of the lack of availability of a proper environment. This study is a combined study, with the aim of analyzing the influence of the environment in slums on the happiness of families who live in the area. This research involved 30 families, and differentiated happiness according to gender, which was based on the perspective of fathers, mothers, and children of one family. Sources of research data sourced from primary data and secondary data. Primary data were obtained through the Oxford Happiness Questionnaire which was filled in by respondents based on their own reports, while secondary data came from interviews and observations. The results of the study stated that: (a) The environment affects the happiness of family slums, (b) Communities in slums have quite high happiness conditions, and (c) there are differences in happiness between men and women in slums.

Keywords: Ecological analysis, family happiness, gender studies, and the slum environment.



25781**THE IMPACT OF AMERICAN OIL COMPANY'S EXISTENCE ON THE SAKAI
COMMUNITY IN RIAU PROVINCE**

Agus Setiawan

ABSTRACT

This paper focuses on the influence of the existence of foreign oil companies that has been operating in the territory of the Sakai Tribe as one of indigenous tribes in Riau. Sakai tribe has inhabited the area which later became the oil mining area of PT. Chevron Pacific Indonesia (PT CPI). The company continues the activities of foreign oil companies which previously also operated in Duri, Riau. Oil mining undertaken in Riau contributes to environmental changes including in the areas where the Sakai people live. The environmental changes also change the pattern of society activity and character because of some changes in terms of patterns of working and settlements. Refers to the huge profits gained by oil companies around Riau, especially in Duri sub-district, this paper seeks to find out whether the policies of the foreign oil company can stimulate the economic growth in the region or on the contrary, it does not provide economic advantages to the people living around mining areas, especially the Sakai people. This research uses historical method where historical sources are also obtained through interview with people of Sakai tribe and PT.CPI officers. The results of the research show the existence of environmental pollution caused by mining activities and it also influences on social mobility among members of Sakai community.

Keywords: Mining Act; Oil Company; Oil Exploration; Pollution; Sakai Tribe



25830**COMMUNITY PARTICIPATION IN MANGROVE REHABILITATION CASE STUDY
KARANGSONG, EAST JAVA, INDONESIA**

Feti Fatimatuzzahroh, Sudharto P. Hadi, Hartuti Purnaweni, Sudarno

ABSTRAK

Community involvement has an important role in mangrove rehabilitation. Society as whom are positively affected by mangrove rehabilitation, community involvement is an important indicator in the success of mangrove rehabilitation. This research reviews community involvement in mangrove rehabilitation in Karangsang. Using descriptive qualitative methods, this study analyzes community involvement by using the theories of Arnstein and Wilcox. This research shows that community participation in mangrove rehabilitation in Karangsang is at the citizen power stage. This phase shows that the community is able to plan and make policies for mangrove rehabilitation. Continuing community participation is still needed in mangrove management. Therefore, local government policies are expected to continue to consider community involvement in managing and rehabilitating mangroves to be sustainable.

Keywords: community involvement, community participation, mangrove rehabilitation, Karangsang



25846**SUPPORT OF INTERNATIONAL MARINE ENVIRONMENTAL AGREEMENT FOR SUSTAINABLE DEVELOPMENT GOALS ACHIEVEMENT IN 2030**

Andreas Pramudianto

ABSTRACT

The agreement of the multilateral international marine environment as a hard law device has been widely agreed upon, but seems to have to adjust to current developments. One of the reasons is the need for good governance so that common goals can be achieved so as to prevent and reduce global marine damage and pollution such as plastic waste at sea. In 2015, the Sustainable Development Goals agreement was adopted as a substitute for the Millennium Development Goals, with 17 objectives for better development in 2030. Meanwhile, each international marine environmental agreement has targets and programs that have been agreed upon previously. IMO Conventions, UNCLOS, UNEP Regional Sea's Program will be better adapted to the direction of the SDGs. Thus the success of the achievements of the SDGs requires the support of various international marine environment agreements with adjustments and harmonization between regime or institutions. Therefore the purpose of this study is to know and analyze the existence of international marine environmental agreements on the direction of the SDGs. In addition, this study wants to analyze programs that will be developed by several international marine environmental agreements as support for the objectives of the 14 SDGs to be achieved properly. The method to be used in this study is a qualitative method with a normative juridical approach. Interim results show that several international marine environmental agreements seek to adapt to the objectives of the 14 SDGs as support to be achieved in 2030.

Keywords: International Marine Environment Agreement; UNCLOS 1982; IMO Conventions; UNEP Regional Seas Program; Sustainable Development Goals (SDGs); Goals 14



27019**OUTER SEA FISHING AND SEA-SPACE COGNITION OF SAMA-BAJAU PEOPLE
IN BANGGAI ISLANDS, CENTRAL SULAWESI, INDONESIA**

Makibi Nakano

ABSTRACT

The Sama-Bajau peoples are maritime populations living in various islands of several Southeast Asian nations and have been studied for their traditions of sea nomadic lifestyles and coral reef fishing in previous researches. However, there exist the Sama-Bajau people, who already settled on islands of 'non-coral reef' zones. Therefore, this study aims at exploring outer sea fishing and space cognition of the non-nomadic Sama-Bajau people in Banggai Islands, Central Sulawesi. As the methods, this study was conducted by mainly interview and participant observation to fishermen who are selected by any one fisherman. In addition, Global Positioning System (GPS) was used when needed. As the results, it was revealed that the main method of the fishing of the study population was angling in outer sea but not net fishing in coral reef, unlikely as populations reported in previous studies. They classified sea space into 12 categories, based on submarine topography; however, fishing spots were determined by specific characteristics of each point regardless of the space categories. For the purpose of identifying fishing spots, the fishers referred to not only submarine topography but also shape of islands seen from the spot, stars seen at the time, and other information. By comparing these findings with the previous studies, it was concluded that "spot based understanding" has been developed in the non-coral reef zones while "surface based understanding" in the coral reef zones. It was interpreted that this difference has grown in adaptation of the Sama-Bajau people to different geographic conditions.

Keywords: Sama-Bajau; Bajo; Space cognition; Indigenous knowledge; fishing spot





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25000**THE SURVIVAL STRATEGIES OF LOCAL PEOPLE IN A LARGE-SCALE PEAT FIRE AREA IN RIAU, INDONEIA**

Maho Kasori

ABSTRACT

Peat swamp forest had been rife with tropical disease and had never been the target of development. Since 1990s, however, the forest has started to attract the outside investors for plantation of timber and oil palm. They have introduced the drainage to dry peat swamp and planted acacia mangium and/or oil palm massively. That drying process has caused severe peat fire in different parts of Sumatra and Kalimantan islands several times. The large-scale opening of plantation has damaged the bio-diversity and also endangered the livelihood of indigenous people who are dependent on hunting, gathering and fishing in and around the peat areas. Facing these multi-dimensional crises, the Indonesian government establish the peat restoration agency (BRG, Badan Restorasi Gambut) in 2016. And the international environmentalist communities and even the plantation companies have started the sustainable peat management projects. This research aims to analysing these outside interventions and also the actors' network surrounding the intervention, focusing on Rawa Mekar Jaya village, Siak district in Riau where large-scale acacia and oil palm companies opened the plantation. My research involves structured questionnaires survey for randomly selected 63 out of 286 households (22.1 %) in the village (286 households). The study ironically reveals that it is the peat protection regulations and peat restoration efforts initiated by outside actors that have deepened already existed social cleavages in the community. The intervention of external actors to restore peatland is generally dependent on the village elite, alienating those from different socio-economic class and identity groups. This research result suggests the importance of more community-oriented sustainable peat management with deep understanding of village structure.

Keywords: environmentalist communities, survival strategies, sustainable peat management



25408**EDUCATIONAL ASPECTS IN ENVIRONMENTAL PROBLEM IN INDONESIA**

Mortaza A. Syafinuddin Hammada

ABSTRACT

Sustainability is an important topic in environmental studies. In addition to environmental engineering and management solutions, special studies are needed to look at educational factors in environmental studies. With the phenomenological approach, this research proves that the main problem of the environment in Indonesia is knowledge and awareness. Therefore, it is important that aspects of environmental education may be developed seriously in various sectors of life.

Keywords: Environmental Education, Environmental for Sustainable Development, Sustainable Development, Adiwiyata



25545**THE EFFECT OF ENVIRONMENTAL KNOWLEDGE ON GREEN BEHAVIOR: A COMPARATIVE STUDY BETWEEN STUDENTS IN UPM, MALAYSIA AND IPB UNIVERSITY, INDONESIA**

Roza Destrinanda, Lindawati Kartika, Zuraina Dato' Mansor

ABSTRACT

Globalization and technologies are important in supporting the industrial revolution especially we are now promoting IR 4.0, however, the needs to transformation to digital era bring along some environmental damage caused by human activities. The environmental performance for many countries as observed under the Environmental Performance Index score by Yale University have shown that Index for Indonesia and Malaysia in 2018 declined as compared to the previous year. This suggest that both countries are in need to take action in order to improvise the situation. Past research suggests that one way to do it is by establishing a cooperation with various sectors including with higher institutions. This can be done by promoting green campus. UPM and IPB Universities are two agricultural campuses in Malaysia and Indonesia. Both universities are concerned thus are promoting the universities as green university for environmental sustainability. They have put the initiatives through educating the students during the education process. Students are the largest campus community and our potential future leaders, educating them with environmental knowledge supposed to inculcate the right behavior for environment sustainability. Based on this, this research aims to (1) determine the environmental knowledge of students from UPM and IPB University, and (2) examine the relationship between the subjective knowledge and the green behavior factors. Data were collected from both UPM in Malaysia and IPB University in Indonesia, then it was analyzed using descriptive analysis and PLS-SEM analysis. The result showed that value of objective knowledge obtained by FEM IPB University students is higher than FEM UPM students.

Keywords: Environmental knowledge; Green behavior; IPB University; UPM

25626**WOMEN'S SOCIAL MEDIA ACTIVISM FOR SUSTAINABLE LIVING: THE PROSPECT AND LIMITATION FOR ECOLITERACY LEARNING**

June Cahyaningtyas

ABSTRACT

Ecoliteracy is one of the alternative for the more mainstream concept of environment literacy, which makes the goal of Environment Education. Compared to environment literacy, which focus on transforming the learning of the individuals through schools, ecoliteracy adopts the idea of relationship between living organisms and ecosystems, and relate it with the idea of religiosity or spirituality through various learning mechanism. This research is written as an effort to understand the prospect and the limit of social media use for ecoliteracy learning, led by women. Availing from the massive subscription of social media among Indonesians and their significant share of information on sustainable living, the study focus on social media activism for sustainable living. The objective of the paper is twofold. First, it seeks to find out how social media can be an avenue for social learning on sustainable living. Second, it probes on the way that social media shifts people's conception on place and embodied practice, fundamental to the value formation on human-environment relation in ecoliteracy. In view of the objectives, the study employs a combination of online and offline ethnography. In order to gain an in-depth information, several women were selected for key interviewees. They are selected due to their role in the community, their knowledge, and their online communicability, indicated from the impact they make through the formation of community, both offline and online, such as zero-waste community, composting community, or from-garden-to-table community. A participant observation is also conducted alongside the interview. The study also employs desk study by comparing what the data collected with earlier research on relevant issues to help for the analysis.

Keywords: ecoliteracy, women, Indonesia, social media, sustainable living, place, embodied practice



25904**PEOPLE EMPOWERMENT TO PREVENT NEONATAL MORTALITY FROM THE WESTERN TO THE EAST OF INDONESIA**

Ibnu Roihan, Juan Karnadi, Arbi Riantono, Raldi Artono Koestoer

ABSTRACT

One of the 17 frameworks for the Sustainable Development Goals (SDGs) program is about healthy life and encouraging prosperity for all people of all ages. Based on the results of the Indonesian Demographic and Health Survey (IDHS), the Neonatal Mortality Rate (NMR) in 2017 was 15 deaths per 1000 births. The Indonesian government within the framework of SDGs targeting NMR can decrease to 12 deaths per 1000 births. Indonesia is ranked fifth in the case of premature babies in the world, which is one of the causes of the high number of NMR. The existence of an incubator as a premature baby warmer device is very important. But such health facilities in the area are still lacking. The Grashof Portable Home Incubator, which is one of the innovations from Universitas Indonesia, could be one of the solutions. This incubator was lent free of charge as one of the product-based community engagement activities from 2012 to the present. Grashof incubator is designed with the concept of green technology, including saving energy consumption, organic wood material, portable, and lightweight. It was lent freely to the mother's baby's home, from lower-class community. The network of volunteer agents is at the forefront of implementing this activity in many locations in Indonesia. The volunteer agents replace the basic costs production of the incubator so the problem of funds can be overcome. Socialization and collaboration with all levels of society, both individuals and institutions, is carried out so that more premature babies can be helped. Three of the four main factors for newborn death can be handled by this activity, including the problem of lack of facilities, delay in handling, and access to health care centers. Since 2012 until now this activity has helped more than 3000 babies carried out by volunteer agents who already exist in 20 provinces spread over 93 cities/districts. This activity has increased to community empowerment, which directs or indirect helps government programs in reducing infant mortality. Public awareness to help others, especially poor people can make life's welfare better.

Keyword: SDG; People Empowerment; Infant Mortality Rate; Free Lending Incubator; Grashof Incubator



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24953**PPP AND GOVERNMENT GUARANTEE TO STRENGTHEN SDGS IN INDONESIA**

Annisa Nur Fauziah, Yuki Mahardhito Adhitya Wardhana

ABSTRACT

Indonesia's state budget allocation for infrastructure 2015-2019 is about US\$ 358 billion, meanwhile the government budget is only about US\$ 148 billion and covering for 41,3%. Total financing gap for 37 priority projects is US\$ 234,8 billion, and the involvement of private through Public Private Partnership (PPP) scheme is considered as possible solution to close the gap. The study was conducted descriptively by referring at the guarantee process conducted by IIGF which mirroring from PPP process cycle: Screening, Appraisal, Structuring, and Monitoring. Infrastructure projects which are economically feasible but financially non-viable can be accelerated through Government Guarantee. Based on study, of the 41 PPP Pipeline Projects during preparation stage to transaction, 21 projects required Government Guarantee. The project bankability can be seen from bidding competition and the Guaranteed Project increased the bidding competition with total number of prequalified bidder of guaranteed projects are 89 investors. Furthermore, the project guaranteed contribute to SDG 9 (Resilient Infrastructure and Sustainable Industrialisation), SDG 6 (Clean Water and Sanitation), SDG 3 (Good Health and Well Being), SDG 7 (Affordable and Clean Energy) and contribute to SDG 8 (Inclusive and Sustainable Economic Growth) and SDG 17 (Partnerships for the goals) as well. This paper can promote further understanding about the role of PPP to strengthen SDGs.

Keywords: SDGs; PPP; Government Guarantee

25278**CUSTOMARY LAW ASPECT ON THE ROLE OF RELIGIOUS JUDGE IN
THE CASE OF DIVORCE**

Nur Mohamad Kasim

ABSTRACT

Background. Marriage is a formal tie between man and wife to establish a family. It is founded based on state and religious laws, thus it may cause legal events, such as divorce. This study aims at studying the role of a judge in inspecting the divorce case through the aspect of customary law in Gorontalo. Methods. The researcher uses a descriptive method of analysis with a sociolinguistic and legal anthropological approach to see the influence of grammar and development of Gorontaloese culture in utilizing religious judge to solve the divorce case. Results and discussion. This study shows that the judge can utilize cultural approach in the context of customary law to investigate divorce case, through either sociolinguistic interaction or interpersonal emotional ways. Both cultural approaches enable stakeholders to discuss household problems; thus, it made possible for involved parties to change their minds based on their interpersonal interaction with the judge.

Keywords: Customary Law Aspect; Divorce; Religious Judge



25357**HOW GHRM PRACTICE INFLUENCE JOB PURSUIT INTENTION OF MILLENNIAL GENERATION IN INDONESIA AND MALAYSIA?**

Fita Wahyuningsih, Lindawati Kartika, Abdul Rashid Abdullah

ABSTRACT

Green Human Resource Management (GHRM) practice is a set of activities of human resources that involve environmental aspects in the implementation. The objective of this research was to measure perceptions of the millennial generation on the GHRM practice influence job pursuit intention in Indonesian and Malaysian companies and analyzes the effect of implementation GHRM practices in the company on the job pursuit intentions from millennial generation with pro-environmental consciousness as the moderator. The previous research found that millennial generation in India assume that the company which implemented GHRM practice is a prestige company. In this study, total sample 200 undergraduted student from IPB University, Indonesia and UPM, Malaysia. The data used in this research were primary data obtained through questionnaires with the likert scale and the scenario-based study and secondary data from the central statistical board and other literature that supports the research. The data were analyzed by using the descriptive analysis, hierarchical linear regression analysis and bootstrapping prosedures in SPSS 22. The result of this research, GHRM was found to relate significant with JPI and personal pro-environmental consciousness was not given the significant effect between GHRM and JPI.

Keywords: millennial generation, pro-environmental consciousness, job pursuit intention, GHRM practice



25502**ECOLOGICAL PERIL IN RELATION TO POLITICS OF SPACE CASE STUDY: DAMA VILLAGE, LOLODA, NORTH MALUKU**

Tommy Christomy, LG. Saraswati Putri

ABSTRACT

The distress of climate crisis has become the state of our human condition. We form our idea of politics in favor of our narrow anthropocentric interest. Our understanding of political space involves exclusively the interaction between human beings, disregarding the environment into the spectrum. Hence, politics is all about acquiring power, race to power among people, and the domination of human beings above nature. Our investigation should start with cases in Indonesia on how politics have gravely misconducted, marginalizing local people, and their environment. The eastern parts of Indonesia are often neglected, the extensive researches conducted for 2 years in Loloda, North Maluku have given us a based of understanding on problems of inequality and ecological exploitations. The people of Loloda have a strong history with the coastal tradition. They have an indigenous system called Kolano, or a form of Sultanate. Due to the array of disappointments to the central government, and even the provincial government, they resurrect the leadership of Kolano amidst facing poverty and losing their natural biodiversity to mining since the 1960s. This research utilizes interdisciplinary methods, from historical approach, linguistic and ecological philosophy analysis. This research discovers that the rising political subjects are indicated through the act of forming Kolano as a conscious and collective choice to protect Loloda's heritage and environment. In conclusion, the important findings of the research underlines on how the people of Loloda recreate a social-ecology political space, contesting the current power exercised by the governments. We can view this act as their way to criticize the ruling power, moreover, their political way to survive.

Keywords: Politics of Space, Social-Ecology, Anthropocentrism, Kolano, Ecological Politics, Indigenous Community



25632**THE RELATIONSHIP BETWEEN ENVIRONMENTAL LAW ENFORCEMENT RELATED TO ENVIRONMENTAL DEGRADATION AND TIN MINING ISSUE IN BANGKA BELITUNG ISLAND**

Syafri Hariansah, Widya Handini

ABSTRACT

Bangka Belitung faces very serious environmental problems due to illegal tin mining that give negative impacts to the sustainability of ecosystem and human life. Bangka Belitung is the second largest producer of tin in the world and tin mining in Bangka Belitung has been exploited since long time ago (hundred years). Tin mining activity basically increase the wealth of the community but it decrease the environmental stability inshore & offshore. Taking a case study approach, this study was conducted by reviewing and analyzing various legal instrument and information related to tin mining & environmental problem. Beside that, this study addresses the following research questions: What is the background issues relating the case between tin mining and environmental degradation in Bangka Belitung? How do tin mining activity give influence to this environmental degradation? How far is the commitment of enforcing the environmental law in this case? The result showed there's effort to provide the environmental law from exploration to post mining reclamation, but the implementation is not enough and need more commitment of enforcing the environmental law that give the major environmental degradation in Bangka Belitung Area. The implementation of the law itself need to be supervised by external party and the enforcement need to be increased as well as the coordination between stakeholders to support the Sustainable Development Goals in Indonesia especially in Bangka Belitung.

Keywords: Environmental law; Mining law; Tin mining

25669

**PRO-ENVIRONMENTAL BEHAVIOUR IN TRADITIONAL MARKET
A STUDY AT MAYESTIK MARKET (JAKARTA), IBUH MARKET (PAYAKUMBUH),
AND PANDANSARI MARKET (BALIKPAPAN)**

Sessario Bayu Mangkara, Hayati Sari Hasibuan, Herdis Herdiansyah

ABSTRACT

The traditional market is an important aspect in the national trade system. Present, the management of the traditional market in Indonesia is still not well implemented and is being improved on traders who pollute the environment. The purpose of this research is to analyze the internal, external, demography, and situational factors of pro-environmental behaviour. This research was conducted at Mayestik Market, Ibh Market, and Pandansari Market. The method is giving questionnaires and interviews to traders in the traditional market. Research analysis uses successive intervals and ANCOVA tests. The results of the research are there is a significant influence between internal factors (knowledge of environmental management), demographic factors (age and formal education level), and situational factors (income) on pro-environmental behaviour, except for external factors (trading experience). Partially, Pasar Mayestik has no significant factor influence, Pasar Ibh has an influence on demographic and situational factors, and at Pandansari Market internal and demographic factors (formal education level). Furthermore, internal and demographic factors are the factors that most influence pro-environmental behaviour and also as a key factor in achieving a sustainable city.

Keywords: Traditional Market, Pro-Environmental Behaviour, Environmental Management



25772**CRITICAL DIMENSIONS OF GOVERNMENT ROLES ON HUMAN SECURITY AND
SOCIAL PROTECTION IN BORDER AREAS**

Bambang Shergi Laksmono

ABSTRACT

This study intense to explore or analyze the critical dimensions on the role of government in integrating development efforts or scheme to the needs of border areas in Indonesia. Specifically, this study looks into the capacity and system support required to develop an effective local government. Collaboration between local and central government predictively accelerate achievements of Sustainable Development Goals (SDG`s) that relevant to Indonesian Governments' social development and social protection policies for the population in the international border. Human security outcomes and local govenment capacity will be placed as major variables to be examined. The study will use secondary data related to variables, conduct Focus Group Discussion with National Border Development Agency (Badan Nasional Pengelola Perbatasan) at national level. A number stakeholder sources at the Indonesian border will also contribute for additional information. Based on those methods, this research will present an analytical framework of local government capacity that become the obstacles to meet SDGs in border area in Indonesia.

Keywords: Border management, Local government, Border agency



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24230**EVALUATION OF SUSTAINABLE IMPACTS ON WASTEWATER TREATMENT OF TOFU INDUSTRY**

Laras Andria Wardani, Suyud Warno Utomo, Haryoto Kusnopranto

ABSTRACT

Background. Wastewater from tofu industry has an environmental problem lead to social conflicts between industrial and communities. Biogas production has prospective technology that can utilize renewable energy resource reserves and cleanse wastewater through special treatment. Currently, tofu wastewaters from CV. Proma has been treated using anaerobic technology up-flow Fixed Bed reactor. The aim of the research is to evaluate three impacts (environmental, social, and economic) of sustainability on wastewater treatment at CV. Proma tofu industry. Methods. This research method was conducted using direct observation in the field and interviewing to community around tofu industry. Results and discussion. The evaluation environmental results show that technology can be reducing organic materials in wastewater up to 83% and reducing 2.863.981,8 kg of CH₄ emission/years. The evaluation social and economic result show that the technology can be produced biogas equivalent to 5903 kg of LPG/years, which is able to meet the cooking needs of 40 households. Community perceptions show a positive impact because these activities provide economic benefits around Rp. 35.418.169/years for the community around the tofu industry. Conclusion. Wastewater treatment technology in Proma tofu industry can be integrate the three dimensions of sustainability (social, economic, and environmental).

Keywords: Tofu; Wastewater; Biogas; Emission; Sustainable; Environment; Social and Economy.



25270**ENFORCEMENT DETERRENCE IN TACKLING HAZE POLLUTION: INSIGHT FROM IN-DEPTH INTERVIEW**

Firman Tatariyanto

ABSTRACT

Reaching a better understanding of the enforcement of current regulatory approaches will provide a baseline for enhancing future policy choices for deterring and controlling the devastating effects of haze pollution. Using in-depth interviews with prominent actors who have direct and indirect involvement on the law enforcement process (i.e., Investigators, Prosecutors, Academic Experts, Witnesses in Court, NGO), this paper investigates how insufficient power and law enforcement capacity could hamper and deter policies for tackling haze pollution. The paper selects the Riau and South Sumatra Provinces as case studies because they are provinces on Sumatra Island with severe haze pollution. The paper adopts a novel approach to analyze obstacles to the enforcement of land/forest fire laws based on deterrence from the perspective of actors in the Riau and South Sumatra Provinces. The paper shows that an inadequate probability of detection for environmental offenses, especially in South Sumatra, causes economic agents to incorrectly receive signals to not engage in unsustainable and illegal activities. More specifically, the paper finds that the absence of a special arrangement for the recovery of environmental costs and direct financial mechanisms for how fines would be utilized has been hampering law enforcement. Moreover, a limited budget and coordination, as part of the government's capacity, provide a low probability of inspection and create a relatively high benefit for noncompliance, thus inducing the persistence of noncompliance. The establishment of a policy regime that is inclusive of fiscal provisions in mixed environmental management cannot be overlooked as a reference point for effective future solutions. The potential to use taxes to regulate pollution and generate revenue for the government would improve capacity and enhance the enforcement of haze pollution deterrence in Indonesia.

Keywords: Deterrence; Enforcement; Haze Pollution; Indonesia

25494**EFFECT OF UNWANTED PREGNANCY ON ANTENATAL CARE IN RURAL AND URBAN AREAS IN INDONESIA**

Martya Rahmaniati, Desya Mulyaningrum

ABSTRACT

The definition of unwanted pregnancy is a pregnancy that occurs outside of planning, because the husband or wife partner does not want to use contraception, there is no access to family planning services which causes pregnancy. Based on the 2012 Demographic and Health Survey, the proportion of unwanted pregnancies altogether in Indonesia amounted to 7.1% of the 18 898 women aged 15-49 births during the five years prior to the survey, while according to the 2017 Demographic and Health Survey proportion of unwanted pregnancies altogether in Indonesia amounted to 7.1% of 18,952 births. It is seen from the two periods of the IDHS that the proportion of unwanted pregnancies has not changed and is still stable. The purpose of this study about unwanted risk factors for pregnancy to the completeness of antenatal care (ANC). The study design using IDHS study design with cross sectional design. The sample in this study was a live birth in the five years prior to the survey report birth weight rural and urban areas in Indonesia. Data analysis used multivariate logistic regression analysis for risk factor models. Unwanted pregnancies have an influence on ANC in both rural and urban areas. There are differences in variables that affect unwanted pregnancies against ANC examination. Individual variables that affect rural areas are influenced by employment, economic status, age and parity, while in urban areas they are influenced by economic status and age. Cultural environments affect human behavior that has the culture, so that the cultural diversity cause variation in human behavior in all respects, including in health behavior.

Keywords: Antenatal Care; Public Health; Rural; Urban; Unwanted Pregnancies

25547**SOCIAL NETWORK ANALYSIS OF FORMULATING MASTER-PLAN OF GREEN OPEN SPACE AT JAKARTA CAPITAL CITY, INDONESIA**

Retno Setiowati, Hayati Sari Hasibuan, Raldi Hendro Koestoer

ABSTRACT

Green Open Space is an element of sustainability for an urban area. Rapid urbanisation and population growth in Jakarta have caused a reduction in the amount of Green Open Space (GOS) in urban areas. In Jakarta, the area of GOS reduced from 3,816.34 ha (5.84%) in 2011 to 3,473.94 ha (5.31%) in 2018. Based on Law Number 26 of 2007, it mandates the GOS area at least covering 30% of the city. GOS Master-Plan of Jakarta has been formally declared by Jakarta Medium Term Development Plan Year 2007-2012. The aim of this study is to analyze the pattern of stakeholder interaction in formulating GOS Master-Plan. The method of this study used Actor Network Theory, (ANT's) analysis. This paper focuses on the institutionalisation of Master-plan GOS through analysis of stakeholder interactions in Master-plan of GOS in Jakarta. Applying the logic of ANT, this paper discusses emerging networks, key actors, intermediaries, and their interaction process. This study adjusts the ANT concept by limiting the discussions only on human actors (people, institution, agency) and their interaction. Data and information are gathered from semi-structured interviews and documentary reviews. The conclusion provides dynamic stakeholder interaction maps for Master-plan of GOS institutions, which identify strong engagements of crossboundary Governor, Jakarta Government Agency, Non-Governmental Organization, academia, audit board, legislatif, private sector, and association. This study also uses UCINET network analysis software to draw institutional framework and stakeholders interactions map. Based on ANT's analysis, the key actors in the formulation of the GOS Master-Plan are Governor, Forestry Agency, and Planning Agency. The Governor as the central actor in directing and coordinating the actors. The Governor also gave direct directions to the Forestry Agency to prepare the GOS Master-Plan. The Planning Development Agency as a facilitator to support the formulation of the GOS Master-Plan.

Keywords: Green open space; Master-Plan; Actor Network Theory; Jakarta; Sustainability



25586**IDENTIFICATION AND CHARACTERIZATION OF FAULT USING MULTI SCALE
SECOND VERTICAL DERIVATIVE GRAVITY DATA:
A CASE STUDY IN YOGYAKARTA**

Mohammad Syamsu Rosid, Syamil Fakhruddin Hibatulloh Arildan, Agustya Adi Martha

ABSTRACT

Gravity data, which was obtained from southern part toward the north of Yogyakarta, is already used to identify the existence and depth of Kali Opak Fault and others. By applying the Multi Scale Second Vertical Derivative (MS-SVD) method, the location of fault and dip can be identified. The gravity anomaly in the form of Complete Bouguer Anomaly (CBA) is carried out upward continuation (UC) several times for many different of heights h . The SVD is performed on each high of continuation to identify the location of faults, i.e. when the SVD value is zero. Since the UC correlates to the depth of body anomaly, the dip of fault is obtained. So, the strike, dip size, location, type, and depth of faults are described. There are two main faults identified around the Kali Opak with normal fault types. One of them is strongly suspected as the existence of Kali Opak Fault with a strike and dip direction of N340E/1050 in the North side and N55.60E/1150 in the South side, while the other fault is on the northwest side of the Opak River with a strike and dip direction of N430E/650.

Keywords: Gravity Data; Multi Scale Second Vertical Derivative; Opak River Fault; Yogyakarta



25595**CHALLENGES IN CONVERGING FORSESIGHTS IN DEVELOPMENT PLANNING IN THE INDONESIAN BORDER**

Sari Viciawati Machdum, Bambang Shergji Laksmono, Aisha Rasyidila Kusumasomantri

ABSTRACT

The international land border of Indonesia is notably complex due to the development disparity between neighboring countries. Malaysia is known to be more developed, while Indonesia situation is relatively more progressive in comparison to East Timor and Papua New Guinea. The given situation has been the background of the complex socio-economic feature that marks the population push and pulls a situation that involves people and goods. The people-commodity complexity is particularly apparent in Indonesia Malaysia due to development disparity of the two countries. The study was carried out with a qualitative approach, using focus group discussion, in-depth interview, and field observation. The study observes that border community development needs to consider on three fundamental issues: the issue of vulnerability of transit citizens, the socio-economic vulnerability and development public services, that stems from lucrative illegal commodity exchanges between country borders. This study concludes that mounting need for social development and social protection serving particular needs of the population at the international border sufficient strengthening of the government institution that covers legal, institutional, and human resource capacity development.

Keywords: ASEAN, border areas, locality development, social vulnerability,



25680**MODEL OF SOCIAL MOVEMENT BASED ON THREAT PERCEPTION AND HABITUS OF ACTORS FOR STRENGTHENING LOCAL COMMUNITY PARTICIPATION ON ENVIRONMENTAL CONSERVATION**

Rachmad Kristiono Dwi Susilo

ABSTRACT

Background of this research is the development of the environmental movement in Batu municipality from 2016 to the present. The specific objectives and targets of this research are finding sustainable movement models as a place for local people to strengthen their participation in environmental conservation. The particular aims are first, explaining the world of phenomenology (threatening perceptions and habitus) of social movement actors, understanding the stream of their consciousness and explaining the participation of actors in the environmental conservation movement. The method used for this research is qualitative research with a phenomenological approach. Data collection techniques utilized for this research are in-depth interviews, observations, document studies, and FGD (Focus Group Discussion). The purposive sampling technique is used to select the sample. This research leads to the results and discussions: first, the social movement that runs in Batu nowadays is Tandur Banyu and the Brantas Festival. Tandur Banyu is a spring conservation movement initiated by young people who are members of Karang Taruna in Junrejo village. This movement focus on the conservation of spring and maintaining the river's cleanliness. While, the Brantas Festival is a spring conservation movement initiated by young people in Sisir urban village, Batu municipality. The threatening actors' perception drove the emergence of those two movements. Intimidating attitude is the knowledge gained by the actors as an interpretation of environmental changes in their dwellings. These begin the actor to make environmental conservation activities. The habitus of the actors profoundly influences the activities, targets, and models, that mostly are young people who are close to the environment, undergraduate, and activists. Knowledge of environmental movements, as one form of actor habitus, makes them choose non-radical actions. This movement generates participation, especially for youths in Batu and government officials.

Keywords: Social movement: threatening perception: habitus: participation and conservation



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24335**LEGAL AND SOCIAL RESPONSES ON LAND CONVERSION AGAINST FOOD SECURITY IN DECENTRALIZED INDONESIA: AN INSIGHT FROM JEMBER, EAST JAVA**

Muhammad Bahrul Ulum, Moch. Marsa Taufiqurrohman

ABSTRACT

The conversion of agricultural land has become one of the main courses in the effort to realize food security. Such a conversion has largely undergone in Indonesia, particularly after the introduction of decentralization. This study considers the rising demand for industrialization in the pursuit of economic growth and development, which subsequently occupies agricultural productive arable lands in many urban cities in Indonesia's decentralization regime. This study conducted lies in East Java Province and takes Jember Regency as a sample. By combining the doctrinal and socio-legal research, this study will look at how the government regulates the conversion of agricultural land along with the government's and community's responses to the existing regulations on agricultural conversion applied in Jember Regency. In so doing, this study aims to identify the extent to which the regulations that have been applied from both the national and local levels have resulted in adverse impacts to food security due to the conversion of agricultural land for development. This study concludes that the massive conversion of agricultural land has a considerable impact on food security. By taking into account decentralization that grants autonomous powers to local governments, each local government has a significant role in ensuring food security at this local level to contribute to the national food security. However, the regional spatial planning in Jember is a substantial problem on how the conversion of agricultural occurs for the cement industry. The overlapping of regulations at the local level indicates a new government's paradox in ensuring sustainable development and the government's ambition to promote food security.

Keywords: Agricultural Land, Decentralization, Food Security, Land Conversion.

25435**INDONESIA OIL PALM AS ISSUE INSIGHT OF ENVIRONMENTAL NON-
GOVERNMENT ORGANIZATION**

Dwi Ajeng Zahrotun Noor

ABSTRACT

This paper is one of response towards the growing of recognition influence of non-governmental organization in world politics, especially in environmental issue. European Union policy to ban Indonesia oil palm is one of example the advocacy power of environmental non-government organizations. This paper would examine the nature of environmental non-governmental organizations in Indonesia. Particularly, this paper focus on the issue of Indonesia palm oil. Most studies focus on environmental impacts or economic benefits derived from the growing of palm oil plantations. Some studies also show that the economic benefits generated are not comparable to environmental impacts. Environmental impacts that obtained reduce the quality of life of the community. In addition, several studies found that the environmental damage that occurred not only harm the local community. Environmental impacts are also felt by the global community. Several studies emphasizing that impact growing oil palm plantations have caused changes in the social structure of the community. Changes in the social structure of society led to the emergence of new minorities. To close the gaps, several studies on palm oil governance were carried out. However, several studies mention the role of non-governmental organizations on the Indonesian palm oil issue. Some studies only explain how the role of non-governmental organizations in certain political phenomena. Narratives of non-governmental organizations are only considered part of the tools for advocacy.

Keywords: Biodiversity; Climate Change; Deforestation; Environmental Non Governmental Organizations; Oil Palm;



25456**COASTAL INUNDATION IMPACT TO THE SUSTAINABILITY OF AGRICULTURE
SECTOR IN PEKALONGAN CITY, INDONESIA**

Erni Suharini, Elok Surya Pratiwi, Fahrudin Hanafi

ABSTRACT

Tidal inundation that is getting farther inland year by year has given a serious problem to the sustainability of farming activities in Pekalongan, but it has rarely been exposed more detail to the public. The aim of this research is to investigate the present effects of seawater inundation to the agriculture sector in Pekalongan coastal area. We focused on the study of paddy field area reduction, soil degradation and rice production loss. Time series remote sensing imageries from google earth satellite were used to analyze the seawater run up between 2003 and 2018. A Laboratory measurement was conducted to observe soil characteristics change in the area contaminated by seawater. This result revealed that for the last fifteen years', seawater has increasingly inundated the mainland of Pekalongan coastal area. The farthest distance of the inundation in 2018 reached 4.4 kilometers from the coastline and it rose 2.6 kilometers since 2003. High level of salinity decreased the soil fertility of paddy fields area that fluctuate inundated by seawater. The Coastal inundation phenomena has contributed to the reduction of rice production by almost 200 ton/year during 2003 and 2018. This result has showed a critical condition of agriculture sector in study area, thus some mitigation actions become a necessity thing in order to protect our land as well as food security on the future.

Keywords: agriculture, coastal area, inundation, seawater, soil

25533**SUSTAINABLE REPORTING IN INDONESIA: PALM OIL CERTIFIED ISPO
PROGRESS IN RIAU, WEST SULAWESI, CENTRAL KALIMANTAN**

Tanti Budi Suryani, Taufik Akbar Akbar, Muhammad Muflih Mappaujung

ABSTRACT

The sustainability regulation standard for the palm oil industry in the form of certification is still considered as one of the instruments needed to offset the deforestation rate and the socio-economic impact caused. At least since 1990s the pressure on standardization in industries that manage forests and natural resources to pay more attention to the environment has begun to increase. Environmental damage in Indonesia has increase sharply, especially since 1990s when large-scale and transnational investments were opened in Sumatra, Kalimantan, and Sulawesi. This study uses the quantitative method with mix method approach utilizing and assessment of the disclosure of the sustainability of Global Reporting Initiative 4 (GRI4) which includes 17 goals of the SDGs and combined with analysis of discussion with civil society organization, local governments, tracking media records from four ISPO certified business units. This research finds that information disclosure on the sustainability of ISPO certified business units is almost impossible. The main reason is that proactive information from the ISPO business unit is not provided on the ISPO official website or on the company's official website. This is very difficult if the regional government or the central government also civil society organizations want to supervise, especially on non-financial aspects in the event of environmental and social violations of the fulfillment of the certification that has been given. Certified business units that are not only ISPO but also have RSPO (Roundtable Sustainable Palm Oil) certificates can be easily accessed using the GRI 4 disclosure level even though the disclosure rate is only 76% or means the disclosure is quite open.

Keywords: sustainability reporting, palm oil, environmental degradation, ISPO, palm oil governance



25588**COAL MINING VERSUS PALM OIL PLANTATION: COMPARING THE IMPACTS OF THE INDUSTRIES ON THE HUMAN SECURITY OF LOCAL COMMUNITIES IN INDONESIA**

Suyani Indriastuti

ABSTRACT

Coal mining and palm oil plantation are essential sectors for supporting development in Indonesia, as stated in the Indonesian national development agenda. However, these sectors have been criticised as the cause of horizontal conflicts, deforestation, and also natural disasters. The problems might threaten the human security of local communities, including freedom from want, fear, to live in dignity. This paper aims to compare the impacts of coal mining industries and palm oil plantation on the human security of local communities. For this purpose, this study applies comparative process tracing methods on the case of Kalimantan Timur and Kalimantan Tengah provinces as the center of coal mining and palm oil plantation, respectively. Process tracing methods is useful for tracing the governance of palm oil plantation and the mining industries and its impacts on the human security of local communities. Building on Karl Polanyi's idea on commodification, this study found that the mining industries have made Kalimantan Timur as one of the richest provinces in Indonesia. Nevertheless, it has also co-opted the livelihood of local communities, such as causing unemployment. Local communities, most of whom originally work as farmers, lose job opportunities due to the transfer of agriculture to mining, which does not fit with the agency of local communities. In contrast, Kalimantan Tengah has developed palm oil plantations by establishing cooperation with local labourers and local farmers in the Nucleus Estate Smallholder scheme (NES). It prevents unemployment since local communities are actively involved in palm oil plantation. This paper argues that palm oil plantation has better impacts on the human security of local communities than coal mining industries.

Keywords: Human security; Mining; Palm oil

25655**DEVELOPMENT MODEL OF COFFEE AGRIBUSINESS IN RENGGANIS MOUNTAIN SLOPE JEMBER EAST JAVA**

Tanti Kustiari

ABSTRACT

The coffee production potential in Rengganis Mountain Slope, Jember, East Java, Indonesia has not yet been optimally managed. This condition indicates the lack of harmony within the running system in the plantation sector in Jember. It is important to involve all related elements in a coffee agribusiness, either the main element or the supporting element, to solve the problem as the effort in developing coffee agribusiness in Rengganis Mountain Slope, Jember, East Java. The fact motivated a study with ISM method to map the problems, capture the key subjects and factors influenced the system as well as develop the institutional model to fix the current condition. This is a descriptive study with expert system approach. Sample was determined through purposive sampling by paying attention to the representation of each field or institution. The interview involved 5 experts, consisted of the experts from Indonesian Coffee and Cocoa Research Institute, Jember Office of Crop and Horticulture, Head of Plantation Counseling, Manager of a Private company, and a farmer. The data was processed by using dDSS V.1 PRE-NET application. The Interpretive Structural Modeling (ISM) analysis result showed that the main factor which drove the change of coffee agribusiness system was the synergy of business owner, farmers, and the government to solve the problems within the coffee agribusiness. The most urgent problem to solve was making a regulation which will benefit all parties. The suitable institutional model for the condition above was the involvement of the key subjects such as government, farmers, and private parties to collaborate through consultation and discussion. Thus, the farmer and business owner will be in the develop economic and social up grading equity.

Keywords: Agribusiness, Coffee, Interpretative Structural Modeling, Model



25745**THE EFFECTS OF WEATHER VARIABILITY AND SEX TYPE ON THE BRAHMAN CROSS CATTLE BODY WEIGHT GAIN ON EX-COAL MINING AREA**

Farisatul Amanah, Tedi Yunanto, Doddy Herika

ABSTRACT

Ex-coal mining area has multiple functions as it can be purposed as cattle farm for community around mining area. Further studies need to be conducted to assess whether the development of cattle farm on ex-coal mining can be successful for business production. However, open-pit mining effects on the landscape and coverage alteration that may lead the temperature arise and influence the cattle growth due to the thermal stress. This study aims to define the relationship between environmental variable, such as temperature and rainfall, and cattle sex on the Brahman cross cattle (*Bos indicus*) growth. This study was conducted in the integrated cattle farm Lati Site, PT Berau Coal, East Kalimantan Province, Indonesia. The data was taken during September 2018 to August 2019 on 7 bulls (male cattle) and 7 cows (female cattle) which the initial age was 18 to 24 months. The data was analysed using linear regression and descriptive statistic using program software Statistica 13. In general, temperature and precipitation did not influence the male cattle weight gain ($p>0.05$), whereas temperature alteration effected on female cattle weight change ($p<0.05$). Breeding male cattle can be chosen for business purpose on ex-coal mining area. Furthermore, this business can prove that non-renewable resources can be sustainable after mined-out to renewable resources development.

Keywords: Body weight gain; Brahman cross; Ex-coal mining; Sex type; Weather variability



25864**DOES MINING AND QUARRYING ACTIVITIES BRING ENVIRONMENTAL DAMAGES? EVIDENCE FROM INDONESIA**

Herjuno Bagus Wicaksono, Lourentius Dimas Setyonugroho, Israul Hasanah

ABSTRACT

In Indonesia, mining and quarrying sector is one of the most important sectors in the economy. However, it can also bring a negative consequences on the environment. One of the cases can be found in East Kalimantan. As one of the most important sector in East Kalimantan, with a lot of coal mining spread across province, mining and quarrying is not just producing output for the province, but eventually it also creating many environmental problems. Lower quality of water, as well as flood, drought, and erosion of fertile soil layer are some examples of problems which caused by the mining and quarrying activities in East Kalimantan. Those problems is hampering our effort from achieving some of SDGs goals which related to environmental sustainability. This circumstance motivates us to see how the expansion of mining and quarrying sector affecting the sustainability of environment in Indonesia. To see the association between mining and quarrying activities with environmental pollution in Indonesia, we apply Ordinary Least Square (OLS) regression using pooled district level data on three different periods, which are 2008, 2011, and 2014. We use real gross domestic product (real GDP) on mining and quarrying sector to gauge the extent of mining and quarrying activities and information from PotensiDesa (Podes) dataset to identify environmental problem which related to air, land, as well as water. Our estimation shows that an increase of GDP on mining and quarrying sector is associated with higher spread of environmental problems in Indonesia which consist of air, land, and water pollution. This study provides an important implication: More well-organized mining and quarrying activities is important to avoid any further environmental problems.

Keywords: Mining, Environmental, SDGs, East Kalimantan



LIST OF PAPERS

FISHERY AND MARINE SUSTAINABILITY

NO	PAPER ID	TITLE AUTHOR/AUTHORS
1	25282	SUSTAINABLE FISHERIES SUBSIDIES FOR SMALL SCALE FISHERIES IN INDONESIA Andre Notohamijoyo, Adi Setya Wiyata, Mustaidz Billah
2	25296	THE LONG WAY OF ECOLABEL SCHEME ACCEPTANCE IN INDONESIA: CASE STUDY IN TUNA FISHERIES Andre Notohamijoyo, Martani Huseini, Raldi H. Koestoer, Syafril Fauzi

25282**SUSTAINABLE FISHERIES SUBSIDIES FOR SMALL SCALE FISHERIES IN INDONESIA**

Andre Notohamijoyo, Adi Setya Wiyata, Mustaidz Billah

ABSTRACT

Environmental management become major concern all over the world since the adoption of the Brundtland Commission report entitled "Our Common Future" in 1987. Awareness of the need for sustainable management to create people's welfare being the mainstream of development in each country or popularly called sustainable development. As an archipelagic country that has large oceans with enormous fisheries resources, Indonesia face threats to fisheries resources which are suspected by the administration of fisheries subsidies that did not consider the sustainability of fisheries resources. On the other side, government provide fisheries subsidies to alleviate poverty and improve fishermen's welfare. A number of countries, especially developed countries encourage the elimination of fisheries subsidies at World Trade Organization (WTO) and other countries, especially developing countries opposed the proposal of the developed countries. However, it is necessary to make a balance between community development and environmental protection in case of fisheries subsidies. Subsidies are needed to maintain socio-economic resilience of small-scale fishermen. This is common in developing countries like Indonesia. This paper review Indonesian case, considering that small scale fishermen have the most percentage in fisheries structure. The small scale fishermen still depend on the subsidies.

Keywords: fisheries subsidies, sustainable fisheries management, WTO, fisheries resources



25296**THE LONG WAY OF ECOLABEL SCHEME ACCEPTANCE IN INDONESIA: CASE STUDY IN TUNA FISHERIES**

Andre Notohamijoyo, Martani Huseini, Raldi H. Koestoer, Syafril Fauzi

ABSTRACT

Since the emergence of Blue Angel in 1977, the ecolabel scheme develop along with the growing awareness of the people about the need for the sustainable resources. Most developing countries rely on commodity trade but the sustainability is often ignored. These conditions cause a threat to the resources. The ecolabel scheme has not been of particular concern of developing countries. Unfortunately, the existing schemes are more business-oriented. High requirements and costs of certification are the main problems of implementing ecolabel in developing countries. Indonesia is a developing country that gets around this condition through the issuance of various laws and regulations that encourage the scheme that is recognized internationally especially in the fisheries sector. As the largest archipelagic country in the world, the fisheries sector has extraordinary resources as well as a threat to its sustainability, especially tuna, the highest economic value species in the world. Various government regulations have been prepared to facilitate the implementation of the ecolabel scheme for tuna fisheries. The main challenge is the stakeholder understanding of the regulations. An intensive education and dissemination process is needed to build community awareness. Implementation success depends on sustainable education process.

Keywords: Sustainability, ecolabel, tuna fisheries, dissemination, education process



LIST OF PAPERS

SCHOOL OF ENVIRONMENTAL SCIENCE

NO	PAPER ID	TITLE AUTHOR/AUTHORS
1	27021	OPTIMIZING WAITING LOUNGE FUNCTION AT PUBLIC SERVICE BUILDING TO ENCOURAGE SOCIAL INTERACTION AMONG VISITORS – CASE STUDY AT PUBLIC SERVICE MALL OF DKI JAKARTA Ari Naldi, Sinta Ramadhania P.M., Belathea Chastine, Agastyo Djanardono B., Ofan Bosman, Reza Dwi Putra
2	27022	THE EFFECT OF LAND COVER CHANGES ON THE HYDROLOGICAL SYSTEM IN JAKARTA Fentinur Evida S, Rani Gustia, Nadya Paramitha, Rivaldo Restu, Noviana Bayu A
3	27023	A PEDESTRIAN'S EXPERIENCE: REDISCOVERING ROUTE AND DESIGNING GREEN SIDEWALKS FROM FATAHILLAH MUSEUM TO MARITIME MUSEUM Andhika Nurul Wahidah, Bellanti Nur Elizandri, Karina Indah Solihah, Syahra Ariesta F.S., Dinar Dara T.P.P.
4	27024	JAKARTA'S LAND SUBSIDENCE: MANAGEMENT OF JAKARTA COASTAL SPATIAL PLANNING Kartika Putri, Bayu Nugraha, Jefri E. Gultom, Vinca R.Y., Sandy Leo
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6	27026	THE ARRANGEMENT OF UNDERGROUND ELECTRICITY TRANSMISSION IN JAKARTA Adam Wicaksono, Djadjang Godjali, Retno Utari, Umar Atik
7	27027	ANALYSIS OF UNTRANSPORTED WASTE IN JAKARTA AND RECOMMENDATION FOR ALTERNATIVE LOCAL WASTE TREATMENT LOCATIONS I Nyoman Mardika Putra, Meida, Muchtazar, Peni Puspitasari

27021**OPTIMIZING WAITING LOUNGE FUNCTION AT PUBLIC SERVICE BUILDING TO ENCOURAGE SOCIAL INTERACTION AMONG VISITORS – CASE STUDY AT PUBLIC SERVICE MALL OF DKI JAKARTA**

Ari Naldi, Sinta Ramadhania P.M., Belathea Chastine, Agastyo Djanardono B., Ofan Bosman, Reza Dwi Putra

ABSTRACT

Public service buildings are built and operationalized to serve society such as hospital, immigration office, and government office. The public service building is a closed public space where social interactions of multi-parties occur, either between the officers and visitors or among fellow visitors. In the case of Jakarta's Public Service Mall, it was found that there was lack of social interaction among fellow visitors who were waiting for their call (queue) in the waiting lounge. However, based on our literature review, waiting lounge could be used as an interactive space to encourage social interaction among the visitors. This research used qualitative approach by advantaging secondary data from previous researches and reports. The data were processed by descriptive analytic method to assess the impacts of optimizing the waiting lounge function at Jakarta's Public Service Mall on social interaction as well as service quality improvement. The results indicate that the optimization of the waiting lounge function could encourage social interaction among visitors and potentially raise visitor/customers' satisfaction and convenience for services provided by the Jakarta's Public Service Mall.

Keywords: Social Interaction; Waiting Lounge; Public Service Building; Jakarta

27022**THE EFFECT OF LAND COVER CHANGES ON THE HYDROLOGICAL SYSTEM IN JAKARTA**

Fentinur Evida Septriana, Rani Gustia, Nadya Paramitha, Rivaldo Restu, Noviana Bayu A

ABSTRACT

High economic growth in Jakarta was accompanied by an increase in population and infrastructure development. Increasing infrastructure development in Jakarta causes a decrease in vegetation cover and disruption of the natural functions of ecosystems in Jakarta, such as the function of the hydrological system. Physical and infrastructure development in urban areas should be balanced with efforts to manage the environment so that the negative impacts that arise can be minimized. One effort to manage the environment can be done with the optimal arrangement and use of space so that the ecosystem functions is maintained. The purpose of this study is to scientifically correct land use or spatial planning in Jakarta to produce general recommendations related to the conservation of the hydrological system in Jakarta. The analysis was carried out quantitatively using Geographic Information Systems, based on secondary data and literature studies. Changes in land cover in 1999 to 2019 were detected by Landsat Imagery and Geographic Information Systems. Open and vegetated land cover in DKI Jakarta has decreased, while the area of constructed land has continued to increase. In 1999, land cover in DKI Jakarta consisted of 65.5% of the constructed land and 35.5% of the open land, while in 2019, the composition changed drastically to 93.6% of the constructed land and 6.4% of the open land. Almost all areas in DKI Jakarta are constructed so that the hydrological system is no longer natural. Soil surface that is covered by impermeable surface has caused an increase in surface runoff rate and decreased base flow rate resulting in flooding. Disruption to the hydrological system is made worse by water pollution and improper use of water. Some recommendations resulted by this study are related to the improvement of the existing hydrological system in Jakarta, in order to minimize the flooding.

Keywords: Land Cover Changes, Hydrological System, Jakarta

27023**A PEDESTRIAN'S EXPERIENCE: REDISCOVERING ROUTE AND DESIGNING GREEN SIDEWALKS FROM FATAHILLAH MUSEUM TO MARITIME MUSEUM**

Andhika Nurul Wahidah Bellanti Nur Elizandri Karina Indah Solihah Syahra Ariesta F.S Dinar Dara T.P.P

ABSTRACT

Kota Tua Jakarta is one of the tourist spots in Jakarta which divided into five main zones: Sunda Kelapa, Fatahillah, Pecinan, Pekojan, and Peremajaan. Most of the tourists only visiting Fatahillah zone. It is caused by the strategic location and accessibility from the Train Station and Transjakarta Terminal. It is different from other zones that were rarely visited for educational purposes only (study tours). The purpose of this research is to connect the Fatahillah Museum and Maritime Museum by set up the pedestrian route and green-sidewalk design. The methodology of this research is a structural interview and participatory observation. According to structural interviews, respondents know about Kota Tua Jakarta and mostly they have visited Kota Tua Jakarta. They use public transportation to go there and to reach the location around Kota Tua Jakarta on foot. From the observation, not all of the routes between the Fatahillah Museum and Maritime Museum have proper sidewalks. Therefore, it is recommended to provide the green-sidewalk design to build comfort for tourists and the public who come to Kota Tua Jakarta.

Keywords: Kota Tua, Jakarta, Green Pedestrian, Fatahillah Museum, Maritime Museum



27024**JAKARTA'S LAND SUBSIDENCE: MANAGEMENT OF JAKARTA COASTAL SPATIAL PLANNING**

Kartika Putri, Bayu Nugraha, Jefri E. Gultom, Vinca R.Y., Sandy Leo

ABSTRACT

Several studies defined that Jakarta is facing a significant threat to land subsidence, mainly in coastal area settlements in North Jakarta. In some areas, the maximum rate of land subsidence could reach up to 25 cm per year. The worst scenario predicted that Northern Jakarta will be drowned in 2050 to 2080 if there was no mitigation strategy undertaken. We reviewed the spatial planning management in the coastal area of North Jakarta and designed strategies for land subsidence mitigation. We reviewed several studies, mainly from Abidin et al., 2011; Ng et al., 2012; Hallegatte et al., 2013; Takagi et al., 2016. Afterward, we took a survey in two places which is Pantai Mutiara in Pluit Area, and Pelabuhan Kali Adem Muara Angke to get a comparative view and describe the present condition. Pantai Mutiara has the largest rate of land subsidence that reaches up to 80—90 cm from 1997 to 2007. Three factors, such as excessive groundwater extraction, massive loads of buildings and constructions and sediments in estuary could be the main reasons why Jakarta is sinking. We suggest to reduce groundwater consumption and any kind of constructions, for instance, apartments and luxury settlements to build in Northern Jakarta. Spatial planning in Northern Jakarta, mainly in the coastal area must be totally revised.

Keywords: Coastal area, Northern Jakarta, urban development, urban planning



27025**JAKARTA READINESS IN FACING CLEAN ENERGY PUBLIC CHARGING STATIONS
NEED ANALYSIS**

Muhamad Rizky, Robertus Irwan Putrantomo, Tiara Yasinta, Toni Prasetyo

ABSTRACT

Indonesia is one of countries committed to reducing greenhouse gas emissions. To support this commitment, Indonesia enact regulation regarding Acceleration of the Battery-Based Electric Motor Vehicle Program for road transportation (Perpres RI No. 55/2019). Since the enactment of these regulations, developments in the demand for electric vehicles (EV) have increased. The main impact of the transition is the construction of electricity charging infrastructure for EV. Currently Jakarta already have 721 public EV charging station to support EV population in Jakarta and this study will analyse if the current number and area that have been determined is already sufficient. The study will use population based equation from literature review to compare ideal number of public EV charging station with actual number that have been installed. The result is number of existing installed public EV charging station in Jakarta (721 ea) is still sufficient to support EV development program in Jakarta, however from physical observation it is necessary to reassess current area that had been installed for public EV charging station to be comply with minimum requirement of public EV charging station. Future work will require assessment of all installed public EV charging station and efficiency of the charging station in term of location and ease of usage.

Keywords: Electric vehicle; charging station; need analysis

27026**THE ARRANGEMENT OF UNDERGROUND ELECTRICITY TRANSMISSION IN
JAKARTA**

Adam Wicaksono, Djadjang Godjali, Retno Utari, Umar Atik

ABSTRACT

Energy needs, especially electricity is a basic requirement in a country to grow the economic. At present the electricity sales growth in DKI Jakarta Province in 2017 is 2.39% with installed power capacity of 3,539.0 MW and an average sales energy growth of 2018-2027 reaching 5.21%. The tendency to increase economic growth, population growth and an increase in the electrification ratio will certainly be followed by the addition of electricity power system infrastructure. The development of transmission and distribution networks as one of the electricity power system infrastructures will affect the spatial planning of the DKI Jakarta area, this will certainly affect community activities. This study uses a questionnaire method to determine public opinion on the existence of transmission and distribution infrastructure. The results of the questionnaire were analyzed by univariate analysis. The results showed that 91% of residents who were active in DKI Jakarta chose the installation of underground cable channels, because they were considered not to disturb the aesthetics, were safer and could increase the space for residents.

Keywords: Energy, spatial, electricity, transmission

27027**ANALYSIS OF UNTRANSPORTED WASTE IN JAKARTA AND RECOMMENDATION FOR ALTERNATIVE LOCAL WASTE TREATMENT LOCATIONS**

I Nyoman Mardika Putra, Meida, Muchtazar, Peni Puspitasari

ABSTRACT

Waste is one of the biggest environmental problem facing the world today, especially in developing countries such as Indonesia. As a province high the highest population density in Indonesia, DKI Jakarta need to manage waste generated in the area to prevent environmental pollutions and improve city cleanliness which can have direct impacts to the health of people. The amount of untransported waste could reach more than 655 tons/day which is a huge number and this amount of waste can harm the environment if they are not managed properly. To analyze the existing condition, literature review is conducted in DKI Jakarta. Data of waste generation are plotted to a map and landscape analysis is conducted to determine the best alternatives of local waste management in the area. Based on this study, the amount of untransported waste in Jakarta is 9.17% of total waste generated. South Jakarta city is the city with the highest untransported waste amount in Jakarta. North Jakarta is the second highest untransported waste area in DKI Jakarta which followed by East Jakarta. Focus of local waste treatment should be addressed in South Jakarta, especially for organic waste. Local composting site can be established in each district to reduce the amount of waste that sent to landfill as well as prevent untransported waste for polluting the environment. In North Jakarta, the alternative which available is Waste to Energy Plant with the consideration of area distance to the coastal line. East Jakarta may consider for improving their transportation coverage since the distance to Bantargebang Landfill is not very far if we compare to other cities in Jakarta province.

Keywords: DKI Jakarta; Landscape analysis; Local composting; Untransported waste; Waste to energy





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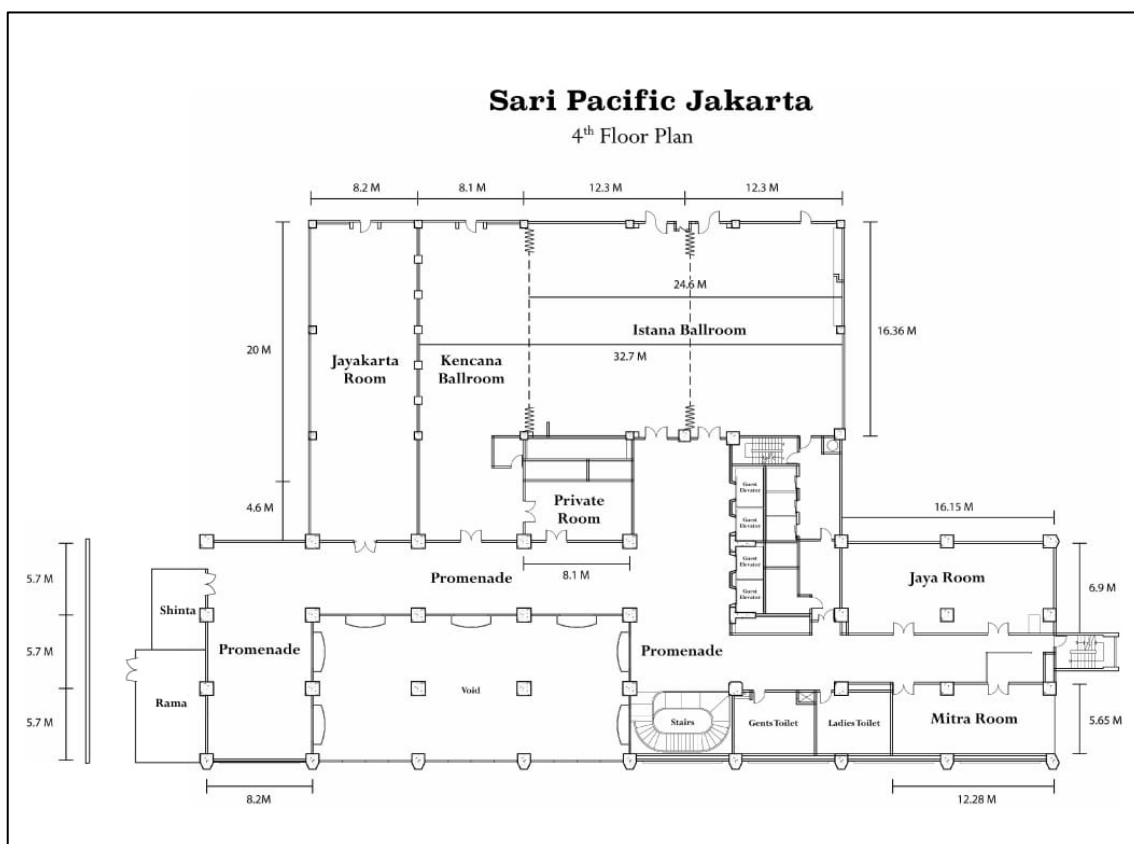
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The 1st International Conference on Environmental Science and Sustainable Development



Welcome Remarks by Dr. Emil Budianto
(Director of School of Environmental Science, Universitas Indonesia)



Welcome Remarks by Dr. Hayati Sari Hasibuan (Conference Director)



National Anthem of Indonesia "Indonesia Raya"



Opening Ceremony

The International Conference on Environmental Science and Sustainable Development (ICESSD) 2019



Traditional Welcome Dance "Ratoh Jaroe Dance"



Raldi Hendro Koestoer, Ph.D. (School of Environmental Science, Universitas Indonesia, Indonesia)
"Current Environmental Issues in Southeast Asia"



Professor Yoko Hayami (CSEAS, Kyoto University, Japan)
"A Field-based Humanistic Understanding of Environmental and Sustainability"



Professor Ben White (AES, International Institute of Social Studies, Netherlands)
"Agriculture and The Next Generation"



Professor Jeon Je Seong (KISEAS, Chonbuk National University, Korea)
"Toward People-Centered Indonesian-Korea Relations"



Jeetendra Kumar (MapInfo, Pitney Bowes, India)
"Location Intelligent Decision Support System for The Environmental and Sustainable Development"



Plenary Session
"The Strengthening of Sustainable Development Goals (SDGs) in Southeast Asia"



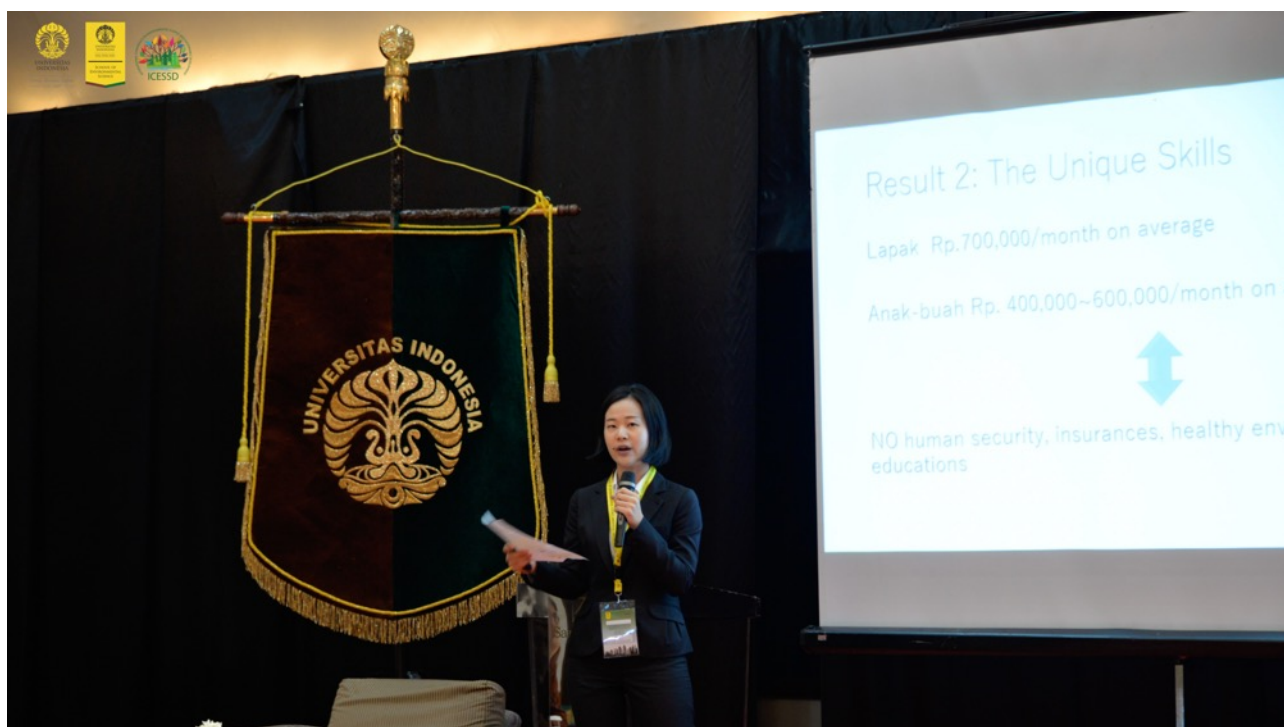
Dr. Takuro Furusawa (ASAFAS, Kyoto University, Japan)
"Human Spectrum and Ecology in Southeast Asia and the Pacific for Global Sustainable"



Professor Nadarajah (XHS, the Xavier University Bhubaneswar)
 "Living in a Broken World (or Cry of the Planet, Cry of the Poor) Destructive Desire, Disconnected
 Disciplinarily, and Disruptive Deschooling"



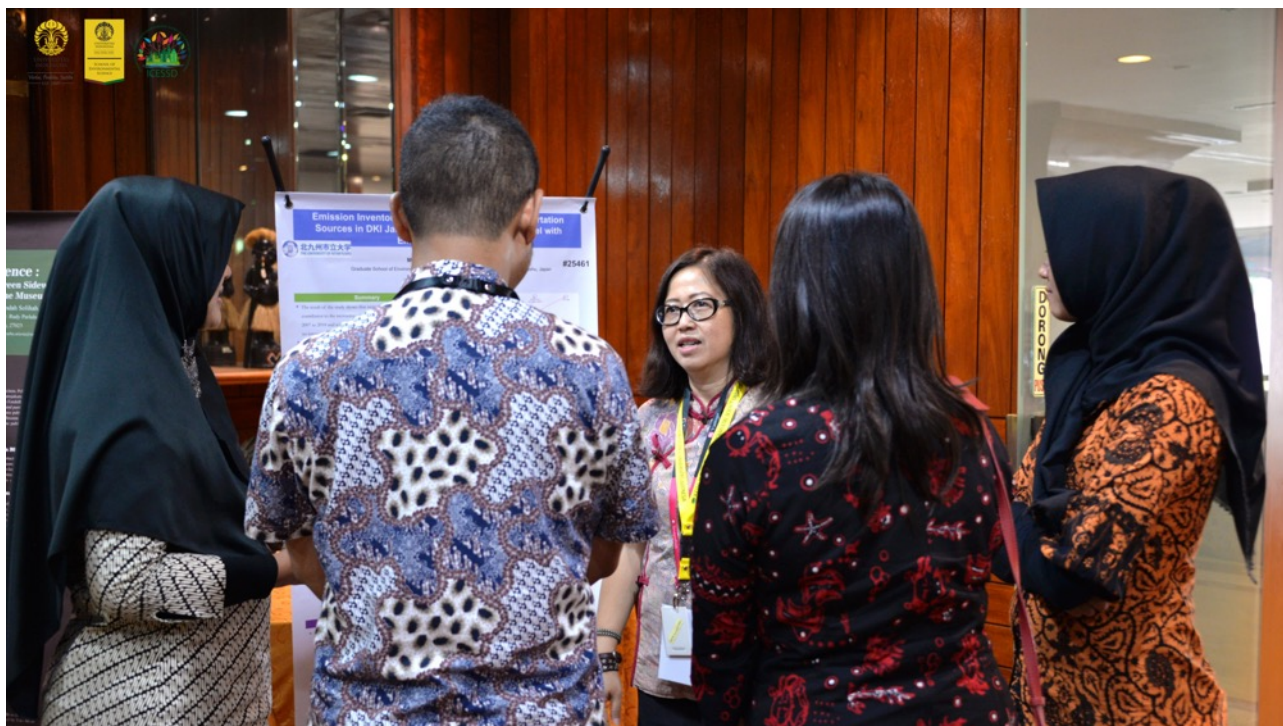
Photo Session



Parallel Session
Mana Kakinuma "Behind the Trash"



Parallel Session



Poster Session

Merita Gidarjati "Emission Inventory and Prediction of Road Transportation Sources in DKI Jakarta Based on Auto Cohort Model with Emission Sub Model"



Poster Session



Photo Session



Photo Session



Photo Session



Photo Session



Master of Ceremony
The International Conference on Environmental Science and Sustainable Development (ICESSD) 2019



National Anthem of Indonesia "Indonesia Raya"



Closing Ceremony
The International Conference on Environmental Science and Sustainable Development (ICESSD) 2019



Prof. Emil Salim (School of Environmental Science, Universitas Indonesia, Indonesia)
"Strengthening Sciences Interconnectivity to Reach for Sustainable Development Goals"



The Best Presenter

Makibi Nakano "Outer Sea Fishing and Sea-Space Cognition of Sama-Bajau People in Banggai Islands, Central Sulawesi, Indonesia"



The Best Poster

Gatot Suhariyono "Dispersion of Iodine-131 Radioactive Airborne in the Form of CH_3I , HOI and I_2 from Radioisotope Production Facility Stack to The Environment"



Closing Remarks by Dr. Tri Edhi Budhi Soesilo
(Vice Director of School of Environmental Science, Universitas Indonesia)



Photo Session



Photo Session



Photo Session

The 1st International Conference on Environmental Science and Sustainable Development (ICESSD)



The 1st International Conference on Environmental Science and Sustainable Development (ICESSD)
"THE STRENGTHENING OF SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN SOUTHEAST ASIA"
Jakarta, 22-24 October 2019

The 3rd International Conference Series on Life Cycle Assessment (ICSOLCA)



The 3rd International Conference Series on Life Cycle Assessment (ICSOLCA)
"LIFE CYCLE ASSESSMENT AS A METRIC TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS"
Jakarta, 24–25 October 2018

The 7th Annual Southeast Asian Studies Symposium (SEA Symposium)



The 7th Annual Southeast Asian Studies Symposium (SEA Symposium)
"WHAT IS SOUTHEAST ASIA? EXPLORING UNIQUENESS AND DIVERSITY"
Universitas Indonesia, 22–24 March 2018



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