BOOK OF ABSTRACTS

THE 1ST INTERNATIONAL CONFERENCE ON ENVIRONMENTAL SCIENCE, DEVELOPMENT, AND MANAGEMENT (ICESDM)

NOVEMBER 2ND, 2023

Organized by:

- **Postgraduate Program Lambung Mangkurat University**
- **Doctoral Program Environmental Science**

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2. **Nature resource, biodiversity, and conservation**
3. **Agriculture and food**
4. **Policy, socioeconomics, education, and law**

Welcoming Speech

Dear Colleagues and Participants,

It is a great pleasure to welcome colleagues and participants worldwide to the The 1st International Conference on Environmental Science, Development, and Management (ICESDM) that will be held on November 2nd, 2023.

The Postgraduate Program, Lambung Mangkurat University will host this conference, collaborating with many more collaborators, such as Perkumpulan Program Studi Ilmu Lingkungan Indonesia (PEPSILI), Universitas Islam Kalimantan (UNISKA), and Pusat Penelitian Material Berbasis Lahan Basah (PPMBLB) ULM. The conference's theme is "The Role of Education and Research for Supporting the Development of A Sustainable Environment towards Green City".

In this special occasion, We also would like to thank all distinguised invited speakers who come from attended various universities:

1. PROF. YON CHAN SEO from Sangji University, South Korea
2. PROF. AZLAN KAMARI, Ph.D, Universitas Pendidikan Sultan Idris, Malaysia
3. PROF. KOSUKE MIZUNO, Ph.D, University of Kyoto, Japan
4. ASSOC. PROF. MUHAMMAD ROIL BILAD, Universiti Brunei Darussalam
5. PROF. DR. RER. NAT. DEDI ROSADI, Gadjah Mada University
6. PROF. MUTHIA ELMA, Ph.D, Lambung Mangkurat University

Over 100 participants ranging from students, lectures, researchers on life science registered in online or offline mode. The 1st ICESDM 2023 is successful because of the support from many parties, including the Rector of Lambung Mangkurat University, Prof. Dr. Ahmad, S.E, M.Si; the director of Postgraduate Program Lambung Mangkurat University, and all dedicated committee who have been doing fantastic job to make this event run smoothly.

This event will relate to an integrated global perspective to map out the various drivers and alternative scenarios as an integrative solution for updating Environmental Science, Development, and Management issues. The conference will provide an ideal platform to share information and discuss their scientific results and experiences, with particular references to maintain the environment. We can guarantee you will find this conference stimulating, rewarding and meaningful.

We are excited about the great opportunity of having a hybrid conference to reach more audiences across the world. We are looking forward to your participation.

Yours sincerely,

Chairperson

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Sub Topic 2 **Natural resources, biodiversity, and conservation**	1. Prof. Azlan Kamari 2. Prof. Sunardi, S.Si., M.Sc., Ph.D 3. Prof. Iryanti F Nata, S.T., M.T., Ph.D 4. Dr. Drs. Krisdianto., M.Sc 5. Dr. Ir. Pahmi Ansyari, M.S 6. Anni Nurliani, S.Si., M.Sc., Ph.D 7. Wiwin Tyas Istikowati, S.Hut., M.Sc., Ph.D
Sub Topic 3 **Agriculture and Food**	1. Prof. Agung Nugroho, S.TP., M.Sc., Ph.D 2. Prof. Dr. Ir. Danang Biyatmoko, M.Si 3. Prof. Ir. Abdul Malik, S.Pt., M.Si., Ph.D., IPU., ASEAN Eng. 5. Prof. Dr. Ir. Hj. Tintin Rostini, S.Pt., M.P., IPM
Sub Topic 4 **Policy, socioeconomics, education, and law**	1. Prof. Kosuke Mizuno 2. Prof. Deasy Arisanty, S.Si., M.Sc 3. Prof. Dr. Abdul Halim Barkatullah, M.Hum 4. Dr. Yati Nurhayati, S.H., M.H 5. Dr. Yusuf Hidayat, S.Sos., M.Si 6. Dr. Mispansyah, S.H., M.H 7. Muhammad Hudaya, S.E., M.M., Ph.D

CONFERENCE PROGRAM

THURSDAY: NOVEMBER 2, 2023		
08.00-09.00	**Registration Open**	
09.00-09.45	**Welcoming Ceremony**	
09.45-10.15	**Opening Speech and Ceremony** **Rector, Lambung Mangkurat University**	
10.15-10.30	Break	
10.30-12.00	**Invited Speaker 1**	**Invited Speaker 2**
	Prof. Yong Chan Seo	**Assoc. Prof. Muhammad Roil Bilad**
	Moderator: Prof. Agung Nugroho	
12.00-13.00	Ishoma	
13.00-14.30	**Invited Speaker 3**	**Invited Speaker 4**
	Prof. Azlan Kamari	**Prof. Kosuke Mizuno**
	Moderator: Prof. Sunardi	
14.30-14.45	Break	
14.45-16.00	**Invited Speaker 5**	**Invited Speaker 6**
	Prof. Dr. ner. nat. Dedi Rosadi, M.Sc.Eng. Math.	**Prof. Muthia Elma, M.Sc., Ph.D**
	Moderator: Prof. Yulian Firmana Arifin	
16.00-18.00	**Parallel Session**	
18.00-18.15	**Closing**	

PRESENTATION SCHEDULE
PARALLEL SESSION

PARALLEL SESSION ROOM 1 On-Site

Moderator: Wiwin Tyas Istikowati, S.Hut., M.Sc., Ph.D
Operator: Windari Amanawati

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	Compaction Parameters of a Chitosan-Bentonite-Sand Mixture	Nada Salsabila	1-01
2	16.07- 16.14	Effect of Water Acidity and Salinity on the CBR of Compacted Laterite	Khaidir	1-02
3	16.14 - 16.21	Renewable Waste Water with Filtration and Phytoremediation System by Using Water Hyacinth and Zeolith	Eko Suhartono	1-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Tensile Strength of Oil Palm Empty Fruit Bunch Fibers for Soil Stabilization: Number of Sheet Effects	Yulian Firmana Arifin	1-04
5	16.43 - 16.50	Synthesis and Characterization of Spent Bleaching Earth/Hdtma-Br Surfactant Composite as Sasirangan Liquid Waste Adsorbent Material	Rafshel Heikal Mahafani	1-05
6	16.50 - 16.57	Synthesis and Characterization of Carbon/Clay Composites from Spent Bleaching Earth	Risma Rahmawati	1-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	Characterization of Spent Mushroom Substrate Biochar	Annisa Maulidina	1-07
8	17.19 - 17.26	Carbon/Fe3s4 Nanocomposite from Sago Front Waste for Degradation of Methylene Blue Using the Fenton Reaction Method	Desmalina Safitri	1-08
9	17.26 - 17.33	The Utilization of Liquid Smoke and Ameliorant from Empty Palm Bunches on Soil Chemical Properties, Growth and Production of Hiyung Cayenne Pepper in Swamp Land	Gusti Rokhmaniyati Iskarlia	1-09
10	17.33 - 17.40	Effectiveness of Coagulation Methods and Adding Ferrofluite to Prevent Microplastic Contamination in Water	Indang Dewata	1-10
	17.40 - 17.55	**Q & A**		

PARALLEL SESSION ROOM 2 On-Site

Moderator: Dr. Amalia Rezeki, S.Pd., M.Pd
Operator: Yuliana

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	Strategy of Material Flow Analysis of UBC (Used Beverage Carton) Materials in East Jakarta City in Supporting Extended Producer Responsibility Program	Siti Annisa	2-01
2	16.07- 16.14	Neurotoxicity of Lead: a Mapping Analysis Using Open Knowledge Maps	Iskandar	2-02
3	16.14 - 16.21	Legal Protection of Harvest Failure Farmers as Customers of People's Business Credit (Kredit Usaha Rakyat / KUR)	Hidayatullah	2-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Strategy to Control Environmental Factors and Community Behavior Based on a Model of the Endemic Incident of Dengue Fever	Pardi Affandi	2-04
5	16.43 - 16.50	Identification of Potential Pollution from Liquid Waste of Micro, Small and Medium Enterprises (MSMEs) Poultry Slaughterhouses	Desi Nurandini	2-05
6	16.50 - 16.57	Inventory of Greenhouse Gas Emissions During 2023 from Market Solid Waste in Kendari City to Support Green City Development	Lies Indriyani	2-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	Optimization of Acid Mine Drainage Neutralization Process at Coal Mine Settling Pond	Agus Mirwan	2-07
8	17.19 - 17.26	Diversity of Decomposer and Factors Determining it in Wetlands Cultivated to Oil Palm	Abdul Hadi	2-08
9	17.26 - 17.33	Stingless Bees (*Heterotrigona itama*) Colony Characteristics and Nest Structure from Three Meliponiculture Practices in Banjar Regency	Anang Kadarsah	2-09
10	17.33 - 17.40	Macrobenthic Assemblages, Distribution and Functional Guilds Under Different Types of Land Use in The Upper Reaches of The Citarum River	Desty Pratiwi	2-10
	17.40 - 17.55	**Q & A**		

PARALLEL SESSION ROOM 3 On-site

Moderator: Dr. Hengki, S.S., M.Pd
Operator : Ali Mansyah

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	The Influence of the Non-Physical Work Environment on Work Spirit in South Kalimantan (Study Based on Gender, Sectors and Mix)	Akhid Yulianto	3-01
2	16.07- 16.14	The Estimated Impact of Carbon on Tax Implementation to Indonesian Economy	Syahrituah Siregar	3-02
3	16.14 - 16.21	Unlocking The Potential: Exploring the Relationship Between Juvenile Offenders and Family Communication Patterns for Sustainable Rehabilitation in Lembaga Pembinaan Khusus Anak Martapura, Kalimantan Selatan	Sri Mariati Soraidah	3-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Behavioral Finance in Investment Decisions : A Systematic Review	Redawati	3-04
5	16.43 - 16.50	Analysis of Factors that Influence Consumer Decisions in Using the Gojek Application with Go-Food Features in Banjarmasin City	Minarti Limantara	3-05
6	16.50 - 16.57	The Role of the Financial Decentralization Ecosystem in Exchange Transformation in the Digital Era	Saiful Ruchiyat Cosahan	3-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	The Influence of Banjar Cultural Environment on Leader Member Exchange and Organizational Citizenship Behavior (OCB) of Lecturer at PTS in Banjarmasin	Diana Hayati	3-07
8	17.19 - 17.26	The Application of Discarded Langsat Fruit Peel to Capture MetalComponents from Acid Mine Drainage	Lailan Ni`mah	3-08
9	17.26 - 17.33	Credit Growth Strategy to Support Environmental Sustainability by South Kalimantan Regional Development Bank with SWOT Approach: Conference Series	M. Aris Zulkarnain	3-09
10	17.33 - 17.40	Transformational Leadership, Organizational Citizenship Behaviors for the Environment and Environmental Performance	Dian Alfia Purwandari	3-10
	17.40 - 17.55	**Q & A**		

PARALLEL SESSION ROOM 4 On-site

Moderator: Prof. Dr. Deasy Arisanty, S.Si., M.Sc
Operator: Reza Maulani

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	New Increasing Built-Up Land and Environmental Carrying Capacity in Coastal Area : Evidence From Kendari, Indonesia	Abdillah Munawir	4-01
2	16.07- 16.14	The Model of Farmers Relation and Natural Relations In Sustainable Water Utilization Design (Case at Giri Mulya Village, Dry Land - Around Kerinci Seblat Nasional Park) Jambi Province-Indonesia	Rosyani	4-02
3	16.14 - 16.21	A Wetland-Based Village Waste Bank in Sekumpul, Martapura District, Banjar Regency	Syahrial Shaddiq	4-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Priority Model for Tourism Development in Pariaman City	Eri Barlian	4-04
5	16.43 - 16.50	The New Environmental Paradigm Based on Demography Characteristic of Dayak Paramasan Tribe	Dyah Febria Wardhani	4-05
6	16.50 - 16.57	Conservation Program and Identification of Local Orchids in Sabuhur Vilage	Wiwin Tyas Istikowati	4-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	Fishery in Swamp Land	Pahmi Ansyari	4-07
8	17.19 - 17.26	The Effect of Coal Mining Activities on Soil Surface Temperatures in Forested Areas	La Taati	4-08
9	17.26 - 17.33	Qualifying Urban Heat Islands: Advanced Techniques in Land Surface Temperature Analysis using Google Earth Engine	Munsyi	4-09
10	17.33 - 17.40	Food Preference and Proximate Analysis on Food of the Proboscis Monkey (*Nasalis larvatus*)	Anni Nurliani	4-10
	17.40 - 17.55	**Q & A**		

PARALLEL SESSION ROOM A Online

Moderator: Utami Irawati, S.Si., M.E.S., Ph.D
Operator: Multi Siskawati

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	Sustainable Membrane Based on Cellulose Acetate Waste and Cyrene for Microalgae Harvesting	Zubair Hashmi	A-01
2	16.07- 16.14	Performance of gelatin/carboxymethyl cellulose sugarcane bagasse biofilm for food packaging and preservation	Siti Rodhiyah Binti Sapie	A-02
3	16.14 - 16.21	Groundwater Management in Coastal Area of Batang Regency to Anticipate Sea Water Intrusion	Setyawan Purnama	A-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Effect of Triton X-100 volume towards stabilisation of bergamot essential oil nanoemulsion	Susana Wong Siew Tin	A-04
5	16.43 - 16.50	Disentangling Membrane Wetting, Compaction, and Fouling in Low-Pressure Filtration	Ibrahim Maina Idriss	A-05
6	16.50 - 16.57	Morphometric analysis based on multi-sources data and geographic information system in the Cirasea Watershed, Indonesia	Moh. Dede	A-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	Comprehensive evaluation of coal mine pit lake hydrological connectivity in South Kalimantan, Indonesia	Didik Triwibowo	A-07
8	17.19 - 17.26	Coal Mine Wastewater Management Using Settling Pond Infrastructure	Mohamad Nuhnaradita Saleh	A-08
9	17.26 - 17.33	Analysis Water Quality Status Based on Pollution Index Method of Krukut River	Ardina Hendriani	A-09
10	17.33 - 17.40	Preparation of Hybrid Polysulfone/TEOS Hollow Fiber Membrane by Weak In-situ Sol Gel Process to Enhance Hydrophilicity	Riani Ayu Lestari	A-10
	17.40 - 17.55	**Q & A**		

PARALLEL SESSION ROOM B Online

Moderator: Dr. Rizqi Puteri Mahyudin, S.Si., M.S
Operator : Sadzuli Rahman

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	Improvement of Hydrophilicity for Polymeric Membrane by Hybrid Organic-Inorganic Method for Water Separation: A Mini Review	Riani Ayu Lestari	B-01
2	16.07- 16.14	Economic Valuation and SROI of Reforestation and Restoration of Karyamekar Village Forest Area, Pasirwangi District, Garut Regency	Sarah Fitri Soerya	B-02
3	16.14 - 16.21	Environmental Conditions Support Ecosystem Services in Jatigede Reservoir, Indonesia	Andi Nurul Khasanah Bestari P. Iskandar	B-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Motility of Spermatozoa of Local Rooster (*Gallus domesticus*) on Lactate Ringer Thinner - Nira Palm (*Arenga pinnata* Merr)	Firdaus Hasibuan	B-04
5	16.43 - 16.50	River Pollution in Yogyakarta City	Setyawan Purnama	B-05
6	16.50 - 16.57	Comparison of Wetlands and Phytoremediation Methods as Treatment Media for Hospital Wastewater	Senki Desta Galuh	B-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	Antecedents and Consequences of the Employee Engagement in the Digital Era (A Review for General Gaps)	Hari Nugroho Akimas	B-07
8	17.19 - 17.26	Rainwater Harvesting Model as An Alternative in Providing Fresh Water Sources on Lancang Island	Asma Irma Setianingsih	B-08
9	17.26 - 17.33	The Impact of Mangrove Land-Use Conversion on Coastal Erosion (A Coastal Ecological Study of Jakarta and Muara Gembong)	Dea Syakilla Syafitri	B-09
10	17.33 - 17.40	Thermal Activation of Peat Clays and Their Potential as Catalytic Cracking Catalysts	Doni Rahmat Wicakso	B-10
	17.40 - 17.55	**Q & A**		

PARALLEL SESSION ROOM C Online

Moderator: Lailatul Kodriyah, S.Pd., M.Pd
Opeator : Devvi rachamatika

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	Community Responses to Senior Citizens and Intergenerational Relations in the Perspective of Civics Education	Yasnita	C-01
2	16.07- 16.14	Authority, Interpersonal Communication and Self-Control on the Performance of Principals of Bogor Regency State Middle Schools (Study of School Principal Performance)	Siti Hodijah	C-02
3	16.14 - 16.21	Analysis of Changes Land Cover in Balige sub-district, Toba District in 2014-2022	Ibrahim Amin	C-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Transformational Leadership in Developing Entrepreneurship Education Program in Islamic Boarding School	Nani Rahmah	C-04
5	16.43 - 16.50	The influence of non physical work environment and quality of work life on employee performance (Study at Puskesmas Banjarmain Indah)	Muhammad Ary Aprian Noor, Hastin Umi Anisah	C-05
6	16.50 - 16.57	Factors Associated with Narcotics Trafficking in Swamp Environment	Abdul Rahman	C-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	Economic and Environmental Viability of Purun Straws: A Cost-Benefit Analysis in Belitung District, Indonesia	Evans Azka Fajrianshah	C-07
8	17.19 - 17.26	Employee Performance Based on Leadership Style at PT Bank Kalteng	Vivi Pancasari Kusumawardani	C-08
9	17.26 - 17.33	Fisheries Law Enforcement as A Conservation Effort Environment	Akhmad Munawar	C-09
10	17.33 - 17.40	Evaluating Waste Management Policy in Kotabaru Slums (Regulation No. 6/2019)	Iswiyati Rahayu	C-10
	17.40 - 17.55	**Q & A**		

PARALLEL SESSION ROOM D Online

Moderator: Dr. Nopi Stiyati Prihatini
Operator : Rezeki Amelia

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	Correlation of Dayak Onion Bioactive Ingredients (*Eleutherine palmifolia* (L.) Merr) in the Extraction Process with Different Soaking Treatments	Achmad Jaelani	D-01
2	16.07- 16.14	Land Suitability Assessment for *Aleurites moluccana* (L.) Wild in Toba Regency, North Sumatra, Indonesia	Gopin Sahputra Pasaribu	D-02
3	16.14 - 16.21	Serious flooding in Pekalongan City: What are the government policies in tackling this problem?	Hartuti Purnaweni	D-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Analysis of Local breed Chicken Collectors' Income in Anjir Pasar Barito Kuala District	Sugiarti	D-04
5	16.43 - 16.50	Enhancing Understanding of Goat Feed Production from Fermented Rice Straw: A Ground Truth Approach to Mitigate El Nino's Impact on Livestock Nutrition	Yonathan	D-05
6	16.50 - 16.57	Utilization of Gold Nanoparticles (AuNPs) for Al3+ Detection in Natural Water	Meiyanti Ratna Kumalasari	D-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	The Influence of Green Chemistry Activities on Students' Sustainable Awareness in Redox and Colloid Materials	Sri Yanti	D-07
8	17.19 - 17.26	Evaluation of Teratogenic Effects of Organophosphate Pesticides: In Silico and In Ovo Study	Noer Komari	D-08
9	17.26 - 17.33	Dynamics of Carbon and Nitrogen Content in Cover Crop Plants in Cow Palm Integration Land Areas	Maulana Efendi	D-09
10	17.33 - 17.40	The Characterization of the Chemical Properties of Biochar from Corn Cobs, Rice Husks, and Oil Palm Fronds: Potential of Agricultural Waste as a Soil and Environmental Improver	Budiono	D-10
	17.40 - 17.55	**Q & A**		

PARALLEL SESSION ROOM E Online

Moderator: Antoni Pardede, S.Si., M.Si., Ph.D
Operator: Muhammad Shabirin Mukhlis

No.	Waktu	Judul	Presenter	Kode Peserta
1	16.00 - 16.07	Strategy for Implementing Clean Production (Produksi Bersih) at the Palm Palm Factory PT. SPA	Teguh Sugeng Rahayu Widodo	E-01
2	16.07- 16.14	Green Chemistry Activities in School Level Chemistry Learning-Systematic Literature Review in the Last 10 Years	Sri Yanti	E-02
3	16.14 - 16.21	Environmental Analysis to Support Sustainable Ecotourism in Pulisan Bay	Natasha Kania Idris	E-03
	16.21 - 16.36	**Q & A**		
4	16.36 - 16.43	Creative Industry Models for Golden Generation Through Environmentally Friendly Entrepreneurship Skills	Asep Ediana Latip	E-04
5	16.43 - 16.50	Legal Protection of Farmers Affected by Agricultural Land Conversion into Housing	Muhammad Fadhan Adhani	E-05
6	16.50 - 16.57	Potential Development of Oil Palm-Cattle Integration System Program "SISKA KU INTIP" in South Kalimantan	Arini Indah Susilowati	E-06
	16.57 - 17.12	**Q & A**		
7	17.12 - 17.19	The influence of service quality on inpatient satisfaction at Bhayangkara Hospital Palangkaraya	Ani Purwaningsih	E-07
8	17.19 - 17.26	Financial experience of cryptocurrency investment decisions through overconfidence: Evidence from millennials in Banjarmasin	Bustani	E-08
9	17.26 - 17.33	Analysis Need Empowerment Generation Young Care Environment	Norhasanah	E-09
10	17.33 - 17.40	Bibliometric Analysis of Mapping Trend Ecopedagogy Research in Education	Shahibah Yuliani	E-10
	17.40 - 17.55	**Q & A**		

ABSTRACTS
INVITED SPEAKER

Growth and Heavy Metals Uptake in Tomato Cultivated on Mine Tailings Amended with Fruit Wastes Biochars

Azlan Kamari[1,a)], Siew Tin Susana Wong [1,b)], Siti Rodhiyah Sapie[1,c)], Norjan Yusof[2,d)], Sunardi[3,e)] and Wiwin Tyas Istikowati[4,f)]

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Abstract. Soil pollution caused by toxic metals is a worldwide environmental issue. According to Food and Agriculture Organization of the United Nations (FAO), soil pollution poses a serious threat to human health through direct contact such as dermal exposure, inhalation of polluted soil particles and intentional ingestion of polluted soil. Meanwhile, human might get infected through indirect contact by consuming plants or animals that have accumulated significant amounts of soil contaminants. Despite a number of remediation techniques are available to solve soil pollution issue, the operating cost will always be the primary point of consideration. In recent years, application of biochar as soil amendment has received great attention from environmental scientists mainly because this strategy offers an eco-friendly and cost effective alternative to conventional soil remediation methods. In this study, biochars derived from banana and cassava peel wastes was applied as amendments at four rates of treatment namely 0%, 1%, 2% and 3% (w/w) in mine tailings meanwhile tomato plant (*Solanum lycopersicum*) was employed as a response organism in pot experiment. Both fruit wastes biochars has successfully increased biomass yield and reduced heavy metals uptake by tomato plant. A pronounced effect was achieved for 3% (w/w) amendment treatment, of which the tomato yield increased by 75% while the accumulation of Pb, Cu and Zn in tomato decreased by 70%. In addition to concentration of heavy metals in plant tissue, the bioconcentration factor (BCF) and translocation factor (TF) values were calculated and in the order of Zn > Cu > Pb. The bioavailable (ammonium acetate) fraction of heavy metals in mine tailings decreased significantly ($p < 0.05$) following biochars amendment treatment. Overall, results from this study confirm the efficacy of using banana and cassava peel wastes biochars as alternative amendments to decrease the bioavailability and toxicity of Pb, Cu and Zn in both soils and food matrices. These research findings support Sustainable Development Goal (SDG) 2 and 3, which aim for Zero Hunger and Good Health and Well-being.

Keywords: Soil pollution; Soil amendment; Biochar; Mine Tailings; Metal uptake.

Innovative Approaches in Developing Sustainable Processes Based on Porous Thin Membrane Material

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Abstract - Membrane materials have long been used in process separation, particularly in water purification. Membrane-based processes for water purification have become increasingly dominant recently due to many advantages, namely minimum use of chemical and secondary pollutants, operation at room temperature/pressure, low energy input, modular system, etc. Nonetheless, some new applications of membrane materials have been explored in many other sustainable processes. This presentation will discuss the approaches in utilizing a porous and thin membrane material for different purposes, notably in supporting the United Nations Sustainable Development Goals for improving affordable clean energy (SGD 7) and clean water and sanitation (SDG 6). It includes membrane bioreactors, membrane distillation, forward osmosis, membrane diffuser, and other membrane-based process integration.

Keywords: Membrane; process intensification; sustainable development goal; membrane bioreactor

Improvement the Prediction of Peatlands Fire Occurrence using SMOTE and its various extensions

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Abstract. In our previous studies, the prediction of the peatlands fire occurrence was modeled using various machine learning classification approaches. It is found that using South Kalimantan Province data, in the empirical study, we previously found that the datasets of the occurrence and the nonoccurrence of fire hotspots areas are unbalanced. In the study presented in this paper, to improve the classification performance, we consider the oversampling approaches, namely SMOTE methods and provide the reviews of its extensions and provide their applications for prediction of peatlands fire occurrence. Using the considered empirical data, we found that the oversampling methods did not always gives improvement in the classification results.

Keywords: peat lands fire occurrence, unbalanced data, SMOTE and the extensions

Membrane Technology Applied for Peat Water and Wetland Saline Water

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Membrane technology in overcoming the problem of poor water quality. It has also become an interesting topic in the environmental issues in this modern era. Membranes have been applied for wetland water treatment which has high number of NOM (natural organic matter). In particular, wetland aquifer bodies is also facing sea water intrusion during hot season and bring out the water become saline. Then, hollow fiber (HF), tubular inorganic, flat disk, flat sheet is configuration of membranes technology which compatible to treat NOM content in the water. Each membrane types have advantages and disadvantages for peat and wetland saline water treatment. HF and flat sheet membrane prepared from polymer-based offering low-cost material for commercial application. While inorganic based membranes are claiming more robust and high selectivity. Here, the performance of the membranes such as permeability and selectivity in treated water is calculated. This discussion was providing an overview of the membrane's technology development applied for treating of peat water and wetland saline water. Operation condition which is influencing of membrane performance has been described. Moreover, separation mechanism of membrane technology and fouling control. Also, clarified in this summary and future prospect of membrane technology are described and conclusions drawn.

ABSTRACTS
ORAL PRESENTATION

ENVIRONMENTAL HEALTH, ENGINEERING, AND GREEN TECHNOLOGY

[1]

Creative Industry Models For Golden Generation Through Environmentally Friendly Entrepreneurship Skills

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Abstract. This model will be produced in order to improve the Quality of Life of the younger generation as the golden generation in supporting the achievement of the SDGs. The contribution of these findings is an effort to achieve the target of the Sustainable Development Goals (SDGs). Green Economy Growth efficiency this supports the Environmental Policy. The output that will be produced is one of the solutions to the problem of lack of encouragement from family and society to strengthen the interest of the younger generation to be able to improve entrepreneurial skills in the creative industries, even though schools have been encouraged to be able to strengthen the spirit of independence, and in universities the entrepreneurial program has begun . Demographic bonus challenges and the industrial revolution era 4.0, as well as the Society 5.0 era, the young generation as the millennial generation needs to awaken independence to be able to produce various innovations so that they can become young entrepreneurs, for this reason this research will be carried out by producing creative industry models for the golden generation through entrepreneurial skills environmentally friendly; the Twin Treck Theory model (Gender Mainstreaming and Affirmative Action), but this year the focus is on aspects of mapping the potential profile of the younger generation in developing entrepreneurial skills in the creative industries. This research will be conducted using the R & D method, with the stages of this first year as research to develop a model of entrepreneurship skills. Based on the results of previous research, it showed that the potential for developing young student entrepreneurs was still low, 17.6 of the respondents felt they were an important part of efforts to improve young entrepreneurial skills. They adapt and transform. Based on the data, the potential for developing young student entrepreneurs is still low in adapting to family economic conditions in the Covid-19 pandemic era. This is valuable capital to continue to be coached by supervisors so that they collaborate with the Business World and the Industrial World to be able to enter the job market when they have completed their studies. They actually take the initiative and innovate to do self-employment.

Keywordss : Creative Industry Models, Golden Generation, Enterpreneuship Skills, and Environmentally Friendly.

[2]

The Application of Discarded Langsat Fruit Peel to Capture Metal Components from Acid Mine Drainage

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Abstract.. The study aimed to explore the practicality of utilizing agricultural waste, specifically langsat fruit peel (Lansium domesticum cortex), as an economical sorbent, namely activated carbon, for the removal of copper (Cu) and manganese (Mn) from acid mine drainage. Additionally, it sought to assess the adsorption behavior through isothermal modeling. Activated carbon was produced from langsat fruit peel through chemical activation using 20% H_3PO_4 and 20% NH4OH. Prior to activation, the langsat fruit peel underwent charring at 300°C for 2 hours to yield carbon. The SEM-EDX analysis revealed a significant carbon content of 78.62% when H_3PO_4 was employed for activation, and this process resulted in larger and cleaner pore structures compared to NH_4OH activation. The activated carbon derived from langsat peel waste exhibited a BET surface area of 1.4456 m2/g, with a BJH adsorption cumulative volume of 0.000701 cm^3/g for its pores. The BJH adsorption average pore diameter (4V/A) indicated a mesoporous scale size, measuring at 31.31399 nm. In terms of its efficacy in adsorbing metals from acid mine drainage, the most favorable results were observed when using 4 grams of activated carbon, achieving a removal rate of 91.42% for Mn and 15.74% for Cu. To model the adsorption process, both Langmuir and Freundlich isotherm equations were applied. The data analysis revealed that the Langmuir model closely matched the isotherm curve, suggesting monolayer adsorption. Furthermore, the linear regression coefficient for the Langmuir model approached 1, indicating a strong fit to the data.

Keywords : Acid Mine Drainage, Activated Carbon, Process Of Adsorption, Use Of Langsat Fruit Peel, Presence of Metal Substances.

[3]

The Characterization of The Chemical Properties of Biochar from Corn Cobs, Rice Husks, And Oil Palm Fronds: Potential of Agricultural Waste as A Soil and Environmental Improver

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Abstract.. The study aimed to explore the practicality of utilizing agricultural waste, specifically langsat fruit peel (Lansium domesticum cortex), as an economical sorbent, namely activated carbon, for the removal of copper (Cu) and manganese (Mn) from acid mine drainage. Additionally, it sought to assess the adsorption behavior through isothermal modeling. Activated carbon was produced from langsat fruit peel through chemical activation using 20% H_3PO_4 and 20% NH4OH. Prior to activation, the langsat fruit peel underwent charring at 300°C for 2 hours to yield carbon. The SEM-EDX analysis revealed a significant carbon content of 78.62% when H_3PO_4 was employed for activation, and this process resulted in larger and cleaner pore structures compared to NH_4OH activation. The activated carbon derived from langsat peel waste exhibited a BET surface area of 1.4456 m2/g, with a BJH adsorption cumulative volume of 0.000701 cm^3/g for its pores. The BJH adsorption average pore diameter (4V/A) indicated a mesoporous scale size, measuring at 31.31399 nm. In terms of its efficacy in adsorbing metals from acid mine drainage, the most Characterization of physiochemical properties is a basic concept for biochar production which is influenced by pyrolysis temperature and raw materials because it can provide detailed information so that its application as a soil amendment can be adjusted to the type of soil. This research aims to assess the potential of organic materials based on the chemical properties of biochar from corn cobs, rice husks and palm fronds resulting from 200-4000C pyrolysis. Characteristics of chemical properties based on chemical components (pH, CEC, C-organic) and proximate (moisture, mass loss, ash content, volatile substances, fixed carbon). The characterization results show that the three types of biochar are alkaline (medium to high alkaline pH) and the CEC is classified as very high. Biochar from corn cobs contains the highest organic C and fixed carbon, 70.2% and 73.42% respectively. Biochar from rice husks experienced the highest mass loss of 69.83%, but produced the highest volatile substances of 27.74%. Meanwhile, biochar from oil palm fronds has the highest moisture and ash content, respectively 6.37% and 15.41%. The results of this research show that biochar from corn cobs is better than biochar from rice husks and oil palm fronds. All three can be used as soil amendments and environmental improvements.

Keywords: Biochar, corn cobs rice husks, oil palm fronds

[4]

The Effect of Coal Mining Activities on Soil Surface Temperatures in Forested Areas

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Abstract. Coal mines often leave an ecological footprint that can damage the environment. One impact that is often overlooked but has long-term consequences is changes in ground surface temperature, especially in forested areas adjacent to mining sites. This research focuses on an in-depth analysis of how the land surface temperature in forested areas around coal mines. Forested areas were chosen as the focus of the study because forests have a crucial role in maintaining climate and ecosystem balance. The analysis method used is Normalized Difference Vegetation Index (NDVI) and Land Surface Temperature (LST) with data sourced from LANDSAT-8 satellite imagery. The results of measurements in forested areas adjacent to coal mines showed that ground surface temperatures reached the range of 30.0-36.0°C. This figure is higher when compared to ground surface temperatures in natural forested areas that are not affected by mining activities, which range between 27.5-31.0°C. This significant temperature difference shows the direct influence of mining activities on the thermal conditions of the soil in the forested area around the coal mining area. Increasing ground surface temperatures in forested areas near coal mines can reduce soil moisture and affect vegetation growth

Keywords: Coal Mines; Environmental Damage; NDVI; Climate Balance

[5]

Qualifying Urban Heat Islands: Advanced Techniques in Land Surface Temperature Analysis using Google Earth Engine

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Abstract. Urban Heat Island (UHI) represent a significant challenge in contemporary urban environments, characterized by elevated temperatures within cities and their surrounding areas. Understanding and effectively addressing UHI effects are crucial for sustainable urban development and climate resilience. This paper explores advanced techniques in Land Surface Temperature (LST) analysis, leveraging the capabilities of Google Earth Engine, to qualify and quantify UHI dynamics. The research use the Google Earth Engine as a powerful tool for large-scale environmental monitoring and analysis. It investigates innovative approaches, including the integration of remote sensing data, and geospatial analytics. These advanced techniques enable the precise identification and quantification of complex LST patterns and trends within urban settings. The paper addresses critical topics such as satellite imagery and thermal sensor data acquisition using Google Earth Engine, the development of spatiotemporal models for UHI mapping, and comprehensive assessments of UHI impacts on urban ecosystems and public health. It presents research findings and real-world applications of advanced LST analysis techniques within the Google Earth Engine framework, offering insights into tackling UHI-related challenges. It aims to provide sustainable solutions for mitigating UHI effects and building climate-resilient cities.

Keywords : UHI, LST, Google Earth Engine, Remote Sensing Data, Geospatial analytics.

[6]

Preparation of Hybrid Polysulfone/TEOS Hollow Fiber Membrane by Weak In-situ Sol Gel Process to Enhance Hydrophilicity

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Abstract. Fouling tendency arising from hydrophobic polysulfone limits membrane performance in water and wastewater treatment. In order to enhance the performance of membranes, a hydrophilic polysulfone/TEOS hollow fiber membrane was prepared via weak in-situ sol-gel and wet spinning method. Silica generating by tetraethoxysilane (TEOS) affects the formation of a new matrix in polysulfone membrane. Hybridization of silica into the polysulfone matrix has a major influence in increasing the hydrophilic properties of membrane and flux. In this work, synthesizing of polysulfone hollow fiber membrane started by mixing polysulfone, PEG and DMAc solvent at 80ºC during 3 hours until reach homogenous dope solution. Then, TEOS with several variants is added and mixed until homogeneous. Well-mixed dope solution was poured into syringe for wet spinning process in water coagulant and followed by immersion in ethanol. The surface hydrophilicity of the membranes gradually increases due to the inclusion of silica with the addition 2, 5 and 10 %-b of TEOS. The water contact angle decreases until 50º for percentage of highest silica and lowest PEG. Meanwhile, existence of hydrophilic group of Si-O and Si-O-Si in membrane matrix analyzed by ATR-FTIR shows higher anti-fouling ability. In addition, TEOS has good ability for dope solidification during spinning process.

Keywords: polysulfone, hollow fiber membrane, sol-gel, silica

[7]

Strategy to Control Environmental Factors and Community Behavior Based on A Model of the Endemic Incident of Dengue Fever

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Abstract. Dengue Hemorrhagic Fever (DHF) is an infection caused by the dengue virus, an infectious disease that is endemic in 34 provinces of Indonesia, amounting to 71,668 people, and 641 of them died. Based on data from the 2022 Kalimantan Province Health Profile, this disease is related to physical environmental conditions. and community behavior. The Head of the South Kalimantan Health Service reported that as many as 764 people in South Kalimantan province were affected by dengue hemorrhagic fever (DBD) from January to the end of 2022. Banjar Regency was the area with the highest number of DHF cases in South Kalimantan with 228 cases, followed by Banjabaru city with 140 cases. and Kotabaru district with 139 cases. From 1 January to 7 February 2023, there have been 43 cases of dengue fever in Banjar Regency, one of the areas classified as endemic is Pematang Panjang village. This data was obtained based on reports at several community health centers in Banjar Regency. Cases Most attacks transmitted through the bite of the Aedes aegypti mosquito were found at the Gambut Community Health Center and Martapura I Community Health Center. This condition was exacerbated by standing water after the flood receded, which had the potential to become a nest for mosquitoes to lay their eggs. Even though no dengue fever patients have died in 2023, the Head of the Banjar District Health Office, Yasna Khairina, through the Head of the Infectious Disease Prevention and Handling (P2M) Section, Mariana, said that this disease is caused by viral infection through the bite of infected mosquitoes which often occurs in rural areas. and urban. The aim of this research is to determine the dominant and most influential factors among people's behavioral factors in cleaning bathtubs, habits of hanging clothes, using mosquito nets, healthy food, regular drinking and environmental factors (air temperature, humidity, rainfall, water temperature, pH water, COD (Chemical Oxygen Demand), BOD (Biological Oxygen Demand)) on the incidence of dengue fever. So that from these influencing factors a model of dengue fever can be formed. This model will be used to determine appropriate control strategies in the Martapura Regency area, especially in Pematang Panjang village. This research was carried out using a sampling technique design method, primary data for community behavior was obtained by distributing questionnaires, while to find out environmental factors that influence dengue fever, it was done by measuring and collecting water sample data. The distribution of questionnaires and sampling of primary data is carried out in accordance with the sample size that will be used as the actual data source by paying attention to the nature and distribution of the population so that the sample obtained can represent the population and is representative with the sample size for this study calculated by the sample size formula (Kasjono and Kristiawan (2008). Water samples were measured for pH and water temperature, then laboratory tests were carried out to determine the COD, BOD and heavy metal content of the water samples taken, air temperature and air humidity were also measured using standard measuring instruments. Next, the data input process continued with testing. multiple regression according to the data obtained. From the regression results, the most influential factors are obtained which are then used in building the model. The results of the dengue disease model can be carried out in simulations which are used for predictions, as well as determining appropriate control strategies by considering important aspects in the field so that the results The results obtained can improve appropriate prevention methods for BDB disease. The proposed activity plan is in line with the formulation of ULM's superior research which can support ULM's superior research fields, especially in the field of application of science in improving health levels

Keywords: Dengue hemorrhagic fever, environmental factors, physical factors, chemical factors.

[8]

Utilization of Gold Nanoparticles (AuNPs) for Al^{3+} Detection in Natural Water

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Abstract. Indonesians extensively utilize natural water sources, including rivers and groundwater, for their routine activities. Continuous consumption of natural water contaminated with Al^{3+} can indirectly damage the nervous system. Hence, the detection of Al^{3+} is vital in order to enhance the quality of life of the community and effectively manage environmental pollution. A simple yet efficient method for the identification of Al^{3+} ions involves the utilization of nanoparticles. Gold nanoparticles (AuNPs) have been employed as a detection agent for Al^{3+} in aqueous environments. The analytical methodology was evaluated to determine the performance of gold nanoparticles (AuNPs) in detecting the presence of aluminium ions (Al^{3+}). The characterization of the sample was conducted by the use of various analytical techniques, including UV/Vis spectrophotometry, FTIR spectrophotometry, scanning electron microscopy with energy-dispersive X-ray spectroscopy (SEM-EDS), particle size analysis (PSA), transmission electron microscopy (TEM), and zeta potential measurement. The measurements of AuNP exhibited a high degree of linearity, with a correlation value of 0.9992, within the concentration range of 5×10^{-5} to 2×10^{-4} M. The detection limit was determined to be 3.54×10^{-5} M, while the quantitation limit was found to be 1.18×10^{-4} M. Additionally, the coefficient of variance was calculated to be 1.29%. The approach was applied to measure the concentration of Al^{3+} in groundwater and river samples, yielding comparable outcomes to those obtained using ICP-AES analysis with a confidence level of 99%.

[9]

Improvement of Hydrophilicity for Polymeric Membrane by Hybrid Organic-Inorganic Method for Water Separation*: A Mini Review*

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Abstract. Membrane formed by combining organic and inorganic materials are able to produce strong and promising hybrid membranes because of the diverse, but complementary properties inherent in each material. The complementarity leads to the perfect synergy of hybrid membranes to improve separation performance and wide application area coverage. This review provides a brief summary and discussion about improvement of hydrophilicity for polymeric membrane in water treatment application, wherein organic material modified by inorganic constituents. Inorganic constituent often in the form of particles or small structures in minerals, clay, alkoxide, carbon and ceramics. Numerous methods, both chemical or physical modification to increase membrane hydrophilicity. This organic-inorganic hybrid method has proven capable of being incorporated into a polymer matrix to form hydrophilic chains. Thus, the existence of chains reduces interfacial tension with water to obtain higher water flux. The effects of hybrid organic-inorganic on membrane hydrophilicity as well as antifouling are discussed.

Keywords: organic-inorganic hybrid, hydrophilic, polymeric membrane, water separation

[10]

Comparison of Wetlands and Phytoremediation Methods as Treatment Media for Hospital Wastewater

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Abstract. Everyday, RSU Jember Klinic produces wastewater that originates from various healthcare service activities. This wastewater is one of the sources of water pollution that can cause diseases to the surrounding community. This is because most of the hospital wastewater may contain harmful chemical compounds if inhaled or consumed. Therefore, this research aims to analyze the condition of hospital wastewater treatment at RSU Jember Klinic using the wastewater treatment methods of wetlands and phytoremediation to assess how well papyrus plants can minimize the wastewater content. In the study conducted using wetlands and phytoremediation methods, three treatment time variables were applied, which were 1, 2, and 3 days. The initial values of the parameters TSS (Total Suspended Solids), BOD (Biochemical Oxygen Demand), and COD (Chemical Oxygen Demand) before testing were 102 Mg/L, 104 Mg/L, and 184 Mg/L, respectively. In the study using the wetlands method, during the 3-day process, there was a reduction in TSS, BOD, and COD to 0 Mg/L, 25 Mg/L, and 32 Mg/L, respectively. On the other hand, using the phytoremediation method, the reduction in TSS, BOD, and COD was to 9 Mg/L, 28 Mg/L, and 43 Mg/L, respectively. Based on the results of the wetlands and phytoremediation treatment processes above, it can be concluded that the wetlands method is more effective in treating wastewater compared to the phytoremediation method.

Keywords: *Cyperus papyrus*, wetlands, phytoremediation, waste water.

[11]

Characterization of Spent Mushroom Substrate Biochar

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Abstract. Cultivation of white oyster mushrooms produces waste in the form of oyster mushroom medium (substrate) waste. For every kg of mushroom produced, approximately 5 kg of spent mushroom substrate (SMS) waste is generated and most of them have been discarded inappropriately, causing environmental pollution such as poor environmental sanitation because it produces odors. White oyster mushroom baglog waste has potential as a biochar raw material because it has a high organic content, namely N (0.8%), P (0.8%), K (0.16%), and organic C (52, 0%). This research aims to convert oyster mushroom waste into biochar through a pyrolysis process at a temperature of 400°C; 500°C and 600°C for 2 hours. Based on FTIR spectra data, the research results show that differences in pyrolysis temperature affect the characteristics of the biochar produced.

Keywords: spent mushroom substrate, biochar, FTIR

[12]

Carbon/Fe_3S_4 Nanocomposite from Sago Front Waste for Degradation of Methylene Blue Using the Fenton Reaction Method

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Abstract: Sago fronds are one of the main food sources for the Indonesian people, especially Kalimantan, Sulawesi, Maluku, and Papua. Sago fronds have lignocellulose with a composition of 41.43% cellulose, 40.63% lignin, and 15.18% hemicellulose. Sago frond waste which has not been widely used by the public can be converted into biochar through pyrolysis and hydrothermal processes. This research aims to synthesize sago frond waste into Fe_3S_4@sago fronds carbon nanocomposites using the hydrothermal method at a temperature of 200°C with time variations of 2, 4, and 6 hours. Based on the results of FTIR characterization, shows that structural changes occur before and after synthesis, which indicates changes in the characteristics and properties of the material.

Keywords: sago fronds, hydrothermal, Fe_3S_4@sago fronds

[13]

Effect of Water Acidity and Salinity on the CBR of Compacted Laterite

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Abstract. Water in the soil compaction functions as a wetting and lubricating element. The salinity and pH of water affect soil behavior, especially clay soil. Field conditions sometimes result in water near the construction being used for mixing and compaction. So river water with different pH and salinity is sometimes used. The ebb and flow of water also cause the compacted soil to be submerged in different water conditions. This research aims to analyze the influence of river water (pH < 7) and sea water on the properties of laterite soil. Laterite soil with a clay content was taken from Bungur District, Tapin Regency. Meanwhile, the water used is taken from several places with different acid and salinity conditions. The soil was compacted using standard and modified Proctor procedures. Other tests are the Atterberg limit and the California Bearing Ratio (CBR). The results of the research show that water has an influence on soil properties. The liquid limit and plastic limit decreased due to the influence of river water (pH < 7) and sea water. The maximum dry density increased due to the influence of sea water, and the optimum water content decreased. However, the immersion CBR value experienced a significant decrease.

Keywords: laterite soil, salinity, pH < 7, CBR

[14]

Compaction Parameters of a Chitosan-Bentonite-Sand Mixture

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Abstract. The water content and energy applied during the compaction process affect the behavior of soils, particularly those containing clay. This also includes material mixtures such as polymer-enhanced bentonite-sand mixtures. The aim of this research is to carry out compaction tests and obtain parameters for the chitosan-bentonite-sand mixture material. The materials used are chitosan polymer, bentonite, and sand. The type of bentonite is calcium bentonite. Sand was taken from the Barito River, which is a common material used in construction and is available in large quantities. The two materials, chitosan and bentonite, are chemically mixed first, with a composition of 2% and 98% on a weight basis, respectively. This mixture was then added to sand with a composition of 10% chitosan-bentonite and 90% sand. Standard and modified Proctor compaction tests were applied to the samples. The results showed that each compaction parameter had a maximum dry density and optimum water content for each compaction energy. It can be seen that the dry density modified Proctor value is higher than the standard one. Meanwhile, the optimum water content obtained from the modified Proctor is smaller than the standard one. These data can be used as a basis for implementation in the field to obtain a value of 90% maximum dry density.

Keywords: compaction, chitosan, polymer, bentonite, dry density

[15]

Synthesis and Characterization of Spent Bleaching Earth/Hdtma-Br Surfactant Composite as Sasirangan Liquid Waste Adsorbent Material

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Abstract. Spent Bleaching Earth (SBE) is a waste produced by refinery factories that process crude palm oil (CPO). Spent bleaching earth has characteristics such as sand containing color, gum/sap, metals like Silica (47-52%), Aluminum Oxide (10.6-11.9%), Ferrioxide (4-4.5%), Magnesium (3.2-3.6%), other metals and water (5.4-6%) and palm oil residue (22-30%). This research aims to synthesize composites from Spent Bleaching Earth with the addition of HDTMA-Br surfactant. Synthesis was carried out at temperature 60ºC for 24 hours. The research results show that the addition of HDTMA-Br can improve the composite characteristics of the SBE carbon produced compared to SBE carbon without the addition of HDTMA-Br surfactant based on the difference in absorption peak intensity in FTIR.

Keywords: *Spent bleaching earth*, HDTMA-Br, composite, synthesis.

[16]

Synthesis and Characterization of Carbon/Clay Composites from Spent Bleaching Earth

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Abstract. Spent Bleaching Earth (SBE) is one of the largest wastes produced from the crude palm oil (CPO) refining industry. SBE can be converted into carbon for various purpose. Modification of SBE into magnetic carbon/clay composites can improve its performance. Modification SBE into magnetic carbon/clay composites can improve the pore structure and surface of the material. This research aims to synthesize magnetic carbon/clay composites from SBE using the co-prepitation method. Based on magnetic tests, the results show that the magnetic composites has been formed. FTIR sepctra also show changes in intensity before and after modification, which is indicates changes in material characteristic.

Keywords: spent bleaching earth, modification, magnetic, synthesis

[17]

Strategy of Material Flow Analysis of UBC (Used Beverage Carton) Materials in East Jakarta City in Supporting Extended Producer Responsibility Program

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Abstract. Practical and efficient are words that are favoured by people today. The ease of getting what they want is one of the choices for the community in consuming food or beverage products that are easily found in various shopping places, starting from stalls to supermarkets. According to data from the Ministry of Environment, packaging waste and single-use waste entered the TPA (Final Processing Site of Waste), amounting to 6.7% of total waste or around 2,218,589.60 tons/year in 2021. One of them is drink box made from UBC (Used Beverage Carton). Drink box made by UBC is drink boxes with single-use materials. This type of UBC has a paper layer on the outside and is made of aluminium inside; with these two different layers, processing the product after use is a challenge. In addition to the processing stage, challenges start from the sorting stage, collection to transportation. Currently, the waste dealers or waste banks do not accept this type of waste material because it has no selling value, and there is no place for processing. So that the waste with UBC material ends up in the landfill. As stated in the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number P.75/Menlhk/Setjen/Kum.1/10/2019 regarding the Roadmap for Waste Reduction by Producers, this regulation regulates waste management that must be carried out by business actors, one of them is the producer of food and drink. To make this improvement, it is necessary to evaluate the Material Flow Analysis (MFA) as one of the answers to the challenges of improving the recycling system of this UBC material.

Keywords : Waste, Used Beverage Carton, Extended Producer Responsibility, Jakarta

[18]

Tensile Strength of Oil Palm Empty Fruit Bunch Fibers for Soil Stabilization: Number of Sheet Effects

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Abstract. The tensile strength of oil palm empty fruit bunch (OPEFB) fibers has been widely studied. Fibers can sometimes function as a single element in composites. However, there are also applications for multiple strands of rope. This research focuses on testing the tensile strength of OPEFB fibers. The fiber was taken from one of the palm oil factories in Angsana District, Tanah Bumbu. There were two fiber conditions tested, namely untreated fiber and treated fiber with an alkaline solution. The fibers were separated from the bunches, air dried, and then soaked in a 1 N NaOH solution for 90 minutes. Once dry, the fibers were tested using a specially designed equipment. Several strands of fiber, from 1 to 4, are tensile strength tested. The results show that the average tensile strength of fibers without treatment and with treatment is 104 MPa at a strain of 9.34% and 288 MPa at a strain of 12.06%, respectively. The tensile strength of several strands of fiber is not the sum of the tensile strengths of one fiber but is smaller. The tensile strength of fibers with treatment is higher and more durable than those without treatment.

Keywords: fiber, palm oil, soil stabilization, alkali treatment.

[19]

New Increasing Built-Up Land and Environmental Carrying Capacity in Coastal Area : Evidence From Kendari, Indonesia

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Abstract. The development of the kendari bay coastal area is one of the opportunities and threats as well as a dilemma, on the one hand it can support the economy and regional development on the other hand can be the cause of environmental degradation of coastal areas. This study aims to analyze the matric dynamics of land change by interpreting satellite images of three series of Landsat data recording in 2012, 2017, 2022 and analyze the index of land use conversion dynamics of the kendari bay coastal area. The results of the land use analysis in 2012-2017 the area of built-up land areas tends to increase by 1.9%, in 2017 to 2022 with a period of five years, the change in built-up land areas is quite significant to 6.9%, these changes are strongly influenced by anthropogenic factors such as logging of forest trees and mangroves, conversion of forest functions and mangroves into built-up land and other land uses. Based on the increase in land conversion, the condition of environmental carrying capacity is a serious concern in the Kendari Bay coastal area so that it is not exceeded to avoid disasters, landslides and marine pollution. For this reason, the increasing dynamics of conversion of other land changes into built-up land poses a serious threat to the degradation of the Kendari Bay coastal area which has a direct impact on the decline in environmental carrying capacity.

Keywords : Environmental degradation, Kendari bay, landuse change, built-up

[20]

Optimization of Acid Mine Drainage Neutralization Process at Coal Mine Settling Pond

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Abstract. The acid mine drainage neutralization process is a method widely used in the mining industry that involves adding a neutralizing agent to the settling pond. This method uses a mixing system to create sediment at the bottom of the pond. This study aims to characterize settling pond sludge and to optimize the neutralization process of acid mine drainage through different dosages of lime neutralizers and residence times. This research method uses PHREEQC modeling calculations with different neutralization process options. The research phases began with observing and taking samples of acid mine water, limestone and sludge, and collecting actual data on outlet pH and actual doses of neutralizing agents. The neutralization process will be optimized to increase the effectiveness and efficiency of the acidic mine water treatment plant in the settling's ponds. The results of research and modeling show that the neutralization process is influenced by the quality of the neutralizing agent, the number of doses, the saturation or precipitation index limit, the dissolution process of the neutralizing agent, the time of the neutralizing dose and the timing of the neutralizing process. Based on PHREEQC models and theoretical calculations, the acid mine drainage neutralization process optimization results provide several recommendations, namely the time interval for the neutralizer to be every 13.6 minutes before it is every 60 minutes with a continuous attachment mechanism and a maximum dose of limestone of 0.22 g/L to avoid supersaturation events and the use of a limestone dissolution mechanism prior to performing the injection process to reduce the need for a 216 second dwell time.

Keywords: Acid Mine Water, Jar Test, PHREEQC, Settling Pond.

[21]

Analysis Water Quality Status Based on Pollution Index Method of Krukut River

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Abstract. Krukut River is one of the raw sources of drinking water for the DKI Jakarta area, so the water quality of Krukut River needs to be maintained so that it remains in good condition. However, along with the many industrial and household activities that throw waste into the river, the quality of river water decreases. Water quality of river can be affected by population growth and land use around the river. The more activities along the watershed possibility of pollution, which can result in a decrease in the health quality of surrounding community and also damage to the river ecosystem. The purpose of this study is to determine the condition of water quality status of Krukut River in Depok segment based on Pollution Index method. Sampling was carried out only once with grab sampling method, and monitoring sampling in November 2021 to July 2022. Based on the results of research on the water quality status of the Krukut River using the Pollution Index method according to class I PP Number 22 of 2021, it shows that the Krukut River is included in the river category with moderately polluted status, so it is necessary to make control efforts of Krukut River water pollution. To reduce the value of the pollution load that enters the river namely by making a communal scale WWTP, holding outreach and education activities to the surrounding community about the importance of sanitation and hygiene.

Keywords: Krukut River, Water Quality, Pollution Index

[22]

Identification of Potential Pollution from Liquid Waste of Micro, Small and Medium Enterprises (MSMEs) Poultry Slaughterhouses

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Abstract. The trend of world demand for poultry meat increasing by 6% could trigger an increase in the number of poultry slaughterhouses. However, there are by-products from the poultry farming process, namely solid waste and liquid waste originating from feces, residue from slaughtering activities such as poultry innards and blood which can enter water bodies around the poultry slaughtering area. Waste produced from poultry slaughtering activities generally consists of organic waste such as protein, blood and fat. This organic waste can cause eutrophication which affects the balance of the water ecosystem and can cause infections in the surrounding community. The aim of this research is to identify the potential of liquid waste from micro, small and medium enterprises (MSMEs) from poultry slaughterhouses in Banjarbaru area for pollution in the environment around that it can provide recommendations in mitigation efforts for the management of liquid waste from poultry slaughterhouses in Banjarbaru. In this research, data was collected using survey methods at two locations, namely poultry slaughterhouses in Sungai Besar and Landasan Ulin. Then followed by measurements and analysis of the potential liquid waste from poultry slaughterhouses using wastewater quality standard parameters for Slaughterhouse (RPH) businesses and/or activities based on Minister of Environment Regulation No. 5 of 2014 The indicators/parameters include TSS, BOD, COD, as well as Pb and Cd metal levels. Identification of potential pollution from poultry slaughterhouse waste in samples was carried out by testing TSS, BOD, COD levels, as well as testing heavy metal levels using Atomic Absorption Spectrophotometer (AAS) system analysis. Metal content test results showed that metal levels were generally still below the permitted limits. Meanwhile, the TSS, BOD and COD test results were very far above the threshold based on waste water quality standards for Slaughterhouse (RPH) businesses and/or activities based on Minister of Environment Regulation No. 5 of 2014, namely BOD 100 mg/l, COD 200 mg/l, and TSS 100 mg/l. Therefore, further studies need to be carried out on liquid waste management at poultry slaughterhouse MSMEs in Banjarbaru.

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Keywords: liquid waste, poultry slaughterhouses, identification, pollution.

[23]

Inventory of Greenhouse Gas Emissions During 2023 from Market Solid Waste in Kendari City to Support Green City Development

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Abstract. Greenhouse gas emissions from market waste can be an environmental problem that comes from methane (CH_4), which is a powerful greenhouse gas that contributes to climate change. This research aims to find out what types of solid waste are produced from market activities in Kendari City and how much market solid waste can produce greenhouse gas emissions (CH_4) in Kendari City markets within a period of one year (2023). This research was carried out in three market locations, namely Kendari City Central Market, Mandonga Market and Baruga Market. This research uses direct observation methods in the field in the three markets that are the research sample by calculating solid waste generation and solid waste emissions. The large number of community activities in the market will create a larger volume of waste. The research results show that the types of solid waste in the Kendari City market are dominated by organic waste, namely vegetable waste and food waste, then there is paper/carton, cloth, wood, rubber, plastic, metal, glass and others. The total content of methane gas emissions in Mandonga Market is 1,419.114 Gg/Year, Baruga Market produces 2,128.661 Gg/Year of methane gas, City Central Market produces 709,531 Gg/Year of methane gas, so the total CH_4 emissions produced from the three markets Kendari City reached 4,830.06 Gg/year. Therefore, there needs to be an effort from the Kendari City Government to support green city development, namely by converting methane produced from market waste into a useful energy source, such as electricity or gas.

Keywords: Greenhouse Gas Emissions, Methane, Market Solid Waste, Kendari City.

[24]

Renewable Waste Water with Filtration and Phytoremediation System by Using Water Hyacinth and Zeolith

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Abstract. Laboratory is a unit that can produce waste water. To prevent the negative impact of waste water, this liquid waste must be managed before disposal. Phytoremediation and or combination with filtration system is most preferable technique to improve the quality of wastewater. According to this point of view, this present study aims to analyze the effectivity of water hyacinth or zeolite as a phytoremediation system in combination with filtration system to improve the quality of laboratory waste water. The study was divided into 6 treatment groups; only filtration media; waste water only; combination of filtration media and zeolite, combination of filtration media and water hyacinth; combination of filtration media, 700 gr of zeolite, and 300 gr of water hyacinth; and a combination of filtration media, 300 grams of zeolite, and 700 grams of water hyacinth. The parameters tested in this study were BOD, COD, TSS, TDS, and turbidity some measurement times. The results showed that the combination of filtration and phytoremediation was able to improve the quality of waste water. The best treatment for all parameters was combination filtration with zeolite only. It seems an interaction between water hyacinth and zeolite which is reduce the effectiveness to improve all parameters.

Keywords: Phytoremediation, Water Hyacinth, Waste Water, Zeolite.

[25]

Neurotoxicity of Lead: a Mapping Analysis Using Open Knowledge Maps

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Abstract. Lead (Pb) is a heavy metal that is widely utilized by the industrial world for various purposes, for example in the battery industry, batteries, paints, and others. Besides being beneficial, Pb exposure can induce the damage of blood, liver, and nervous system. The impact of Pb exposure on nervous system is still rarely discussed. Based on this fact, this present study aims to explore the neurotoxicity effect of Pb exposure using Bibliometric approach. The Open Knowledge Maps Application was used to collect publication from pubmed between 2013-2023 using Keywordss Pb as neurotoxic. The analysis results shows that 65 published articles with 14 clusters related to this topic. China is a country that contributes a lot to the research topic. Meanwhile, Environment Research is a journal that found many documents on the topic. In conclusions, a huge opportunity for research with the topic of neurotoxicity of Pb exposure

Keywords: Heavy metal, Lead, Neurotoxicity.

[26]

Evaluation of Teratogenic Effects of Organophosphate Pesticides: In Silico and In Ovo Study

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Abstract. Vegetable farmers in South Kalimantan use pesticides to protect their crops from pest attacks. Pesticide active ingredients have widespread toxicity effects on target and non-target organisms. Continuous exposure to pesticides has the potential to cause cancer. This study aims to examine exposure to organophosphate pesticides on the Anaplastic Lymphoma Kinase (ALK) protein in silico and in ovo. The in silico study used molecular docking and virtual screening methods. The in ovo study was carried out by injecting pesticide compounds at doses of 0.5 and 1 ppm into free-range chicken eggs. The results of in silico analysis show that ethion has the most negative ΔG value, namely -8.62 kcal/mol respectively, while the natural ligand 8 LY A 500 is -9.19 kcal/mol. The similarity in the type and number of residues in the binding complex between the ethion ligand and the ALK protein indicates the potential for damage by ethion to the ALK protein. Ethion plays a role in triggering the growth of the ALK protein which causes cancer.

Keywords: Anaplastic Lymphoma Kinase, molecular docking, virtual screening, ethion, in ovo

[27]

Performance of Gelatin/Carboxymethyl Cellulose Sugarcane Bagasse Biofilm for Food Packaging and Preservation

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Abstract. Most traditional food packaging and preservation films have limited stretchability and less functional, which severely limits their practical application. In this study, a highly stretchable, versatile performance and eco-friendly gelatin/carboxymethyl cellulose sugarcane bagasse biofilm was elaborately designed and demonstrated as an efficient food packaging and preservation. The objective of this study was to study the effect of addition of carboxymethyl cellulose sugarcane bagasse (CMC SB) into pure gelatin (GL) matrix on physicochemical and mechanical properties of the blend matrix. CMC SB has been added to the pure gelatin in the ratio of 90:10 and 70:30 (GL:CMC SB) volume per volume. The dynamic mechanical, thermal, structural, water vapour permeability and oxygen permeability were studied. The characterisation studies were carried out by using Fourier Transform Infrared (FTIR) Spectrometer, Ultraviolet-Visible (UV-Vis) Spectrophotometer, Universal Testing Machine, Thermogravimetric Analyser (TGA) and Scanning Electron Microscope (SEM). The 70:30 (GL:CMC SB) film reached their maximum stress at 17.85 ± 2.36 MPa as compared to 90:10 (GL:CMC SB) 15.47 ± 1.19 MPa and pure gelatin biofilm 15.28 ± 1.02 MPa. Meanwhile, 90:10 (GL:CMC SB) film exhibited the most flexible characteristic with elongation at break (EAB) value of 42.50 ± 2.95 %. Pure gelatin film possessed a poor water vapour barrier property which determined as 1.56 ± 0.64 g m^{-1} day^{-1} atm^{-1} and poor barrier property against O_2 gas with a value of 1.28 ± 0.30 x 10^{-4} cc m^{-1} day^{-1} atm^{-1} as compared to biofilms added with CMC SB. On the other hand, UV-Vis spectroscopy analysis showed that the carboxylate and carboxy functional groups served as a link for all the components. Notably, the shelf life of cherry tomatoes (Solanum lycopersicum var. cerasiforme) was prolonged by at least one week under ambient conditions. Thus, this study not only provides a highly stretchable and versatile biofilm, but it also boosts the in-depth understanding and rational design of robust food packaging and preservation films.

Keywords: Biofilm; Gelatin; Carboxymethyl cellulose sugarcane bagasse; Food packaging; Food preservation.

[28]

Effect of Triton X-100 volume towards stabilisation of bergamot essential oil nanoemulsion

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Abstract. A nanoemulsion is a system where a liquid is dispersed in another liquid and the diameter of droplets are below 1000 nm. A comparatively high kinetic stability can be possessed by a nanoemulsion because it is a non-equilibrium system. The system requires energy input throughout preparation methods. Uniform small droplet sizes could enhance the stability of nanoemulsion and prevent sedimentation and creaming. The objective of this study was to study the effect of Triton X-100 volume towards stabilisation of bergamot essential oil nanoemulsion (BEREX). The BEREX was prepared with 1% (w/v) of xanthan gum (XG) solution, a biopolymer that is derived from *Xanthomonas campetris* bacteria by using both a high-speed homogeniser and an ultrasonic homogeniser. The chemical properties of the nanoemulsion were examined by Fourier transform infrared (FTIR) spectroscopy, optical light microscopy. pH, turbidity and conductivity test. The capabilities of BEREX to encapsulate and load bergamot essential oil were investigated through ultraviolet-visible (UV-Vis) spectroscopy. FTIR studies revealed the relationship between all materials after homogenisation processes. The emulsions are fine and polydisperse under optical light microscope. By measuring the pH, all the nanoemulsions prepared were slightly acidic as the volume of Triton X-100 increases. The conductivity of the nanoemulsion presented an increment as the net charge of the nanoemulsion increases as the volume of Triton X-100 increases. The encapsulation efficiency and loading capacity of the BEREX were 89.87% and 54.22 %, respectively. In short, the stability of BEREX is not affected much by the volume of Triton X-100.

Keywords: Nanoemulsion, Xanthan gum, Bergamot essential oil.

[29]

A Wetland-Based Village Waste Bank In Sekumpul, Martapura District, Banjar Regency

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Abstract. The waste bank was established because of public concern about the environment which is increasingly filled with both organic and inorganic waste. The increasing amount of waste will certainly cause many problems, so it requires processing such as making waste into useful materials. It is hoped that waste management with this waste bank will be able to help the government in handling waste and improving the community's economy. A waste bank is a place used to collect waste that has been sorted. The results from the collection of sorted waste will be deposited to places where crafts are made from waste or to waste collectors. The waste bank is managed like banking by volunteer officers. Depositors are residents who live around the bank location and receive a savings book like saving at a bank. The main aim of establishing a waste bank is to help handle waste processing in Indonesia. The next aim of the waste bank is to make people aware of a healthy, neat and clean environment. Waste banks were also established to convert waste into something more useful in society, for example for crafts and fertilizer which have economic value. Waste banks have several benefits for humans and the environment, such as making the environment cleaner, making people aware of the importance of cleanliness, and turning waste into economic goods. The benefit of a waste bank for the community is that it can increase people's income because when they exchange waste they will get a reward in the form of money collected in the account they have. People can withdraw money from their savings at any time when they have accumulated a lot of savings. The rewards given to savers are not only in the form of money, but some are also in the form of basic food items such as sugar, soap, oil and rice. Waste banks are also beneficial for students who are financially disadvantaged, several schools have implemented school fee payments using waste. With the above, it was initiated to carry out activities to establish a Waste Bank in Sekumpul Subdistrict, Banjar Regency by a Team of Lecturers and Students at the Islamic University of Kalimantan, Muhammad Arsyad Al Banjari and colleagues with a community empowerment program (PPM) scheme in wetlands.

Keywords: Waste Bank, Management, Sekumpul Subdistrict, Wetlands.

[30]

Strategy for Implementing Cleaner Production (Produksi Bersih) at the Palm Oil Factory PT. SPA

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Abstract. The PT.SPA Palm Oil Factory is an agribusiness plantation company engaged in palm oil processing which produces the main products in the form of CPO palm oil and palm kernel. As well as producing the main product, the palm oil industry also produces quite a lot of waste. This waste consists of solid waste, liquid waste and gas waste. The concept of clean production is recommended as an effort to provide benefits from an ecological, economic, social and technical perspective. Based on this, this research aims to analyze the strategy for implementing clean production in the palm oil processing process at the PT.SPA Palm Oil Factory by analyzing the existing implementation of clean production, analyzing the dominant factors for implementing clean production, and determining the priority scale for the strategy for implementing clean production in the factory. Palm Oil PT.SPA. To answer the above objectives, field surveys, observations and interviews were carried out. Data were analyzed descriptively quantitatively. Formulation is done with the help of AHP analysis. The research results show that the problems that occur at each processing station at the Palm Oil Factory of PT. SPAs can be overcome by implementing a clean production strategy through a good housekeeping program, namely in the form of operations in accordance with Standard Operating Procedures or Work Instructions for Palm Oil Processing, recycling the waste produced in the processing process and implementing increased employee understanding of clean production.

Keywords: Clean Production, Palm Oil Factory, Strategy

[31]

Coal Mine Wastewater Management Using Settling Pond Infrastructure

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Abstract. Coal mining activities have an important impact on the environment around the mining area. One of the impacts that can occur is pollution of air receiving bodies originating from mining wastewater. The settling pond infrastructure is designed and constructed to manage mine wastewater so that it has quality output according to quality standards set by the government. The design and capacity plan for the sludge settling pond is calculated by considering the intensity of rainfall, the area of the rain catchment area, and the allowable air output discharge. The settling pond components being constructed include sediment ponds, safety ponds, mud ponds and drying ponds. The aim of this research is to determine the effectiveness of coal mine wastewater management using settling pond infrastructure against the wastewater quality standards set by the government. Mine wastewater at the compliance point of a settling pond being sampled and monitored periodically in three years to obtain TSS (total suspended solid) data. From the research results it was found that the TSS value of coal mine wastewater at PT ABC complies with the quality standards set by the government (below 200 mg/l). This indicates that the management of coal mine wastewater with settling pond infrastructure implemented by PT. ABC is effective.

Keywords: mine wastewater, settling pond, total suspended solid

[32]

Sustainable Membrane Based on Cellulose Acetate Waste and Cyrene for Microalgae Harvesting

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Abstract. This study presents a comprehensive evaluation of four uniquely formulated phase-inverted membranes—M1, M2, M3, and M4—crafted from varying combinations of polymers and solvents, tailored for the filtration of microalgae cultures. M1 is composed of polyvinylidene difluoride (PVDF) using N,N-Dimethylformamide (DMF) as the solvent, while M2 and M3 are based on commercial and waste cellulose acetate with DMF, respectively, and M4 utilizes waste cellulose acetate with Cyrene. Scanning electron microscopy (SEM) analysis revealed the presence of surface pores across all samples, with M1 exhibiting a notable density of micropores. A systematic investigation into the hydrophilicity of the membranes was conducted through static and dynamic contact angle measurements. M1 demonstrated significantly higher hydrophobicity (85º static, 87-82º dynamic) compared to the more hydrophilic M2 (65º, 70-19º), M3 (62º, 62-0º), and M4 (68º, 62-38º). These findings were substantiated by a rigorous statistical assessment using Tukey's Honest Significant Difference (HSD) test, confirming the pronounced hydrophobic character of M1 relative to others, with a p-value of 0.001, while also indicating minimal variance between M2, M3, and M4. Performance analysis in terms of permeability highlighted the efficiency of these membranes in microalgae filtration. Initial permeability values were recorded as 480 & 162.4, 670 & 225.92, 1150 & 181.7, and 470 & 82.04 L/m²hbar for M1, M2, M3, and M4, respectively, maintaining a consistent 100% biomass rejection. Following regeneration procedures, a decline in permeability was observed, signifying effective membrane recovery and sustainability. The post-regeneration rates stood at 143.05, 183.3, 148.61, and 55.55 L/m²hbar for M1, M2, M3, and M4, respectively. This research underscores the potential of using tailored phase-inverted membranes in microalgae biofiltration processes, offering insights into their morphological, hydrophilic, and performance attributes, and emphasizing the feasibility of membrane regeneration. The outcomes serve as a valuable reference for the enhancement of filtration technologies in sustainable bioapplications.

Keywords: Membrane, Permeability, Contact Angle.

[33]

Disentangling Membrane Wetting, Compaction, and Fouling in Low-Pressure Filtration

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Abstract. The burgeoning interest in ultra-low-pressure microfiltration and ultrafiltration for water remediation has foregrounded the exigency for comprehensive understanding and mitigation of factors impeding membrane performance, specifically membrane fouling and compaction. While fouling is extensively documented, the phenomenon of membrane compaction remains relatively under investigated. This study elucidates the discrete and synergistic effects of wetting, compaction, and fouling on flux decline in polyvinylidene difluoride (PVDF) membranes, fabricated via the immersion precipitation phase inversion method. Experimental protocols were meticulously designed employing both pristine water and authentic river water matrices, with pressure stepping and iterative filtration assays to dissect the constituent factors affecting flux. The investigations unambiguously demonstrated the incidence of membrane wetting during pressure-stepping experiments, corroborated by an ascendant permeability trajectory concomitant with escalating pressures. This trend was attributed to pore wetting processes activating latent flow pathways, thereby augmenting permeate flux. Membrane compaction, characterized by a decrement in permeability, manifested conspicuously throughout successive clean water filtration cycles. In contrast, consistent fouling episodes, evidenced during all river water filtrations, unequivocally dictated the lower permeability thresholds, relative to the clean water controls. Notably, the experimental data revealed the concomitance of membrane wetting and compaction with prevalent fouling mechanisms, thereby underscoring the criticality of integrating clean water controls in performance evaluation matrices for membranes interfacing with heterogeneous aquatic feeds. This research amplifies the scientific discourse on membrane compaction, a parameter often relegated to the periphery of flux decline narratives, predominantly dominated by fouling. By highlighting the intricate interdependencies of wetting, compaction, and fouling, this study advocates a recalibrated perspective on flux performance analytics. Such an approach is instrumental in harnessing the full potential of membrane technologies in water treatment paradigms, necessitating multifaceted strategies beyond conventional fouling-centric countermeasures.

Keywords: Membrane Wetting, Membrane Compaction, Membrane Fouling.

NATURE RESOURCE, BIODIVERSITY, AND CONSERVATION

[1]

Groundwater Management in Coastal Area of Batang Regency to Anticipate Sea Water Intrusion

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Abstract. Of the water sources that exist on earth, almost all of human's daily water needs such as drinking, bathing and washing are sourced from groundwater. Uncontrolled extraction of groundwater can cause various impacts on the environment, such as lowering of the groundwater level and seawater intrusion. Efforts to manage groundwater need to be carried out so that its availability is always maintained. The initial step of this effort is to formulate a management model as a basis for policy determination. For this reason, in this study a dynamic modeling simulation was carried out using the Powersim 2.5c program. The results of the research show that the priority for groundwater management efforts in the coastal area of Batang Regency is to reduce the use of groundwater for the domestic sector which can be done through saving groundwater use or by increasing the capacity of the local water company. Besides that, management through artificial recharge by making infiltration wells or biopore holes is also effective in maintaining the availability of groundwater in this area.

Keywords : Groundwater, sea water intrusion, Batang Regency.

[2]

River Pollution in Yogyakarta City

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Abstract. Water is one of the most important resources to support human life. However, from time to time the problems related to water are getting more complex. In addition to the increasingly limited number, the quality of the water is also decreasing due to pollution. The river is a body of water that is very easily polluted because until now it is still a place for liquid waste disposal for some human activities and its open location. The purpose of this study was to analyze river water pollution in the city of Yogyakarta. For this reason, data collection results from water quality monitoring of the Winongo River, Code River, Manunggal River and Gajahwong River were carried out by the Yogyakarta City Environment Service. Furthermore, a comparative descriptive analysis was carried out, namely by comparing water quality data with quality standards. The parameters compared were Nitrate, BOD, COD and E. coli. In addition, a spatial analysis was also carried out by comparing the level of water pollution from the four rivers. The results showed that all rivers in the city of Yogyakarta have been polluted. In terms of the level of pollution, the Winongo River is the least polluted river because only the Esherichia coli concentration exceeds the quality standard and is polluted by nitrate in the two monitoring allocations in the southern part. The Manunggal River which is the smallest river actually experiences the heaviest pollution. Apart from E. coli, the concentrations of BOD and COD in this river also exceeded the quality standards in all monitoring locations. With the same amount of waste, the factor of the small size of the river is probably the cause of the high level of pollution in this river.

[3]

Economic Valuation and SROI of Reforestation and Restoration of Karyamekar Village Forest Area, Pasirwangi District, Garut Regency

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Abstract. The existence of forest areas is an important and integral part of the carbon sequestration potential that can reduce the adverse effects of the climate crisis. The increase in population and development leads to a reduction in water catchment areas and oxygen produced. Reforestation planting in upstream areas plays an important role in improving environmental availability. In this study, the economic value of carbon stocks in reforestation and handling forest encroachment with restoration in Karyamekar Village, Pasirwangi Sub-district, Garut Regency was specifically analyzed. In addition, from the results of monetizing the benefits of carbon sequestration, the present value, future value and SROI (Social Return on Investment) ratio of this activity were calculated so that it could be a projection of the reforestation program on the environment. The resulting SROI value reached a value of 4.00.

Keywords : Carbon Stocks, Reforestation, Restoration, SROI

[4]

Environmental Conditions Support Ecosystem Services in Jatigede Reservoir, Indonesia

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Abstract. Reservoir has many benefits such as providing a source of drinking water and a source of food from capture fisheries which can be categorized as ecosystem services. This paper aims to see how the environmental conditions of Jatigede Reservoir waters produce an ecosystem service, especially provisioning services. The environmental conditions analyzed in this study are physical, chemical, and biological, and calculating water quality status using the Storet method. The results showed that in March the environmental condition of Jatigede Reservoir was heavily for class 1 (not good for drinking water sources) and also heavily polluted for fisheries (class 2 and class 3). The diversity index of phytoplankton (0.968-1.540) and zooplankton (1.559-1.989) showed a lightly polluted - heavily polluted condition. This can affect the results of ecosystem services which show that the results of capture fisheries in March there are 8 types of fish. In August, the condition of Jatigede Reservoir seen from the designation of drinking water sources was in a heavily polluted condition which showed that the benefits as a source of drinking water were less suitable for consumption. Jatigede Reservoir water quality status in class 2 fisheries designation is heavily polluted and class 3 is moderately polluted. Judging from the phytoplankton index (0.589-1.395) and zooplankton (1.161-2.093), the water conditions in August were heavily polluted to unpolluted, this can be seen from the many types of fish caught, such as 17 species. The environmental condition of the Jatigede Reservoir waters is very influential in supporting ecosystem services.

Keywords: Provisioning Services, Water Quality, Plankton, Fisheries, Diversity.

[5]

Macrobenthic Assemblages, Distribution and Functional Guilds Under Different Types of Land Use in The Upper Reaches of The Citarum River

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Abstract. The Citarum River is one of Indonesia's national strategic rivers with high productivity, but it is under serious threat from anthropogenic disturbances. Macrobenthos are biota that play a role in aquatic ecosystem health. In this study, we examined macrobenthos assemblages from freshwater areas along the Upper Citarum River to assess their community structure, distribution, and trophic status, as well as to determine the environmental drivers influencing their distribution patterns across different land use types. The result identified a total of 317 species, belonging to 21 families in 11 orders within three phyla. The abundance of macroinvertebrates was recorded in agriculture areas (222 ind), followed by settlement factory areas (95 ind). Diversity indices, including shannon, equitability, dominance, and margalef displayed similar patterns across different land use types. The Analysis of Similarity Percentage (SIMPER) identified in agricultural areas and settlement factory areas are Hydropychidae and Palaemonidae, respectively. Five functional feeding groups (FFGs) were identified filter collectors (FC) having the highest total density (78.829%) in agricultural areas and scrapers (SC) having the highest total density (87.37%) in factory residential areas, respectively. Canonical Correspondence Analysis (CCA) analyses showed positive correlations with temperature, total organic carbon (TOC), and total organic matter (TOM) for Nepidae and Palaemonidae. In addition, CCA analysis also revealed a significant positive influence of DO, turbidity, pH on gatherer collector (GC), predator (PR), FC. These results indicate that the macrobenthos of this river do not follow the usual pattern of spatial distribution, but are instead structured by DO, temperature, pH, turbidity, TOC, and TOM. Overall, the study suggests that the river is moderately diverse in terms of macro-benthos and their functional feeding groups, and that it is strongly influenced by land use types. This study in the upper Citarum River will provide baseline information for investigations in other rivers by establishing strategies for conservation and restoration of macroinvertebrate biodiversity against anthropogenic disturbances in achieving river ecosystem integrity.

Keywords: biodiverisity, functional feeding group, environmental drivers, ecosystem integrity.

[6]

Comprehensive Evaluation of Coal Mine Pit Lake Hydrological Connectivity in South Kalimantan, Indonesia

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Abstract. This study presents the first comprehensive evaluation of an ex-coal mine pit lake at a landscape scale in Indonesia, using a hydrological connectivity approach. The stability of the water balance and water quality of a pit lake depends on the condition of the catchment area, which functions as a source of water inflow. To assess this, a combination of Remote Sensing (RS) and Global Information Systems (GIS) techniques, along with field surveys e.g., bathymetric, and hydraulic survey, infiltration rate testing, and soil sampling for geochemical analysis, was used. The evaluation of pit lake catchment area resulted in the first Normalized Difference Vegetation Index (NDVI) map for the land cover assessment of the pit lake's catchment area in Indonesia. The study provides quantitative evidence of the hydrological connectivity between Paringin pit lake and its catchment area, as well as the continuous flow of water from the lake to the receiving river. In a tropical climate with rainfall exceeding 3,000 mm/year and evaporation of 1,000 mm/year, and with a pit lake-to-catchment area ratio of 1:7, the lake will transition into a flow-through system, maintaining good water quality. Catchment-based mine reclamation methodology will provide a more sustainable future post-mining utilization.

Keywords: Pit lake, hydrological connectivity, catchment area, water balance, NDVI

[7]

Analysis of Changes Land Cover in Balige sub-district, Toba District in 2014-2022

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Abstract. Balige Subdistrict serves as the capital of Toba Regency, situated at an elevation ranging from 905 to 1200 meters above sea level, covering an area of 91.05 square kilometers, and had a population of 44,635 people in the year 2020. The growing population not only requires housing but also sustenance, leading to a rising demand for land. Changes in land cover are of paramount importance for environmental and natural resource management. The study was conducted in Balige Subdistrict, Toba Regency, spanning from 2014 to 2022, utilizing Google Earth Engine and Landsat 8 satellite imagery. The primary objective of this research is to analyze the alterations in land cover that have occurred in Balige Subdistrict, Toba Regency. The research process involved identifying the various land cover types within the subdistrict and subsequently creating training samples for each predefined land cover category. The study yielded four distinct land cover categories: Cultivated Land, Forest, Built-up Area, and Open Land. Change detection analysis revealed that forest land cover remained relatively consistent in terms of its extent, experiencing minimal alterations.

Keywords: Balige sub-district Landsat, Land Cover, Land Cover Changes

[8]

Morphometric Analysis Based on Multi-Sources Data and Geographic Information System in the Cirasea Watershed, Indonesia

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Abstract. The Citarum River basin has witnessed civilization in Java, Indonesia since a hundred years ago. Upstream Citarum, currently, receives pollutants and requires a morphometric study to understand its characteristics. This research aims to analyze watershed morphometrics using multi-sources data and geographic information system (GIS). Our research was located in the Cirasea watershed, West Java, known as the starting area for the Citarum River basin. Data came from multiple sources such as DEMNas, SRTM, CopernicusDEM, AsterDEM, Topographic Maps (RBI), BBWS-Citarum, high-resolution satellite imagery, as well as field surveys to obtain accurate information. Data integration and analysis referred to a geospatial approach using QGIS. This research showed that the Cirasea watershed has an area of 366.17 square km, with permanent rivers and periodic rivers reaching 106.84 km and 297.35 km, respectively. The Cirasea watershed has a rounded shape with 10 reaches named 1) Baleendah, 2) Cikoneng, 3) Ciparay, 4) Ibun, 5) Jelekong, 6) Kertasari, 7) Majalaya, 8) Panca, 9) Rancakasumba, and 10) Sumbersari. The watershed's flow density is 170 m per square km with a trellis pattern and a meandering level of 11.40. The Cirasea has 8 river orders and 4 oxbow lakes downstream along 3.4 km. Multi-sources data and GIS have proven to reveal detail characteristics accurately both in detail and actual conditions.

Keywords: Citarum, GIS, river, watershed management.

[9]

The Model of Farmers Relation and Natural Relations in Sustainable Water Utilization Design (Case at Giri Mulya Village, Dry Land -Around Kerinci Seblat Nasional Park) Jambi Province-Indonesia

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Abstract. During Covid-19, the world was stunned by food shortages. Except in Indonesia, food is still under supervision during Covid-19. As a result, food is the driving force behind Indonesia's development. The case of food on dry ground in Giri Mulya Village, on the other hand, is tied to the presence of water sources. Farmers cannot cultivate food on dry land during the dry season due to a lack of water. Meanwhile, water is plentiful in the northern area of Kerinci Seblat National Park. Water flow distribution technology can be used to channel water via the intage from Kerinci Seblat National Park, but there are concerns with water regulation in the National Park area. The goal of the project is to establish a sustainable method of distributing water from intage in Kerinci Seblat National Park to farmers' land, so that water is available both in the dry and wet seasons. The strategy employed is to utilise GIS to overlay regional maps and farmers' land maps and derive data on water availability and demand. A current metre is the tool utilised. GPS and satellite imaging, as well as approaches to conservation-related legal measures. According to the research findings, 59,400 m3/day of water might be delivered. Water taps designed on farmers' land without destroying biodiversity in National Parks. Farmers can plant twice a year on a continuous basis.

Keywords: Farmers, relations, water utilization, sustainable and design

[10]

Rainwater Harvesting Model as an Alternative in Providing Fresh Water Sources on Lancang Island

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Abstract. This research aims to analyze rainwater harvesting models to meet fresh water needs in P Lancang. The method in this research is quantitative. Rainwater storage is calculated using Roof-base System . Water needs by the people in P Lancang using a survey method with 87 peopleas sample. The calculation of rainwater harvest results uses a roof base system, will compare to community's water needs. The results shows that The total individual water requirement based on primary data is 133.87 liters/day, so the water requirement for a family of 4 people for a month is 16,064.4 liters. Meanwhile, the results of rainwater storage calculations show that for buildings type 36 to type 70 there is still a deficit, while for type 100, type 200 and more than type 200, water can be stored and used for 3 dry months. However, rainwater harvesting can be a solution to reduce the purchase of fresh water during the dry season and buildings with large roofs can be used as communal water reserves that can be managed to be used together on the island

Keywords : Rainwater harvesting, Community,Roof-base system

[11]

The Impact of Mangrove Land-Use Conversion on Coastal Erosion (A Coastal Ecological Study of Jakarta and Muara Gembong)

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Abstract. The impact of mangrove land-use conversion on coastal erosion has led to significant losses for the environment and coastal communities in Jakarta Bay and Muara Gembong. This study aims to identify the factors driving mangrove land-use conversion and analyze the repercussions of erosion in both areas. The research methodology employed is qualitative descriptive. The research sample consists of members from the KEBAYA, POKDARWIS, and ALIBATA farmer groups. Data collection involves interviews with these farmer groups and a literature review. The collected data will be qualitatively analyzed by comparing the ecosystem conditions in Jakarta Bay and Muara Gembong. The research findings and interview results reveal that mangrove land-use conversion into shrimp ponds is a significant driver of erosion in Muara Gembong and Jakarta Bay. This situation leads to the degradation of mangrove ecosystems, affecting the livelihoods of coastal communities. In 2020, only 29.9% of mangrove areas in Jakarta Bay remained in good condition, while in Muara Gembong, the figure was as low as 9.81%. Therefore, efforts for mangrove land rehabilitation are imperative, involving reforestation, community empowerment, and education initiatives to enhance understanding of the crucial role of mangrove ecosystems in ensuring the sustainability of coastal environments.

Keywords : Coastal communities, Erosion, Jakarta Bay, Mangrove Land-Use Conversion, Muara Gembong.

[12]

Diversity of Decomposer and Factors Determining it in Wetlands Cultivated to Oil Palm

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Abstract. Our previous research showed that development of oil palm reduced the contents of soil organic carbon but increased soil ash content. However, the reason for the changes in the contents of soil organic carbon and ash remained unclear. Present research was carried out to elucidate the diversity of soil organic matter decomposer and factors determining diversity of decomposer in wetlands. Soil samples were taken from wetlands cultivated to 2 years, 6 years, and 10 years old oil palm, as well as secondary forest, in Landasan Ulin Utara village, South Kalimantan. Soil samples were transported to the laboratory and used for determination of population of cellulolytic microbes, microbial C, soil pH, and water and ash contents. Correlation test was employed to assess the relationship between population of cellulolytic decomposer with microbial C, soil pH, and water and ash contents. The results showed that the population of cellulolytic microbes in 0-20 cm soil depth were 1.17 x 10^4, 1.57 x 10^4, 1.76 x 10^4, 2.74 x 10^4cfu/g soil while in 20-40 cm depth were 8.22 x 10^3, 1.23 x 10^3, 1.43 x 10^4, 2.03 x 10^4 cfu/g soil in secondary forest, 2 years oil palm, 6 years old oil palm, and 10 years old oil palm fields, respectively. There were positive correlations between population of cellulotic decomposer with all parameter measured, except soil ash content. The relationship between decomposition rate (Y, mm/day) and the population of cellulotic decomposer (X, cfu/g soil) can be described with equation Y = 0.117 + 3 x 10^5. These findings suggested that decreased in soil organic matter was due to the enhanced diversity of cellulolitic decomposer in wetland soil cultivated to oil palm.

Keywords: microbial diversity, oil palm, wetland.

[13]

Environmental Analysis to Support Sustainable Ecotourism in Pulisan Bay

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Abstract. Pulisan Bay, located on the most Northern shore of Sulawesi, has much to offer above and below the surface. Explore the shallows and depths of the surrounding waters, and immerse yourself between the bright & multicolored soft corals for which this area is famous. Venture yourself through the rain forest, and you will come face to face with some of its endemic species like the Tarsiers and black crested Macaques. Hikeable hills with densely trees yet open areas of savannas are collective assets of this place. Boat riding is another way to experience the unreachable places on the other side of the Bay. With these potentials, the Ministry of Tourism, Public Works Department of Indonesia and the owner of the land has initiated the designation of Pulisan Bay as a Special Economic Zone (SEZ) with emphasis on Ecotourism. Ecotourism is defined as activities of responsible traveling in intact areas or in areas which are named according to the role of nature. As one of the main sources of foreign currency earnings, tourism is of great importance to the Indonesian economy. Indonesia's commitment to ecotourism and sustainable tourism development is stated in the National Development Plan 2005 - 2025 and the Tourism Act, Law no.10 Year or 2009. However, the negative environmental impacts of tourism such as the depletion of local natural resources as well as pollution and waste problems can be substantial. Tourism often puts pressure on natural resources through over-consumption, often in places where resources are already scarce. Tourism can also result in environmental degradation through infrastructure construction in natural areas, habitat fragmentation, significant contributions to global carbon emissions, direct damage to ecosystems by visitors, and direct and indirect impacts on wildlife. This study aims at supporting the necessary fundamentals development in achieving sustainable tourism of Pulisan Bay, as well as in maintaining the area's pristine environment. By using environmental system analysis as the main method, it is hoped Pulisan Bay as a tourist destination will be developed based on sustainability. Thus, the social and economic benefits will be derived from tourism without destroying the environment and local cultures.

Keywords : ecotourism, sustainable tourism, environmental system analysis

[14]

Conservation Program and Identification of Local Orchids in Sabuhur Vilage

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Abstract. The aim of this program was to identify of local orchids in Sabuhur Village, Jorong, Tanah Laut, South Kalimantan. Orchids is one of the largest families of flowering plants that can be found in various countries in the world. There are around 25,000-3,000 species and 800 genera of orchids that have been found in the world and are called as “the queen of flowers”. Two Forest Farmers Groups namely Amabilis Lestari and Pantai Baru in Sabuhur village rescue the local orchids from the forest around the village before the forest is converted into a plantation area. Orchids are rescued and cared for by the community around their homes. However, the community do not identify the types orchids that they are kept. Therefore, from the program of community services, identify of local orchids in Sabuhur village was carried out. A total of 58 types of orchids are kept by the community. The five most abundant species are *Coelogyne pandurata*, *Grammatophyllum speciosa*, *Oncidium americana*, *Arachnis flos-aeris*, *Dendrobium lamellatum.*

Keywords: Local Orchids, Sabuhur Vilage, Conservation, Community Service.

[15]

Stingless Bees (*Heterotrigona itama*) Colony Characteristics and Nest Structure from Three Meliponiculture Practices in Banjar Regency

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Abstract. This research aims to evaluate *Heterotrigona itama* colony characteristics and nest structure from meliponiculture practices in the side yard, back yard, and rubber plantation in Banjar Regency of South Kalimantan. The parameters study are morphological characteristics, colony structure, nest architecture, and environmental suitability. One-Way ANOVA at 95% confidence level was used to analyze differences between parameters. The results show morphological characteristics (body size) average of *H. itama* from rubber plantations are bigger (7.11±0.60 mm) than from side yard (6.79±0.34 mm) and back yard (6.64±0.46 mm). Degree of difference is visible in antenna length (α=0.05<=0.05), front leg length (α=0.00<0.05) and hind leg length (α=0.004<0.05). Colony characteristics from the side yard showed higher activity in dumping, foraging, and nesting activities compared to meliponiculture in the back yard and rubber plantation. Nest structure in the side yard was significantly different in terms of funnel length (p=0.007<0.05) and height from the ground (p=0.000<0.05) compared to meliponiculture in the backyard and rubber plantations. Based on honey pot, pollen pot and propolis distribution, the nest quality index from side yard showed a good category (71%) than rubber plantations and back yard. Environmental conditions suitability (eg temperature = ± 29 C, humidity = ± 68% and river as a water source) in the side yard is more supportive for meliponiculture than in the back yard disturbed by household waste and in rubber plantations polluted by chicken farms. Its conclude meliponiculture practices based on location choice can influences stingless bees (*Heterotrigona itama*) colony characteristics and nest structure.

Keywords : characteristics, colony, *Heterotrigona itama*, meliponiculture, nest structure

[16]

Thermal Activation of Peat Clays and their Potential as Catalytic Cracking Catalysts

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Abstract. Peat clay is a mineral that contains alumina and silica, so it has great potential as a catalyst in the catalytic cracking process. To improve its performance as a catalyst, activation is necessary. This research aims to conduct thermal activation of peat clay from South Kalimantan, Indonesia. Activation was carried out at a temperature of 400 - 600 ^{o}C and then characterized including x-ray fluorescence (XRF), scanning electron microscope-energy dispersive x-ray (SEM-EDX) and Brunaeur Emmet Teller (BET). The results showed that activation temperature affects the process of making peat clay catalysts. The higher the temperature, the higher the Al_2O_3 and SiO_2 content, respectively at 600 ^{o}C 7.29% for Al_2O_3 and 18.37% for SiO_2. Meanwhile, based on BET analysis, the surface area value of peat clay increased after activation, which was 5.776 m^2/g before activation and 6.645 m^2/g after activation. With these results, activated peat clay is very potential to be used as a catalyst in chemical processes.

Keywords: thermal, activation, peat clay

[17]

Effectiveness of Coagulation Methods and Adding Ferrofluite to Prevent Microplastic Contamination in Water

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Abstract. The United Nations Environmental Program states that sambaph found in the ocean is an average of 80%, which will cause the amount of plastic in the ocean to be greater than the amount of fish found in the ocean itself [1]. Plastic that has been in the ocean for a long period of time will decompose into microplastics measuring < 5 mm. The abundance of microplastics in waters is very dangerous because they will be eaten by fish or shellfish which will later be eaten by humans, so they will enter the human body. thus causing several health problems for humans because it can damage cells. Causing energy and even death. In this research, the effectiveness of the coagulation method and the addition of forofluite to prevent micropoplastic contamination contained in liquid waste was determined. The sample used was PET plastic which had been ground and then the optimum conditions for alum mass, PAM, alum vs PAM and pH were determined. The optimum condition was obtained from the variation in alum weight, which was obtained at an alum weight of 200 mg/L as much as 0.4672% loss, the variation in PAM weight was obtained by an optimum weight of 15 mg/L with a large % loss of 0.2496% loss and for variations in Alum and PAM obtained an optimum mass at a ratio of 150: 15 mg/L amounting to 0.9144% loss where this data is the optimum amount obtained from previous tests. After obtaining the optimum mass of Alum and PAM, the optimum pH was varied at pH 3 amounting to 2.3792% loss. From these data it can be seen that this method can bind microplastics well.

Keywords : Microplasti, Ferrofluid, coagulation

[18]

Food Preference and Proximate Analysis on Food of the Proboscis Monkey (*Nasalis larvatus*)

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Abstract. Proboscis monkeys (*Nasalis larvatus*) are endemic species of Kalimantan, whose endangered population. The availability of food sources is very important to support their life survival. The scientific information related to food preference and nutrient content will be helpful as basic data for reference in Ex-situ habitats. This study aimed to evaluate the food preference and proximate composition of the food sources given to the proboscis monkey in the Rehabilitation Center. In this study, two females of the proboscis monkeys were used. Females were given 11 types of food alternately for 14 days. Food preferences were assessed by evaluating the amount of food consumed. The proximate composition of food was analyzed in the laboratory based on water, carbohydrate, lipid, crude protein, crude fiber, and ash content. The food preference test showed that proboscis monkeys preferred foods such as kelakai leaves, cassava tubers, bananas, papaya, tomatoes, and guava than other types of food such as corn, katuk leaves, cassava leaves, kale leaves, or lettuce leaves. Proximate analysis for proboscis monkey feed showed that the highest carbohydrate content was found in cassava tubers with a value of 42.39%, the highest protein content was found in kampung kale leaves with a value of 34.65%, the highest fiber content was found in cassava leaves with a value of 36.19%, The highest water, and lipid content was found in lettuce leaves with a value of 92.86% and 11.56% and the highest ash content was in katuk leaves with a value of 2.30%. In conclusion, the proboscis monkey prefers to be folivores. Eleven samples of food contained nutrition that was required by the proboscis monkey and recommended to be given alternately to fulfill their needs.

Keywords: folivore, food, preference, proximate, proboscis monkey

AGRICULTURE AND FOOD

[1]

Land suitability Assessment for *Aleurites moluccana* (L.) Wild in Toba Regency, North Sumatra, Indonesia

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Abstract. Lumban Pea Timur Village in Balige Sub-district and Sibarani Village in Laguboti Sub-district are villages located in Toba Regency, North Sumatra Province. Currently, the villagers plant Candlenut for economic cultivation. This study aims to evaluate the land for candlenut plantation on land overgrown with candlenut in Toba Regency. Sampling was conducted purposively on land overgrown with candlenut plants in Lumban Pea Timur Village in Balige Sub-district and Sibarani Village in Laguboti Sub-district. Evaluation of land suitability for coffee plants uses the matching method, namely by analyzing laboratory data and laboratory data and field measurement data with land characteristics for candlenut plants. The results showed that the evaluation of land for candlenut plants was marginally suitable (S2) with a limiting factor of rainfall (wa).

Keywords: Land Suitability, Forestry Plants, *Aleurites moluccana* (L.) Wild, Toba Regency

[2]

The Use of Phytobiotics Dayak Onion Extract *(Eleutherine Palmifolia (*L.)Merr) in Drinking Water as A Growth Promoter of Broiler Productivity

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Abstract. Today, people want meat consumption that is free from chemicals, etc. Previously, for the growth of broilers, farmers used drugs, antibiotics, growth promoters, and enzymes to produce fast and large broiler chicken meat. However, it is not thought that the residue from these drugs will impact cancer triggers in the long term. There are many phytobiotics in Indonesia, including one Dayak onion (*Eleutherine palmifolia* (L.)Merr), a local plant from Kalimantan. This study aims to analyze the use of Dayak onion extract as a growth promoter to replace antibiotics on the productivity and health of broilers. In this study, Dayak onions were extracted and dumped in drinking water. The feeding trial was conducted on 100 broiler chickens on Strain Arbor acres for 32 days. Experimental methods were used in this study with five doses of Dayak onion extract (0, 7.5, 15, 22.5, and 30 ppm in drinking water). The parameters tested are the productivity and health of broiler chickens.

Keywords: Phytobiotics, Dayak onions, growth promoters, productivity, broilers

[3]

Potential Development of Oil Palm-Cattle Integration System Program "SISKA KU INTIP" in South Kalimantan

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Abstract. Palm oil is one of the commodities from the agricultural sector that is the mainstay of the domestic economy. Oil palm plantations in Indonesia cover an area of 15.08 million ha (Ministry of Agriculture, 2021). South Kalimantan Province, in particular, has an area of 427,616 ha of oil palm land (South Kalimantan Provincial Plantation and Livestock Office, 2022). With the area of oil palm land, of course, there are forage natural resources under oil palm which must be used as cattle feed. Collaboration between oil palm plantations and cattle has been widely implemented in several locations but is still poorly managed. South Kalimantan Provincial Government, The integration of cattle and oil palm has been widely implemented in several locations by implementing the SISKA KU INTIP program to increase farmers' income in raising livestock in oil palm plantations. In the process of implementing the program, it must be optimized so that it requires potential locations to be developed, considering land area, number of livestock, and capacity. The results of the location quotient analysis show that if the LQ>1 value indicates a concentration of livestock business activities in the subregion of the district.

Keywords: Oil palm, cattle, SISKA KU INTIP, capacity

[4]

Correlation of Dayak Onion Bioactive Ingredients *(Eleutherine Palmifolia (*L.) Merr) in The Extraction Process with Different Soaking Treatments

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Abstract. Research on the length of soaking in Dayak onion extraction on the content of bioactive ingredients has been carried out. There are many phytobiotics in Indonesia, including Dayak onion *(Eleutherine palmifolia (*L.) Merr), a local plant from Kalimantan. To obtain bioactive ingredients in Dayak onions, an extraction process is needed. This study aims to analyze the length of soaking in the onion extraction process against the content of bioactive ingredients. In this study, the length of soaking dayak onions was carried out for 12 hours (T12) and 24 hours (T24). The soaking temperature of both is 65 ^{o}C in the ratio of 1 part dayak onion: 1 part water. Each treatment was repeated for 4 repetitions. The bioactive ingredient variables measured are Saponins, Alkaloids, Flavonoids, Steroids, Tannins, and Phenolics. The statistical analysis used is the t-test (T-test). Based on the results of statistical analysis, it was found that there was a real difference in $P \leq 0.05$ between the length of soaking during Dayak onion extraction on the content of saponins, alkaloids, and flavonoids. Still, it did not show a significant difference $P \geq 0.05$ on the content of steroids, tannins, and phenolics. The correlation of bioactive components in Dayak onions for the highest positive correlation was obtained between tannin and phenolic components, which was 92.5%. The negative correlation was obtained between alkaloid components and flavonoids, which was -72.9%

Keywords: Dayak onions, soaking time, extraction, bioactive ingredients

[5]

Analysis of Local breed Chicken Collectors' Income in Anjir Pasar Barito Kuala District

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Abstract. The research aims to analyze the income of local breed chicken collectors at Anjir Market in Anjir Pasar District, Barito Kuala Regency, South Kalimantan Province. The respondents in this study were local breed chicken collectors at Anjir Market in Anjir Pasar District, Barito Kuala Regency, totaling 8 people, where the determination was determined purposively, namely all local breed chicken collectors. The data collected in this research is primary data and secondary data. Primary data was obtained through interviews with collectors using questionnaires, while secondary data was obtained from related parties. The data obtained from the survey was tabulated and then the income of local breed chicken seller and the R/C ratio were calculated. The research results show that there are 2 marketing channels for local breed chicken collectors, namely: Collector consumers and collectors Big Collector consumer. The highest income for local breed chicken seller is IDR 2,574,000 per month and the lowest is IDR 699,000 per month with an average of IDR 1,361,500 per seller per month with the highest R/C value of 1.20 and the lowest 1.09 with an average of 1.14. The overall R/C is greater than 1, so selling local breed chickens is profitable.

Keywords: Local breed Chickens, Local breed Chicken Collectors, Income

[6]

Enhancing Understanding of Goat Feed Production from Fermented Rice Straw: A Ground Truth Approach to Mitigate El Niño's Impact on Livestock Nutrition

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Abstract. Rice straw in Mangsang Village is typically underutilized by the community. A significant portion is discarded, with only a small fraction used as organic fertilizer. Given that Mangsang Village is home to rice fields and many cattle-owning residents, the dry season poses challenges in providing adequate cattle feed. Unfortunately, a lack of knowledge and limited access to information hinders locals from realizing that fermented rice straw can serve as an alternative feed, which can also be stored for an extended period. The primary objective of this service initiative is to assist residents in preparing alternative cattle feed, especially during the dry season. The approach involves a combination of theoretical instruction and practical application. The one-day activity includes providing instructional materials and hands-on training. Ground truth methodology was employed, emphasizing experiential learning over theoretical understanding. The initial comprehension of the material, initially at 40%, significantly increased to 90% after the activity. Similarly, the practical application, starting at 49%, reached 100% after the event. This remarkable improvement is attributed to the approach of presenting the material followed directly by practical application, which significantly enhances the achievement of the activity's objectives. Indeed, initiatives like this play a pivotal role in enhancing the knowledge and creativity of cattle breeders in the community.

Keywords: Livestock Feed, Rice Straw, Fermentation

[7]

The Utilization of Liquid Smoke and Ameliorant from Empty Palm Bunches on Soil Chemical Properties, Growth and Production of Hiyung Cayenne Pepper in Swamp Land

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Abstract. The growth of oil palm land area causes an increase in palm oil waste produced. The potential of EFB waste has significant economic value, one of which can be used as a material for making liquid smoke and ameliorant to overcome soil fertility problems, especially soil in swamplands. This research aims to examine the interaction effect of the application of liquid smoke and TKKS waste ameliorant on changes in soil chemical properties, growth and production of hiyung cayenne pepper in swamp land. The method used in this research is the Divided Plot Design. Main Plot (A) is liquid smoke pesticide which consists of five levels (concentrations), namely a_0 = 0 m L L^{-1}, a_1 = 10 m L L^{-1}, a_2 = 15 m L L^{-1}, a_3 = 20 m L L^{-1} water, and a_4 = 25 m L L^{-1}. Subplot (B) of the best TKKS ameliorant from phase one research which consists of five levels (measures), namely b_0 = 0 t ha^{-1}, b_1 = 5 t ha^{-1}, b_2 = 10 t ha^{-1}, b_3 = 15 t ha^{-1}, and b_4 = 20 t ha^{-1}. The combination of treatments tried was 25 treatments, each treatment was repeated 3 times, so that in this study there were 75 experimental units. The results of the research showed that the interaction effect of the application of liquid smoke and TKKS waste ameliorant was on the parameters of plant wet weight, plant dry weight, root wet weight and root dry weight of hiyung cayenne pepper. Treatment a_1b_2 (5 mL liquid smoke + 10 t ha^{-1} ameliorant EFB) best increases plant wet weight, a_2b_2 treatment (10 mL liquid smoke + 10 t ha^{-1} ameliorant EFB) best increases plant dry weight, treatment a_1b_3 (5 mL liquid smoke + 15 t ha^{-1} ameliorant TKKS) best increases the wet weight of the roots and the dry weight of the roots of hiyung cayenne pepper in swamp land.

Keywords : Land Amelioration; Suboptimal Land; Sustainable agriculture; Eco-Friendly Agriculture

[8]

Dynamics of Carbon and Nitrogen Content in Cover Crop Plants in Cow Palm Integration Land Areas

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Abstract. The increasing number of oil palm plantations from year to year has opened up new land opportunities for the maintenance and provision of grass in the livestock sector. One of the provinces that has a sizeable area of oil palm plantations is the province of South Kalimantan with an area of oil palm plantations reaching 479.30 thousand hectares (BPS 2021). The plantations are spread across several districts, one of which is in Satui District, Tanah Bumbu Regency.The oil palm plantation business creates jobs and economically provides a very large amount of foreign exchange. However, on the other hand, it has the potential to reduce the number of flora and fauna species due to large-scale clearing of agricultural land and forests.The change from a new agro-ecosystem to an integration system for oil palm has a positive impact on productivity and some negative impacts that need to be scientifically proven, namely changes in biodiversity and the carbon cycle. This change needs to be analyzed to support the integration system between oil palm and cattle plantations in Indonesia. Therefore it is necessary to carry out exploration in the integration area of cattle oil to identify, measure and interpret the biodiversity of cover crop plants and the carbon cycle. The method used in this research is exploration which will be carried out in two stages, namely 1) determining the sampling location. 2) testing the type of cover crop vegetation, soil samples, and gas samples. Vegetation samples will be identified and analyzed for chemicals as well as estimation of their carrying capacity, Soil samples will be measured for carbon and other minerals. While gas samples taken at several locations in the area will be analyzed for their greenhouse gas content (methane, CO2 and N2O). The purpose of this study is to produce complete data on cover crop vegetation in oil palm plantations and their surroundings as well as data on carbon cycle measurements in the integration area of cattle oil. on grazing land (Grazing) and non-grazing land (Non Grazing).

Keywords: Integration of Cattle Palm Oil; Carbon & Nitrogen Dynamics; Cover crop plants

[9]

Motility of Spermatozoa of Local Rooster (*Gallus Domesticus*) on Lactate Ringer Thinner - Nira Palm (*Arenga pinnata* Merr)

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Abstract. This study aims to determine the motility of free-range chicken spermatozoa in the diluent Ringer lactate - sugar palm sap (Arenga pinnata Merr). The research was carried out using a Completely Randomized Design (CRD) method with 5 different treatments according to the dose of ringer lactate diluent (RL) and palm sap (NA) given. The dose for each treatment was P0 = 0.2 ml cement + 0.8 RL, P1 = 0.2 ml semen + 0.6 RL + 0.2 NA, P2 = 0.2 ml semen + 0.4 RL + 0.4 NA, P3 = 0.2 ml semen + 0.2 RL + 0 .6 NA and P4 = 0.2 ml cement + 0.8 Palm sap. Each treatment was repeated three times. Then all data were analyzed using ANOVA followed bytukey post-hoctest ($P < 0.05$). The results of this study showed a decrease in the motility of free-range chicken spermatozoa ($P<0.05$) in the Ringer lactate diluent - sugar palm sap. There was no significant effect on the level of spermatozoa motility between treatments P0, P1, and P3. The lowest motility level was found in treatment P4 at 11.79% where palm sap was used as the sole diluent. Thus, the RL-NA combination can be applied as an alternative ingredient for free-range chicken spermatozoa diluent. Further research related to cryopreservation is needed to see how long spermatozoa live in storage using RL-NA.

Keywords: Village Chicken, Spermatozoa, Lactated Ringer, Palm Sap, Motility

POLICY, SOCIOECONOMICS, EDUCATION, AND LAW

[1]

The New Environmental Paradigm Based on Demography Characteristic of Dayak Paramasan Tribe

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Abstract. The purpose of this research is to analyze the new environmental paradigm of the Dayak Paramasan tribe, South Kalimantan, Indonesia. The novelty and uniqueness of my study is that it is the first research conducted and published regarding the new environmental paradigm of the Paramasan Dayak tribe, which is one of the Dayak tribes on the island of Kalimantan. The data were collected using questionnaires distributed to a total of 300 respondents. They live on Paramasan District. The data collection was carried out from May 2023 to July 2023 and analyzed using Structural Equation Modeling (SEM). The results showed that there was a positive correlation between education, income and the number of children in the new environmental paradigm of the Paramasan Dayak tribe. The Dayak Paramasan's adoption of this new environmental paradigm highlights their commitment to balancing cultural heritage with modern ecological concerns, showcasing their ability to adapt and evolve in response to changing global dynamics. further research into the implementation and long-term effects of this paradigm shift could provide valuable insights for both indigenous communities and broader society in fostering environmentally conscious practices.

Keywords: Social Demography; NEP; Dayak Tribe; Local Wisdom; Environment

[2]

Economic and Environmental Viability of Purun Straws: A Cost-Benefit Analysis in Belitung District, Indonesia

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Abstract. Garnering international endorsement from Indonesia's Minister of Tourism and Creative Economy at forums like the United Nations General Assembly and the G20 Summit, Purun straws (*Lepironia articulata*) sourced from wetlands in Indonesia's Bangka Belitung have been identified as both sustainable and economically advantageous alternatives to conventional plastic straws. This study, executed within Belitung District, employs a comprehensive one-year financial analysis using Cost-Benefit Analysis (CBA) and Return on Investment (ROI) methodologies. It establishes the economic soundness of the initiative by reporting a CBA ratio of 1.55 and an annual ROI of 50.3%. Data collection involved both primary stakeholder interviews and a review of secondary academic literature. This paper advances recommendations for policy frameworks aimed at the sustainable proliferation of purun cultivation, emphasizing the integral role stakeholders play in this context. It culminates in a call for future research of a multidisciplinary nature to assess the enduring socio-environmental impacts of adopting purun straws.

Keywords : *Lepironia articulata*, eco-straw, Belitung, CBA, stakeholder.

[3]

The Estimated Impact of Carbon Tax Implementation to Indonesian Economy

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Abstract. The issue of climate change has become the center of attention discussed at every meeting on the environment, both by developed and developing countries, including Indonesia. The Climate Change Summit or Conference of Parties - The United Nations Framework Convention on Climate Change (COP-UNFCCC) is a very important milestone. Climate change is defined as a global warming phenomenon where there is an increase in greenhouse gases (GHG) in the atmosphere that continues from time to time. The causes come from various factors caused by human life activities. These factors include, namely; the effects of greenhouse gases, damage to the ozone layer, damage to forest function, use of Chloro Fluoro Carbon (CFC), and industrial exhaust gases, as well as various other factors, such as clearing and burning of agricultural land, use of fossil fuels, animal husbandry and so on. Based on the emission contributors, GHG emissions from the energy sector in 2019 were very dominant, namely 638,452 Gg CO2e. The largest categories of emissions contributors respectively include the energy producing industry (43.83%), transportation (24.64%), manufacturing and construction industry (21.46%), so as other sectors (4.13%). The trend towards dominance of the energy sector in producing GHG emissions continues. In 2020, the total emissions were 1,050,413 Gg CO2e with the contribution from the Energy sector was 55.62%, Industrial Process and Product Use was 5.44%, Agriculture was 9.40%, Forestry and Peat Fires was 17.46% and Waste was amounting to 12.07%. At the same time, Indonesia has the potential to control GHG emissions through the implementation of a carbon tax. Carbon tax in Indonesia is an effort to mitigate climate change and sustain economic growth. Carbon pricing has become an instrument that is relied upon and promoted in various forums, and its implementation continues to increase worldwide, including in Indonesia. Currently, Indonesia through Law no. 7 of 2021 has set a minimum carbon tax rate of IDR 30 per Kg CO2e which is planned to be effective in 2025. The implementation of the carbon tax that will be implemented is expected to have an impact on the economic conditions of society, especially in the form of changes in income distribution patterns and job opportunities. The energy sector appears to be the tax object that is most readily imposed compared to others to date. In line with this, the purpose of this research are as follows: 1) To estimate the value of the energy carbon tax in the agricultural sector and the potential impact of its implementation on the economy in Indonesia; 2) To estimate the value of the energy carbon tax across all economic sectors, both together and per sector group, and the potential impact of its implementation on the economy in Indonesia. The data analysis method used in this research is based on the research objectives, including: 1) descriptive analysis - quantitative; and 2) Input – Output analysis of the Miyazawa Model. In this IO Miyazawa Model, Households are divided into Rural Households and Urban Households where each of this is classified in ten groups based in income level. The result shows that there are not significant impact of carbon tax levies in the income class order both in Rural and Urban. The portion of impact on income due to carbon tax is right in order from the highest to the lowest income group consecutively both in rural and urban. Rural Household Class 1 (the lowest) bears 3.43% of total carbon tax amount imposed in rural while Rural Household Calss 10 (the highest) bears 27.33%. The same pattern also occurs in Urban where the lowest income class bears 2.46% of the total carbon tax imposed in urban while the highest bears 32.79%. However, when comparing the amount of tax to bear by each income group with its income level then the middle income classes are highly affected.

Keywords: global warming, carbon emission, energy Carbon tax, income class, Miyazawa input-output

[4]

Serious flooding in Pekalongan City: What are the government policies in tackling this problem?

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Abstract. In Indonesia, the rate of sea level rise is predicted to continue to increase. As a consequence, 115 small islands in Indonesia are threatened with sinking by 2100.This is exacerbated by the phenomenon of land subsidence that occurs in 112 coastal districts/cities in Indonesia. Among the highest decline occurred on the coast of Pekalongan City. The combination of sea level rise and land subsidence makes the tidal disaster unavoidable. This triggers the emergence of inundation that inhibits community activities and causes infrastructure damage so that flood prevention and mitigation strategies are needed. Various researches about tidal flooding have been done in Pekalongan City with various perspectives, such as using Geographic Information System/ GIS, disaster prevention strategy, social and economical vulnerability to tidal flooding, environmental services valuation, and land use change. This research analyzed the government policies on tidal flooding in Pekalongan City and its impact on the city flood. The research type is qualitative, using both primary and secondary data. Heads and staff of government offices are the main sources of the research, in an effort to analyze the existing policies on flood inundiation in Pekalongan City, especially in the North Pekalongan District as the study location.

Keywords: tidal flooding policy, flood inundiation, sea level rise, land subsidence

[5]

Legal Protection of Farmers Affected by Agricultural Land Conversion into Housing

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Abstract. This research aims to provide an overview of how the impact of the conversion of agricultural land into housing, after getting the picture, it will then be studied further how the juridical review of the impact caused by the land conversion through normative juridical methods with a statutory approach through literature study. The results of this research are expected to be input for interested parties, the government, the wider community and policy makers, especially in the field of law. The results illustrate that the conversion of agricultural land into residential areas has a significant impact, both directly and indirectly, on the farming community and farm laborers who live around the housing. These impacts include reduced quality and quantity of crop yields, changes in water quality due to household waste, loss of farm labor jobs, changes in community mindset about the importance of agricultural land, and overflow of agricultural land water resulting in flooding when it rains. Legal protection of farmers affected by the conversion of agricultural land into housing is to prioritize preventive legal protection, which allows local communities to express their opinions before issuing housing development permits. Compensation from developers also needs to be more clearly defined and closely monitored in accordance with Government Regulation No. 1/2011. In addition, the implementation of agricultural insurance needs to be considered to address the impact of flooding as a consequence of housing development, in line with Article 37 of Law No. 19 of 2013.

Keywords: Legal Protection, Farmer, Agricultural, Land Conversion, Housing

[6]

Fisheries Law Enforcement as A Conservation Effort Environment

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Abstract. As stipulated in Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia "The land, water and natural resources contained therein shall be under the control of the state and shall be used for the greatest prosperity of the people". In natural resource management, the state has a very large role to regulate the use of natural resources to realize the principle of sustainable development. To be able to realize sustainable development, especially the availability and adequacy of fish needs, the state regulates the management and utilization of aquatic resources, especially fisheries in Law Number 45 of 2009 concerning Amendments to Law Number 31 of 2004 concerning Fisheries. However, in practice there are still many people who do fishing without paying attention to environmental sustainability. This research is normative juridical research, library law research conducted by examining library materials or secondary data. This research uses a statute approach and a sociological approach. The Fisheries Act has strictly regulated prohibited acts that can cause damage to fisheries and the environment, as well as criminal penalties in the form of imprisonment and relatively heavy fines, so it is hoped that the community will obey it. To be able to enforce the Fisheries Law, a good rule of law is needed, public legal awareness in obeying the rule of law, legal culture or correct behavior in understanding the law, adequate facilities and infrastructure, and law enforcers who are honest, have integrity, are moral and professional, and are fair.

Keywords: Law Enforcement, Fisheries, Environment

[7]

Evaluating Waste Management Policy in Kotabaru Slums (Regulation No. 6/2019)

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Abstract. This article analyzes the effectiveness of implementing the Local Regulation Policy of Kotabaru Regency Number 6 Year 2019 regarding waste management, specifically focusing on waste management in the slum settlement environment. The research aims to evaluate how much this policy has successfully promoted sustainable waste management practices in the Rampa Village, North Pulau Laut District, Kotabaru Regency. The research methodology involves qualitative analysis with primary data collection through in-depth interviews with relevant stakeholders and on-site observations. The analysis results indicate that the success of implementing this policy is heavily dependent on the level of understanding and active involvement of the community in Rampa Village in waste management programs. The research also identifies several challenges that influence the policy's implementation, including limited resources and coordination among relevant institutions. Therefore, this article provides recommendations to improve resource allocation, enhance educational programs, and strengthen cross-sectoral collaboration to maximize the effectiveness of this policy in waste management within the slum settlement environment of Rampa Village. The findings of this research offer a significant contribution to the local government and relevant parties in improving the effectiveness of regulations about waste management in the slum settlement environment of Rampa Village, North Pulau Laut District, Kotabaru Regency.

Keywords: Policy, Local Regulation, Waste Management, Environment, Slum Settlements, Rampa Village, Kotabaru Regency

[8]

Behavioral Finance in Investment*: A Systematic Review*

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Abstract. Behavioural finance plays an important role in the field of finance. Behavioral finance refers to understanding how human behavior and psychological factors, including human emotions, affect financial decisions. The data used in this research is secondary data, which means data that is not directly provided to data collectors. This type of data comes from literature related to behavioral finance, such as books, journals, scientific articles, and websites. This research uses the systematic literature analysis (SLR) method. This research aims to increase the understanding of the factors that influence financial behavior in decision-making, identify trends regarding the review or study of financial behavior, and predict the type of research to come. It is expected that the findings of this research will provide new knowledge and perspectives on the current field of financial behavior studies. What contributions are needed at this time and may attract other researchers to study financial behavior in investment decision-making.

Keywords: Behavior Finance, Investment Decision, Systematic Literature Review

[9]

Unlocking the Potential: Exploring The Relationship Between Juvenile Offenders and Family Communication Patterns for Sustainable Rehabilitation in Lembaga Pembinaan Khusus Anak Martapura, Kalimantan Selatan

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Abstract. This research paper, conducted in the context of Lembaga Pembinaan Khusus Anak Martapura, Kalimantan Selatan, delves into the intricate dynamics surrounding the rehabilitation of juvenile offenders, with a specific focus on the role of family communication patterns. Juvenile delinquency poses a significant societal challenge, and understanding the factors that contribute to sustainable rehabilitation is of paramount importance. Employing a mixed-methods approach that combines qualitative interviews, surveys, and observational analysis, this study explores the multifaceted relationship between family communication patterns and the rehabilitation process of young offenders within the unique socio-cultural milieu of Martapura, Kalimantan Selatan. The research endeavors to unravel the influence of family communication on the attitudes, behaviors, and reintegration prospects of juvenile offenders. It examines the impact of open and supportive communication, as well as dysfunctional and adversarial communication patterns, within the familial context. Furthermore, this study contextualizes these findings within the specific urban environment of Martapura, Kalimantan Selatan. It investigates how the local socio-economic landscape, community resources, and the structure of the Lembaga Pembinaan Khusus Anak interact with family dynamics and communication patterns. The insights gleaned from this research aim to inform targeted interventions and policies tailored to the needs of juvenile offenders in this region, with the ultimate goal of fostering sustainable rehabilitation. By unlocking the potential within each young offender, we aspire to break the cycle of reoffending and create a more supportive and nurturing environment for their reintegration into society. This research contributes to the broader discourse on juvenile rehabilitation and offers practical guidance for stakeholders in Lembaga Pembinaan Khusus Anak Martapura and similar facilities worldwide.

Keywords: Juvenile Offenders, Family Communication Patterns, Sustainable Rehabilitation, Lembaga Pembinaan Khusus Anak Martapura.

[10]

The Influence of Banjar Cultural Environment on Leader Member Exchange and Organizational Citizenship Behavior (OCB) of Lecturer at PTS in Banjarmasin

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Abstract. The purpose of this study was to determine the effect of the Banjar cultural environment on leader-member exchange and organization citizenship behavior (OCB) of lecturers at private universities in Banjarmasin. The method in this study is a quantitative technique using the path analysis method to examine the direct and indirect effects of the variables of Banjar culture, leader-member exchange, and organization citizenship behavior. The population in this study were permanent lecturers at private universities, especially high schools in Banjarmasin, totaling 12 high schools. While the sample to be taken is 30% of the number of lecturers in the college, The results of this study will determine whether the Banjar cultural environment is influential in maintaining work relationships between superiors and subordinates and will shape the organizational citizenship behavior (OCB) of private university lecturers in Banjarmasin. Banjar cultural values that are applied and preserved in the higher education environment, especially in Banjarmasin, will build a more advanced higher education civilization in the region so that it will also maintain the value of Banjar culture itself.

Keywords : Banjar Culture, Leader Member Exchange, and Organization Citizenship Behavior.

[11]

Authority, Interpersonal Communication and Self-Control on the Performance of Principals of Bogor Regency State Middle Schools (Study of School Principal Performance)

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Abstract. The low level of professional development for school principals in improving the quality of education which is less focused requires further study, especially with regard to the Merdeka curriculum. This study used a quantitative approach with an explanatory survey method. Sampling used random cluster sampling, totaling 68 SMPN principals in Bogor Regency from January to September 2023. The instrument used a questionnaire with a Likert Scale. Methods of data analysis using path analysis with 3 substructures. The results showed that: 1) there is a positive direct effect of the variable of authority on performance, 2) there is a positive direct effect of the variable of communication ability on performance, 3) there is a positive direct effect of the variable of self-control on performance, 4) there is a positive direct effect of the variable of authority on control self, 5) there is a positive direct effect of the communication ability variable on self-control, 6) there is a positive direct effect of the authority variable on communication ability, 7) there is an indirect effect of authority on performance through self-control, 8) there is an indirect effect of communication ability on performance through self-control, 9) there is an indirect effect of authority on performance through communication skills. This research is important to use as a reference for the government and school principals in improving performance in strengthening the profile of Pancasila students.

Keywords: principal's performance, authority, communication, self-control, path analysis

[12]

Analysis of Factors that Influence Consumer Decisions in Using the Gojek Application with Go-Food Features in Banjarmasin City

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Abstract This study aims to analyze the factors of price, promotion, culture, individual and social influence simultaneously (together) on consumer decisions in using the Go-Food Feature Go-Jek application in the city of Banjarmasin. The research method is an explanatory research. The sample size was taken using the Slovin formula and the results were 100 respondents (rounded up to represent the total population). The sampling technique used the purposive sampling method. The purposive sampling method is a sampling technique with certain considerations. The analysis technique uses multiple linear regression analysis using SPSS 21.0 for windows. Based on the results of the research and analysis obtained, it can be concluded that the price, promotion, culture, individual, and social factors simultaneously (together) have a significant effect on consumer decisions in the use of the go-food feature go-food application in the city of Banjarmasin. The price factor partially has no significant effect on consumer decisions in using the go-food feature go-food application in the city of Banjarmasin. Promotion factor partially has no effect and significance on consumer decisions in using the go-food feature go-food application in the city of Banjarmasin. Cultural factors partially have no effect and significance on consumer decisions in using the go-food feature go-food application in the city of Banjarmasin. Individual factors partially have a significant effect on consumer decisions in using the go-food application feature of go-food in the city of Banjarmasin. Partial social factors have no significant effect on consumer decisions in the use of the go-food application feature go-food in the city of Banjarmasin.

Keywords : Price, Promotion, culture, individual, social and consumer decision

[13]

The Influence of Non Physical Work Environment and Quality of Work Life on Employee Performance (Study at Community Health Center/Puskesmas Banjarmasin Indah)

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Abstract. The purpose of this research is to investigate the effect of non-physical work environment and quality of work life on employee performance at Community Health Center/Puskemas Banjarmasin Indah. The research method is quantitative using partial least square structural equation modelling analysis with data analysis using Smart PLS 3.0 software. The study involved 30 respondents is a Community Health Center employee. The type of variable scale used is the ordinal scale. The rating scale for each statement uses a rating scale technique with a likert scale type. Offline questionnaires are distributed, the data analysis stage is the outer model test, namely the validity and reliability test and the inner model test, namely the hypothesis test or significance test. The independent variable of this research is nonphysical work environment and quality of work life. The dependent variable is employee performance variable. Offline questionnaires based on the results of research data analysis it was found that nonphysical work environment had a positive and significant effect on employee performance. Quality of work life had a positive and significant effect on employee performance.

Keywords : nonphysical work environment, quality of work life, employee performance.

[14]

The Role of the Financial Decentralization Ecosystem in Exchange Transformation in the Digital Era

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Abstract – The advancement of blockchain technology has made a significant contribution to the development of the digital financial ecosystem. One of the most prominent aspects is the emergence of Decentralized Finance (DeFi) and its pivotal role in transforming exchange platforms within the digital financial ecosystem. This journal describes the primary role of DeFi in reshaping our perception of exchanges, encompassing implications for security, safety, and technological innovation.

Keywords : Financial Decentralization, Exchange Transformation, Digital Era

[15]

Employee Performance Based on Leadership Style at PT Bank Kalteng

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Abstract. Leadership style has a significant influence on employee performance. This research aims to determine the relationship between leadership style and employee performance at PT Bank Kalteng, one of the regional banks in Indonesia. Phenomenological interviews were conducted with 10 employees from various divisions and levels to gain an in-depth understanding of their experiences with different leadership styles and their impact on their performance. Research findings show that the transformational leadership style is most effective in improving employee performance at PT Bank Kalteng. Transformational leaders inspire and motivate their employees to reach their full potential by providing clear vision and direction, setting challenging goals, and providing regular feedback and recognition. On the other hand, the transactional leadership style is less effective in improving employee performance. Transactional leaders focus on rewarding and punishing employees based on their performance, which can lead to a transactional mindset and lack of motivation. The laissez-faire leadership style is the least effective in improving employee performance. Laissez-faire leaders provide little or no guidance or support to their employees, which can lead to confusion and a lack of direction. The findings of this research have important implications for PT Bank Kalteng and other organizations. By implementing a transformational leadership style, managers can create a more positive and productive work environment, which can improve employee performance and organizational success.

Keywords : Leadership Style, Employee Performance, PT Bank Kalteng, Transformational Leadership, Phenomenological Interview

[16]

The Influence of the Non-Physical Work Environment on Work Spirit in South Kalimantan (Study Based on Gender, Sectors and Mix)

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Abstract. This research aims to analyze the influence of the non-physical work environment on work spirit in South Kalimantan on the bases of gender, sectors and mix. Indicators of the non-physical work environment and work spirit in all study bases were analyzed for their applicability. The influence is analyzed on three grounds, namely gender (men and women), public and private sectors and their combination. The power of the models in explaining effects was also compared. The sampling technique used is categorized as non-probability and uses convenience sampling to meet the base of the study, namely state civil servants (public) and oil palm plantation workers. The total sample size was 163. The gender basis of the study was 65.64% male and 34.36% female. The public and private sectors amount to 58.28% and 41.72% respectively. The analysis technique used is SEM PLS with the help of WarpPLS version 7 software. The applicative test of the indicators uses loading values and effect sizes. Test the effect using the p value (p-value). Test the ability between models using Adjusted R-Squared and Q-Squared. The research results show that the part of the work spirit indicator that receives less attention in the private sectors and gender (women) is the attractiveness of the job related to the vision and mission of the job and satisfaction with work conditions. The results of the influence test found that on all bases, the non-physical work environment had a significant positive effect on work spirit. The base model that is better at explaining the influence sequentially is gender (men), private sectors, mix, public sectors and gender (women). The limitation of this research is that the sample size is not balanced even though the PLS requirements have been met according to calculations. Then there are still many variables that influence enthusiasm that need to be considered, around 51.4% -65.8% are explained by other variables. However, this research has found cross-sectors and gender models and found differences in factors that apply to work spirit in both each separated and mix models.

Keywords: work spirit, non-physical work environment, Gender, Cross Sectors

[17]

The Influence of Service Quality on Inpatient Satisfaction at Bhayangkara Hospital Palangka Raya

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Abstract. This study aims to measure the level of influence of service quality on patient satisfaction and measure the level of influence of variables of physical evidence, reliability, responsiveness, assurance and empathy on the satisfaction of patients of Bhayangkara Hospital Palangkaraya. As an associative quantitative research, the research use 60 people as samples using incidental sampling as sampling technique. Data analysis technique used multiple linear regression analysis F test, t test and coefficient of determination. The results of this study show the quality of service consisting of physical evidence, reliability, responsiveness, assurance and empathy simultaneously and partially effect on the satisfaction of inpatients at Bhayangkara Hospital Palangka Raya. Research is included in the category of associative quantitative research, because this research views that reality/symptoms/phenomena can be classified, relatively fixed, concrete, observable, measurable and show causal symptoms (Sugiyono, 2010). Meanwhile, it is said to be associative because from the level of explanation this research tries to examine the relationship between two or more variables (Sugiyono, 2010).

Keywords : Service Quality, Physical Evidence, Reliability, Responsiveness, Assurance, Empathy, Patient Satisfaction

[18]

Transformational Leadership, Organizational Citizenship Behaviors for the Environment and Environmental Performance

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Abstract. This research aims to determine the influence of transformational leadership style and Organizational Citizenship Behavior for the Environment (OCB-E) on the Environmental Performance of work teams in Hijau Kemuning Tangerang Village and work team members are the research subjects. This research uses quantitative methods. In sampling, the researcher used a non-probability sampling technique, namely saturated sampling and obtained a sample of 21 work team members as respondents. Data collection was carried out by distributing questionnaires. The analysis used is the t test. Based on data analysis, it is said that transformational leadership style and Organizational Citizenship Behavior for the Environment (OCB-E) simultaneously have an influence on the environmental performance of work teams.

Keywords: Transformational Leadership Style, Organizational Citizenship Behavior for the Environment (OCB-E), Environmental Performance, Hijau Kemuning Tangerang Village

[19]

Legal Protection of Harvest Failure Farmers as Customers of People's Business Credit (Kredit Usaha Rakyat / KUR)

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Abstract. This research is about Legal Protection of Harvest Failure Farmers as Customers of People's Business Credit (Kredit Usaha Rakyat / KUR). By using a normative juridical method with a statutory approach through literature study, this research aims to provide an overview of the position and legal protection of farmers who fail to harvest in the People's Business Credit agreement, so that the results of this study are expected to be input for interested parties, government, the wider community and policy makers. The results of the study illustrate that the position of farmers who are included as parties in the People's Business Credit (KUR) agreement is legal and based on the law. The juridical implications that arise with the signing of the KUR agreement are that the parties are obliged to comply with it, because the agreement becomes law for both parties. The legal protection of failed harvest farmers who become KUR customers is to provide the rights of failed harvest farmers as customers and as consumers in several forms, namely: providing information related to the product KUR that is being promoted/run, and providing dispensation or relief in the payment of KUR deposits for farmers who fail to harvest as an application of the objectives of protecting and empowering farmers outlined in Law Number 19 of 2013 concerning Protection and Empowerment of Farmers, which is to participate in developing agricultural financing institutions that serve the interests of farm businesses.

Keywords: Legal Protection, Harvest Failure, Farmer, Customers, Credit

[20]

Antecedents and Consequences of the Employee Engagement in the Digital Era (A Review for General Gaps)

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Abstract. The research aims to review employee engagement studies in the digital era (2015-2020). Digital has been associated with the development of the term since 2016. Aspects of the study include the pattern of grand theory used, the design of the unit of analysis, the antecedents and consequences of the employee engagement, and the practice of methods and techniques used. The essence is creating future research gaps that need to be considered. The data is from ScienceDirect and Sage Open Journal 2015-2020. The criteria are peer-reviewed journals, relevant Keywordss, and causal research. Screening and finding themes are using rayyan.ai and thematic reading with NVivo 12 plus found 22 relevant journals from 853. The gap results in need for cross-management effect studies, broader environmental factors, and gender aspects. The limitation of the research lies in the lack of specificity in discussing the gaps, and the power of influence is not discussed. However, the Patterns and Issues found are relevant. Future research directions were also identified: the need for meta-analysis and more specific research on the gap pattern.

Keywords: employee engagement, review, antecedents, consequences, digital era

[21]

Analysis Need Empowerment Generation Young Care Environment

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Abstract. The condition experienced environment degradation and highlighting awareness environment among the generation young is not optimal, then need to involve model development generation in the retrieval process decision-related environment, with the hope will produce sustainable pro-environmental actions. Study this aim for know analysis need empowerment generation young care environment. Method analysis needs in a way descriptive categorized quantitative with use questionnaire. Results study show analysis need concluded into six items namely (1) empowerment generation young explain all indicator category tall except indicators 3,4, and 5 for participants, too explain only 2 indicators tall for teacher, with thereby can interpreted that indicator no simply originate from activity learning, (2) facilities education explain all indicator category tall for participants, too explain only 1 indicator tall for teacher, that is role teacher no related with facility education, (3) education environment explain part big indicator category high, except indicator 5 shares participants, too explain part big indicator category high, except indicators 4 and 5, meaning good participant nor teacher still role in increase education environment, (4) *Participatory Problem Solving* explained indicator balanced between category tall And category currently for participants, too explain part big indicator category high, except indicator 3, meaning good role teacher Still required For accompany participant in *Participatory Problem Solving*, (5) problems environment explain good for participant And teacher indicator balanced, that is role teacher understand problem environment that occurs, and (6) concern environment explain good for participant and teacher indicator balanced between category tall and category medium, meaning teacher still required guidance to participant for increase concern environment.

Keywords: Analysis needs, model development, empowerment, generation young, caring environment.

[22]

Community Responses to Senior Citizens and Intergenerational Relations in the Perspective of Civics Education

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Abstract. Reffering to the data from the 2020 Population Census, Indonesia is currently moving towards becoming an aged-population country, with the percentage of senior citizens reaching 9.78 percent. This data serves as a crucial indicator for Indonesia to promptly prepare itself for entering this phase. (The term "senior citizen" used in the title of this research is equivalent to the term "lansia" in Indonesian, which stands for elderly people). A study conducted by ORB-Media in 2018, encompassing surveys across 102 countries, demonstrated a correlation between positive perceptions (respectful attitudes) towards senior citizens and the well-being of the elderly responds to senior citizens and the intergenerational relations (between the old and the young) to uncover whether there is a generational gap, both within the work environment, families, and the broader community. The findings of this research can contribute to the advancement of scholarship, particularly in the realms of social community dynamics and governmental policies concerning senior citizens. This study used a qualitative methodology with a phenomenological approach. Data collection involved a mixed-method approach, encompassing surveys, interviews, and observations. Survey data is used to capture societal responses towards senior citizens. The research process commences with constructing a conceptual framework, formulating the research questions, sample selection, instrumentation, data collection, data analysis, and drawing conclusions.

Keywords: community response, senior citizen, intergenerational relations, civics education.

[23]

Green Chemistry Activities in School Level Chemistry Learning: Systematic Literature Review in the Last 10 Years

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Abstract. Emphasis on products and chemicals that are environmentally friendly and for health is the main goal of green chemistry. Green chemistry education in chemistry learning is a method of solving environmental problems that teaches students about sustainable development. In a learning model that has GC, it is hoped that students can build concepts into knowledge that can be entered into long-term memory so that learning outcomes improve. Systematic reviews are very important to carry out in literature studies to map research topics related to Green Chemistry in chemistry learning in the last ten years. at the high school level and opportunities for implementing Green Chemistry in chemistry learning at the high school level. The journal that publishes the most GCs in the field of education is the Journal of Chemical Education, followed by Chemistry Education Research and Practice and the Indonesian Science Education Journal. The fields of postgraduate education and e-learning had the lowest percentage of papers analyzed. Furthermore, the most trending GC topics are in environmental chemistry. Then, the most GC implementation was in laboratory activities in the last decade. A systematic literature review has revealed that GC is feasible to be applied in any field, including integration with other fields. In the GC presentation, at least ten thought patterns can be used that can be developed for students to gain meaningful learning experiences and encourage the development of various skills needed to prevent environmental pollution.

Keywords: Green Chemistry Activities, Chemistry Learning, School, Systematic Literature Review

[24]

Factors Associated with Narcotics Trafficking in Swamp Environment

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Abstract. Narcotics trafficking can result in serious health problems, such as addiction, overdose, and damaging psychological impacts. In addition, narcotics circulation can also trigger crime, damage social relations, and disrupt social stability. This phenomenon is a serious and complex problem that has a far-reaching negative impact on individuals, societies and states. Peoplewho live around swamps tend to have relatively higher rates of narcotics trafficking when compared to people living on land. This study aims to analyze between narcotic circulation factors and swamp environments. The method used is a qualitative method with a phenomenological approach in Palembang City and a literature review. The results show that narcotics trafficking is influenced by a number of complex factors. These factors include social, economic, cultural, policy, and environmental aspects. Social aspects include peer influence, social pressure, and social isolation that can influence a person to engage in narcotics trafficking. Economic aspects include the problem of unemployment, economic instability, and financial motivation to engage in narcotics trafficking. Cultural aspects include norms that support the use of narcotics and a misconception of narcotics. In addition, government policies in handling narcotics also affect the circulation of narcotics in the community. Environmental aspects include geographicalsolation, where large and hard-to-reach swampy areas can become safe places for the manufacture, storage, or trafficking of narcotics. Surveillance and limited accessibility because the swamp environment is in a remote environment so it is less supervised, and makes it difficult for law enforcement to patrol. Sociallivelihoods are limited becauseswamps often have minimal populations and limited access to educational programs. Lowknowledge and awareness about the dangers of narcotics due to the lack of anti-narcotics campaigns among residents of swampy areas can make them more vulnerable to narcotics circulation and abuse.

Keywords : social, economic, cultural, policy, government, swamp environment, narcotics trafficking.

[25]

Transformational Leadership in Developing Entrepreneurship Education Program in Islamic Boarding School

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Abstract. Islamic boarding schools have enormous potential to support the country's economy through entrepreneur education program. This study aims to describe and analyze the role of transformational leadership in developing an entrepreneurship education program at Islamic boarding school. This research implemented mixed-method with sequential exploratory design, where qualitative research is carried out in the first stage as the main data collection and quantitative research is carried out in the second stage as a complement or explanation based on the results of the first data obtained. This research was conducted in Al Ashriyyah Nurul Iman Islamic Boarding School that located in Parung, Bogor, West Java, Indonesia. The role of transformational leadership in developing entrepreneurship education programs includes: providing motivation, inspiring, providing direction, stimulating creativity and innovation, giving attention, and giving awards. The research shows that transformational leadership has a positive impact on the development of entrepreneurship programs in Islamic boarding schools. The implementation of transformational leadership has had the greatest influence on teachers' ideas, creativity and innovation.

Keywords: Transformational Leadership, Entrepreneurship, Education, Islamic Boarding School.

[26]

Credit Growth Strategy to Support Environmental Sustainability by South Kalimantan Regional Development Bank with SWOT Approach: Conference Series

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Abstract. Regional Development Banks (RDB/BPD) have a key role in encouraging regional economic growth while maintaining environmental sustainability. This study investigates credit growth strategies implemented by the South Kalimantan RDB, emphasizing SWOT analysis to understand how these strategies impact environmental sustainability. South Kalimantan RDB integrates green financing practices and value-based approaches in its credit growth strategy. The results of this SWOT analysis are used to formulate strategic recommendations that can help South Kalimantan RDB maximize its internal strengths, overcome weaknesses, take existing opportunities, and deal with threats that may arise. The strategy is to diversify the credit portfolio for green financing or for renewable energy. Develop digital-based products and services to reduce paper usage. Update the risk management policy to include environmental risks. The practical implications of these findings could help South Kalimantan RDB and similar institutions in increasing their contribution to environmental sustainability and sustainable regional development.

Keywords : Regional Development Bank, credit growth, SWOT analysis, environmental sustainability.

[27]

Priority Model for Tourism Development in Pariaman City

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Abstract. This research aims to develop tourism development priorities and marine tourism policy directions in Pariaman City. In determining the suitability of marine tourism land, ten indicators are used, namely; water brightness, beach type, beach depth, substrate, current speed, live coral cover, disaster proneness, and accessibility. To determine the tourism potential index using the AHP approach with four criteria, namely: government support, tourism industry, community support, and land availability. Next, to determine the direction of marine tourism development policy using ISM analysis. The research results from ten observation points showed that 2 observation locations were very suitable (S1) for marine tourism, 4 observation locations were in the appropriate category (S2), and the remaining 4 observation locations were in the marginally suitable category (S3). Based on the tourism development potential index, the three priority observation points are P5, P6, and P7. The results show that observation point 6 has the highest value, while observation point P2 has the lowest value. The policy direction strategy, which contains three sub-elements, is the priority policy direction in developing marine tourism in Pariaman City, namely: A6 (Attracting investors for marine tourism development); A5 (Increasing the frequency of tourist attractions); and A1 (Improving beach cleanliness).

Keywords: Maritime, Tourism, Land Suitability, Tourism Potential.

[28]

Bibliometric Analysis of Mapping Trend Ecopedagogy Research in Education

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Abstract. The purpose of this study is to examine the scientific articles about ecopedagogy in terms of bibliometric indicators to determine the mapping of ecopedagogy research trends in education and was conducted using a bibliometric approach, with 437 journal publications from Scopus. The data was sourced on a large scale for the last 10 years from 2013 to 2023 and narrowed to focus on ecopedagogy, education, and social science learning. Bibliometric analysis was conducted using VOSviewer software to visualize the network based on the literature data provided in the literature records specifically co-citation aanalysis, coupling analysis and co-word analysis The results showed that ecopedagogy continued to exist from 1983 to the present. Based on mapping co-citation, bibliographic coupling, and co-word analysis shows that ecopedagogy is related to education and the environment. Therefore, understanding the basic structure will help teachers and students thoroughly. There were certain limitations in conducting this study. First, the references obtained from Scopus for the last 10 years were below 500, affecting the mapping analysis. Second, the database employed consisted of all forms of publication, including journals, books, book chapters, conference proceedings, and reviews. The majority of bibliometrics were limited to journals, while others were omitted for fear of affecting the quality of the documents retrieved. After in-depth analysis, a comprehensive agenda was suggested for upcoming trends that significantly benefit academics and policymakers. In this context, this study evaluated and contributed to the field of education and the environment, especially in school learning.

Keywords: Ecopedagogy**,** Ecology**,** Pedagogy**,** Environmental education Teaching and learning

[29]

Financial experience of cryptocurrency investment decisions through overconfidence: Evidence from millennials in Banjarmasin

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Abstract. This study aims to investigate the effect of financial experience on cryptocurrency investment decisions of the millennial generation in the Banjarmasin City area, South Kalimantan Province, Indonesia. Overconfidence is also proposed as a mediator in revealing the relationship between financial experience and cryptocurrency investment decisions. Using a survey method with a quantitative approach, the sample was selected purposively from 100 millennial generation investors in Banjarmasin, born in 1981-1996, which is in accordance with the age range of the millennial generation. Data analysis using PLS-SEM with reflective model construct testing using SmartPLS version 3 application. The results of the study revealed that financial experience affects overconfidence and cryptocurrency investment decisions. While overconfidence has a mediating role in the relationship between the two. Nonetheless, because the existing literature is so scarce in dealing with millennial generation investors, our model can be used to identify the unique characteristics of millennial workers. The current study provides additional evidence on the financial experience, overconfidence, and cryptocurrency investment decisions of millennials in Indonesia, contributing to the growing international research on this generation. Future studies can compare the financial experience of the millennial generation with other Asian countries so that the level of difference in the character of the millennial generation is clearly illustrated.

Keywords : financial experience, overconfidence, investment decision, millennial generation, cryptocurrency.