

## TRACK 4 – ENVIRONMENTAL EDUCATION AND GOVERNANCE

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2.	Axioms and Ideologies: Rethinking the Experience of Philippine Agricultural Modernization	<p>Helen I. Perpetua, Ph.D.</p> <p>Mindanao State University-General Santos City, Philippines  <a href="mailto:kjmb110191@gmail.com">kjmb110191@gmail.com</a></p>
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5.	Eco-Governance: A Case of Sulu	<p>Calbi A. Asain, Ph.D.</p> <p>Mindanao State University - Sulu, Philippines  <a href="mailto:calbiasain_21@yahoo.com">*calbiasain_21@yahoo.com</a></p>
6.	Environment Info-Action: Analyzing Illocutionary Force in Online News Headlines on Climate Change	<p>AG Centenice S. Galvez*, Venus R. Parmisana, Elaine Jane Hambre, Cristine Grace Badilla and Eureyleen Casido</p> <p>Mindanao State University - Iligan Institute of Technology, Philippines  <a href="mailto:agcentenice.galvez@g.msuiit.edu.ph">*agcentenice.galvez@g.msuiit.edu.ph</a></p>
7.	Exploring the Role of Information and Communication Technologies to Support	<p>Sherwin E. Ona<sup>1</sup>, Rabby Q. Lavilles<sup>2</sup>, and Mia Amor C. Catindig<sup>2</sup></p>

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8.	Framing Philippine Mining Issues in e-Media: Critical Discourse Analysis of e-Newspaper Reports	Sheena Gem A. Harun, MAELS* and Nancy Q. Echavez, PhD  Mindanao State University - Iligan Institute of Technology, Philippines <a href="mailto:sheenagem.harun@g.msuiit.edu.ph">sheenagem.harun@g.msuiit.edu.ph</a>
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11.	Local Knowledge of the Fisherfolks, Co-management and the Cost of Rehabilitation of Mangroves in Tangub City, Philippines	Wilson C. Nabua* <sup>1</sup> , Sulpecia Ponce <sup>2</sup> , and Myrma Mendoza <sup>2</sup>  <sup>1</sup> Northwestern Mindanao State College of Science and Technology, Philippines <sup>2</sup> Mindanao State University - Iligan Institute of Technology, Philippines <a href="mailto:*wilson.nabua@g.msuiit.edu.ph">*wilson.nabua@g.msuiit.edu.ph</a>
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26.	Valuation of Mangrove Ecosystem: A Scoping Review	Wilson Nabua* <sup>1</sup> , Cenie Malabanan <sup>2</sup> , and Adrian Galido <sup>2</sup>  <sup>1</sup> Northwestern Mindanao State College of Science and Technology, Cagayan de Oro City, Philippines <sup>2</sup> Mindanao State University-Iligan Institute of Technology, Iligan City, Philippines <a href="mailto:*wilson.nabua@g.msuiit.edu.ph">*wilson.nabua@g.msuiit.edu.ph</a>

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# **ABSTRACTS**

## ATTRIBUTIONS TO MAIN CROP PLANTED BY FARMERS IN REGION XII

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Socio-economic and farm management factors influence the decisions and practices made by farmers which in turn affect the sustainability of their crop production system. This study was conducted to assess different factors attributed to the choice of the main crop planted by farmers in Region XII. The study involved 217 farmers of Region XII who were selected by purposive sampling in collaboration with the Municipal Agriculturists and barangays, and interviewed. Data analyses included descriptive statistics and multiple regression. Most of the farmers are female (58%), already married and matured as farmers. Many reached secondary level and do not have access to post-secondary education due to financial constraints. More so, crops planted by farmers are mostly corn (37%) and rice (31%). Socio-economic characteristics of farmers do not influence the choice of main crop planted by farmers in the region. Meanwhile, farm management characteristics such as farm income, number of years in farming the main crop, topography of land and water source are statistically significant ( $p < 0.05$ ). Most of the farmers are still poor only earning less than Php10,000 per cropping of their main crop. Hence, farmers should utilize their lands by practicing multiple cropping including planting cash crops to ensure additional income and increase farm productivity.

**Keywords:** *Crop Planted, Farmers, Attributions, Socio-economic Study*

# AXIOMS AND IDEOLOGIES: RETHINKING THE EXPERIENCE OF PHILIPPINE AGRICULTURAL MODERNIZATION

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This study was conducted to evaluate the effect of different variables on the contribution of agriculture to the Gross Domestic Product (GDP). The variables are physical connectivity in terms of infrastructure on roads, bridges, seaport, airport and electrification; innovation and technology in terms of research and extension, irrigation and human development; and land distribution (CARP), production subsidy, credit, human capital and productivity of labor. A 15-year historical data were gathered from the Bureau of Statistics, Department of Budget and Management, Department of Public Works and Highways, National Irrigation Administration, Department of Agrarian Reform, Department of Energy and the Philippine Institute for Development Studies. The data were analyzed using descriptive statistics, correlation analysis and Partial Least Square Regression analysis. Results show that only investments on human capital and electrification have increasing trends while investments in most of the variables have fluctuating trends. Correlation analysis shows the strong influence of the different variables. The top 5 factors are productivity of labor (0.992), credit (0.909), production subsidy (0.624), seaport (0.549) and bridges (0.530). From the results, an optimum model was developed. Contribution of agriculture to GDP =  $3.5 + 220 * \text{Roads} - 468.30 * \text{Bridges} + 513.52 * \text{Applied and Basic Research Budget} + 136.32 * \text{Extension Budget} + 2.47 * \text{Land Distribution CARP} + 625.23 * \text{Irrigated Area} - 121.67 * \text{Barangays with electricity} + 5.2 * \text{Airport} + 120.74 * \text{Production subsidy} + 23.74 * \text{Credit} + 30.34 * \text{Human Development Budget} + 345.84 * \text{Human Capital}$ . With the above results, it is highly recommended that budget for the different variables should be increased to affect growth in agriculture and eventually modernization in agriculture.

**Keywords:** *Agriculture Modernization, Gross Domestic Product*



# CLIMATE CHANGE ADAPTIVE STRATEGIES OF LAKESHORE COMMUNITIES OF LAKE LANAOS, SOUTHERN PHILIPPINES: IMPLICATIONS ON DISASTER GOVERNANCE

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Climate change is a global concern affecting communities of different landscapes. Lake Lanao, which is one of the ancient lakes of the world, is a valuable resource that sustains the socio-economic, cultural and ecological survival of the Meranaws and the population of the Mindanao region. This study examines the strategies employed by lake-dwelling Meranaws to adapt to the effects of climate change (specifically floods and droughts) which have become more intense in the current years. Employing a sequential explanatory approach where a survey of 500 respondents and 16 key informants were conducted, this study was undertaken in five communities in Lanao del Sur which are located near the lake, namely: Marawi City, and the four municipalities of Balindong, Ganassi, Tamparan and Saguiaran. Findings indicate that their experiences of severe flooding have become more frequent since 2000 and droughts have forced them to resort to food substitution in order to survive. Although humanitarian assistance, government and family support systems (*katitinabanga*) are strong during natural disasters like flood, institutional mechanisms that enhance the disaster resilience of communities are still weak. Dam regulation caused by the operation of hydroelectric plant exacerbated the disaster vulnerability of the flood-prone lakeside communities. The results have implications on disaster governance that would substantially increase the adaptive capacities of communities to address the issues on climate change.

**Keywords:** *Climate Change, Adaptive Strategies, Flood, Drought, Disaster*

# COMMUNAL ENVIRONMENTAL PROTECTION OF NUSA ISLAND, LAKE LANAOS, PHILIPPINES

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Lake Lanao was a major concern during the Marawi siege. Nusa Island is a small isolated Island within Lake Lanao River Basin, which is a barangay located in Balindong, Lanao del Sur, Philippines. Local residents nearby frequent the Island for family fun. Inspired by United Nation's declaration on some sacred places and other related studies on Indigenous People's way of preserving the environment, the paper explores Mëranaw indigenous way of preserving the environment. With the Bangsamoro Organic Law, the need to initiate policies to preserve the lake and its resources dictates the exploration of the Island. Our assessments revealed that local residents, who are dependent on the resources available, practices environmental protection in the community based on Islamic principles, taboos, traditions and beliefs. The belief that the Island is a sacred place of their ancestors in effect protects the Island. Preservation of the lake and Nusa Island are noted based on oral narratives which were further validated by local government officials and residents of Wato, Balindong.

**Keywords:** *Nusa Island, Balindong, Lanao del Sur, Lake Lanao*

## ECO-GOVERNANCE: A CASE OF SULU

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Geographically, historically, and culturally, Sulu which is commonly referred to as the “land of the brave,” has caught the attention of both Filipino and foreign researchers, scholars, and adventurers and for many good reasons: 1. It is an Islamic territory in the only Christian country in Asia; 2. It is where the Sultanate, the first political institution in the Philippines, took solid ground; 3. It is where the fight for freedom from foreign domination was waged the longest, the hardest, and the fiercest; 4. It is where Islam—a major universal religion-- got introduced and propagated to other parts of the Philippines; and 5. It is where the first codification of the *Shari’ah* known as the *Diwan* occurred—a contribution to the Filipino legal system. The following recommendations are offered to help solve Sulu’s ecological and forestry concerns: 1. The government must address rising poverty and unemployment with sustainable mechanisms; 2. Government authorities mandated to protect ecology and forestry should intensify their campaign against ecology and forestry degradation in Sulu; 3. Strict implementation of Presidential Decree No. 705 or the Revised Forestry Code of the Philippines should be enforced; 4. The role of Islam in environmental protection and preservation should be emphasized in the madrasah and should be taught in academic institutions in Sulu; 5. The necessity for family planning must also be inculcated in the minds of Tausug families to arrest the fast-rising population in Sulu; and 6. The protracted armed conflict and all forms of lawlessness must end.

**Keywords:** *Ecology, Governance, Forestry, Environment, Degradation or Deterioration, Conservation or Protection*

# ENVIRONMENT INFO-ACTION: ANALYZING ILLOCUTIONARY FORCE IN ONLINE NEWS HEADLINES ON CLIMATE CHANGE

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Several studies on climate change provide insights on its effects and causes. Some have shaped the sociocultural context of environmental change, influenced policymaking and informed public *understanding to considerable degrees. Implications of climate change are not always linked to climatic conditions but also to human and social dimensions. How do climate change communication reports portray voices and actors of climate change? This paper tried to answer the question by analyzing online news headlines, a platform that plays substantial role to the readers' processing of information and which impacts their attitudes and actions toward climate change. Using a descriptive research design, this study focused on decoding online news headlines on climate change through the lens of speech acts. It aimed to categorize the speech acts of the four online news sites (Philippine Daily Inquirer, Business Word, Manila Bulletin and GMA News) based on Searle's categories of Illocutionary Acts and to find the predominant category. Initial findings revealed that the *Assertive* and *Directive* types of speech acts were predominant. *Assertives*, total of 63%, functioned to report facts, recount statements and describe incidences. *Directives*, total of 35%, served to warn the people of the intermittent effects of climate change and urged them to take actions. The study recommends that publishing sites, writers and editors should be aware that the use of *Directive* illocutionary force is more effective than *Assertive*, *Commissive* and other types. This can open further exploration on attaining productive news headlines such that climate change is given serious attention and people take real actions.*

**Keywords:** *Climate change, Online news, Online News Headlines, Deconstructing*

# EXPLORING THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES TO SUPPORT AND SUSTAIN COMMUNITY-BASED DISASTER PREPAREDNESS PRACTICES

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In response to natural disasters, communities living along hazard and vulnerable areas developed practices that enabled them to cope during disasters. Utilizing the qualitative descriptive approach, this study explores the practices of communities living along the river by comparing the shared experiences of the community in retrospective to a disaster. We then traced the effects of a major disaster and identify how information gaps illustrate a case of information habituation considering the temporal dimension of the disaster events and practices. We found that the major themes of the practices include awareness campaign, capacity building and preparation, and vulnerability and threat assessment. By comparing the practices in response to a disaster in a five-year observation and key informant interviews, we identified information gaps that can be addressed by the opportunities afforded by information and communications technologies (ICT). In addition, this paper emphasizes how ICT can support and sustain relevant practices to address habituation. Anchoring in the community practices enabled by a bottom-up approach, it is expected that the framework developed in this study will assist practitioners to integrate ICT use to sustain good community disaster preparedness practices.

**Keywords:** *ICT for Disasters, Community-Based Practices, Disaster Preparedness*

# FRAMING PHILIPPINE MINING ISSUE IN E-MEDIA: CRITICAL DISCOURSE ANALYSIS OF E-NEWSPAPER REPORTS

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One of the pressing issues that confronts mining industry in the Philippines during the administration of former DENR Secretary Gina Lopez, as posted in e-newspapers and shared in social media, is the closure of many Large-Scale mining firms due to environmental violations. This study assesses the leads and headlines of the purposively selected thirty-nine (39) mining news reports of mainstream (e-INQUIRER) and non-mainstream (e-MindaNews) e-newspapers to discover how mining issues are framed; and to further analyze how environmental issues on mining are presented, whose voices are promoted, and what ideologies are embedded. Two theories are combined to critically examine the e-news reports: Framing Theory and Critical Discourse Analysis. To provide rich and well-grounded descriptions and explanations, the study utilizes Interpretive Qualitative Design with Quantitative support. The findings of the study reveal that there are four frames found to be newsworthy to report regarding the closure of mines— Anti-Mining, Pro-Anti-Mining, Pro-Mining, Anti-Anti-Mining. Moreover, most of the Anti-Mining (23%) and Pro-Anti-Mining (15%) frames highlight the green advocates' environmental ideology (25.4%), which promotes closure of mining to save the environment from getting worst. Furthermore, most of the Pro-Mining (31%) and Anti-Anti-Mining (31%) frames amplify the capitalist's Socio-economic (28.52%) and Political ideologies (33.48%)— putting the needs of the present generation to survive, and highlighting the power of the government and mining industry over Lopez's allegations. Notably, the corpora lack environmental pro-active reports, as the news articles focused on presenting the negative socio-economic impact of mine closure instead of showcasing the positive impact of closing irresponsible mining operations to the society and the environment. Hence, unless the media is freed from the influence of capitalist perspective, it can be surmised that majority of the news reports concerning environmental problems on mining will be outnumbered and overpowered by the idea that mining is necessary for many Filipinos to survive.

**Keywords:** *CDA, e-news, Frames, Ideologies, Philippine Mining Issues*

# HISTORY AND PROSPECTS OF HOMEOPATHY IN NORTHERN MINDANAO: IMPLICATIONS TO SUSTAINABLE HEALTH EDUCATION

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Economic well-being founded on the appropriate harnessing of natural resources and using it to sustain the health and well-being of people is indeed one of the keys towards a Sustainable Development. Today, people in Mindanao are in a propitious period in history due to the copious availability of various modalities in the pursuit of finding answers to their health needs. It is then important to know that there is such a modality called Biological Homeopathic Medical health service available in the Northern part of Mindanao, which can be one of the choices of people for a more Sustainable Health. Unfortunately, most people avail of it only when nothing seemed to work under the conventional medicine. “*Similia, similibus curentor*”, this is the basic principle of Homeopathic Approach to healing. Like cure like. It simply means that a remedy which produces effects on a healthy body can likewise cure a sick person having the same symptoms. And yes, it is an alternative medicine but very much a scientific and well proven medical approach of over two hundred years of practice, now well spread from Europe to the Americas, Asia and the Philippines. Moving on from Classical Homeopathy, it has now integrated Homotoxicology and Biomedicine in the art and science of healing. Homeopathic medicines come from plants, minerals and animals at its nearest state made through dilution and succussion to achieve a potent state. Patients who have embraced it and committed themselves to it have found remarkable healing, wherefore conventional treatment have given up or have not been efficacious in their case. I love Homeopathy and I love the environment is one important slogan of those who embrace homeopathic treatment. For homeopathic treatment is indeed rediscovering the healing power of nature and reconnecting the body and mind with the natural environment.

**Keywords:** *Natural Environment, Homeopathy, Homotoxicology and Biomedicine*

# HOME PRACTICES ON PROPER WASTE DISPOSAL AMONG SENIOR HIGH SCHOOL STUDENTS OF MAIGO NATIONAL HIGH SCHOOL

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Waste disposal is one of the major environmental problems. Proper waste disposal programs and policies have been institutionalized especially in the schools and homes. The law educates sons and daughters on the basics of proper waste disposal. Hence, the study determined the significant relationship between the profile of the senior high school students and their home practices on proper waste disposal in terms of segregation, reduction, reusing, recycling and composting. A descriptive method was employed with 50 systematically- sampled students enrolled in Maigo National High School. Questionnaires were used to obtain information on their gender, parents' educational attainments, monthly family income and their home practices on proper waste disposal. Chi-square test was used to analyze and interpret the data. Results revealed that students are predominantly females, both parents attained tertiary education with low family income; exercise highly desirable home practices in segregation and reduction, recycling and composting; and desirable practices in reusing. Gender influences waste disposal practices particularly on segregation and reduction, not in reusing, recycling and composting. However, parents' educational attainment and family income did not affect the home practices. It is recommended that students, regardless of gender, should maintain appreciable level of segregation practices on proper waste disposal by participating in seminars and orientations in the school and community.

**Keywords:** *Home Practices, Proper Waste Disposal, Segregation, Recycling, Composting*



# LOCAL KNOWLEDGE OF THE FISHERFOLKS, CO-MANAGEMENT AND THE COST OF REHABILITATION OF MANGROVES IN TANGUB CITY, PHILIPPINES

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The co-management of mangrove ecosystem is a shared activity to all stakeholders. This study aimed to assess the local knowledge of the fisherfolks, the partnership of the DENR and LGU in the co-management and the cost of rehabilitation incurred by the said agencies on the mangroves in Tangub City. Both quantitative and qualitative analyses were employed in this study. There were 226 respondents who are fisherfolks or their wives from the 12 coastal barangays in Tangub City. Key Informant Interviews were conducted to the barangay officials, old residents and some selected DENR personnel. Secondary data were taken from the DENR and the CLUP of the LGU. Frequency distribution, arithmetic mean, regression and Pearson R correlation were employed in the study. The results revealed that the common term for mangroves was “Katunggan” derived from the term “tungog” (*Ceriops tagal*). Mangrove areas were utilized by the fisherfolks as fishing grounds, as residential areas adjacent to the mangrove forest, as a source of firewood and housing materials, and as rest areas. At least 16 important mangrove species were identified by the respondents that are found in the mangrove areas. Seventy percent fisherfolks believed that the mangroves are publicly owned and are a common resource. Nevertheless, management of mangrove is a shared activity by the government agencies concerned and the people. The cost of rehabilitation of mangrove was P13,500 per hectare. However, the survival rate of planting was very low with only 29%.

**Keywords:** *Local Knowledge, Co-Management, Mangrove Ecosystem, Panguil Bay, Tangub City*

## LOCAL KNOWLEDGE ON DISASTER AND FLOOD RESILIENCE OF AN URBAN BARANGAY IN CAGAYAN DE ORO CITY

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While the Sendai Framework states that various forms of risks to economy, infrastructure, environment and population can be reduced through strengthening and enhancing community resilience, different tools are used to determine local knowledge and resiliency. These tools are modified in other locales. Local knowledge and resiliency of a particular urban setting contributes to better implementation of policies. Thus, with the flood disasters that happened in Cagayan de Oro City since 2011, this study assessed the local knowledge on disaster and the flood resilience of an urban community. Data were gathered through personal administration of survey questionnaires among one hundred three (103) respondents chosen through purposive sampling and the main criteria were being survivors of Typhoon Sendong and residents of Barangay 17. Key informant interviews were also done with the Barangay Captain and other officials. Collected data were processed, analyzed and interpreted using descriptive statistics and thematic-approach for the qualitative data. Based on the findings, local knowledge on disasters is consistent with common knowledge in urban communities in terms of signs and rituals. Signs are on the appearance of the sky, the wind, and the behavior of animals. However, most rely on news on radio, television and cellphones. Barangay 17 is slightly aware on disasters but is prepared if ever typhoons arrive. Geophysical condition, socio-economic status and issues arising from the experiences of the survivors contribute to resiliency of the community. Recommendation is towards addressing future research and policy. Practical uses are on addressing political differences and education of the households on climate change and relevant information.

**Keywords:** *Local Knowledge, Resiliency, Urban community, Climate Change, Disaster*

# MANGROVE RESOURCE UTILIZATION AND CONSERVATION PRACTICES IN BRGY. LA UNION, CABADBARAN CITY, AGUSAN DEL NORTE: IMPLICATION ON SUSTAINABLE RESOURCE MANAGEMENT (SRM)

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Throughout the extensive coastline of Cabadbaran City, mangroves represent a rich and valuable forest ecosystem. Brgy. La Union is the biggest barangay in the city of Cabadbaran which harbors abundant mangrove resources requiring protection, conservation and management by the city and the national government. This study aims to determine the local practices on mangrove resource utilization and its impacts on the residents and the conservation initiatives of the stakeholders. Using a triangulation approach employing survey and in-depth interview techniques to elicit data among 100 randomly selected research participants, the findings show that the mangroves serve as habitats of a variety of seashells and fish species. It also provides a lot of ecological services to the communities: firewood, food, livelihood and environmental protection. The respondents are fully aware that the mangroves serve as buffer zones against storm surge, strong waves, tidal currents and typhoons. Various stakeholders like the local government unit (LGU), non-governmental organizations (NGOs) and the academe brought interventions in the management and protection of these mangroves. However, the monitoring of these initiatives are not conducted on regular basis and are generally perceived by the respondents as poor. These results have implications on the ecological integrity of the mangroves in light of the increasing population pressure, weak policy support and coastal resource governance in Cabadbaran.

**Keywords:** *Mangrove, utilization, conservation, sustainability, Sustainable Resource Management (SRM)*

# NATURE-ENVIRONMENT CONSCIOUSNESS AND EDUCATION IN TERMS OF MORAL PHILOSOPHY

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One of the most controversial issues in the world of thought, is the relationship between man and nature. Considering the education of values, human being, as a part of nature, has a great importance in this respect in terms of perception of nature and environment. Some of the environmental problems have come out as a result of bad feelings in the ethics such as greed, jealousy, dissatisfaction, indifference, irresponsibility and laziness. With the development of technology, problems have increased even more day by day. Although scientific, social, religious, moral, artistic, political and legal studies have been carried out at the point of environmental and nature consciousness, the desired results have not been obtained completely. In fact, the development of moral elements such as conscience, self-sacrifice, and justice related to environmental education is started first in the family. The next phase takes place either by original or by non-formal education, and perceptions, truths, and mistakes are formed in these settings. But in this process, applicability, continuity and volunteering are essential. The moral principles in belief of İslam, such as blessings, beliefs, entrustments, power of attorney, meaning of creation and existence, unity, mutual communication, balance, compassion, love, servitude (ubudiyet), holiness (kudsiyet), which are expressed in relation to environment, have important functions in regard to understanding and solving the issue. In this study, human and nature relations will be given in the direction of these principles and it will be evaluated in terms of existence, knowledge and morality.

**Keywords:** *Nature, Human, Environment, Morality, Education*

# **POTENTIALS AND PROSPECTS OF DEVELOPMENT OF A COMMUNITY-BASED AGRO-ECOTOURISM IN BARANGAY DIGKILA-AN, ILIGAN CITY: AN ASSESSMENT**

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This paper assesses the agro-ecotourism potentials and prospects of Barangay Bonbonon by examining some of its environmental elements, agro-elements, market viability and community people's skills, capability and cooperation for biodiversity and environmental protection. Environmental elements include physical landscape, existence of natural resources like caves, waterfalls, agro-forestry and indigenous farm products. Farm to market road, potential market of agro-ecotourism products and services are also determined. Skills and capability of community residents are also assessed for self-management of an agro-ecotourism development of their own barangay. The unique feature of this assessment compared to existing ecotourism projects is its concern on developing endemic natural resource by the local people themselves without any import of products, structures and skills from the outside. Sample activities are presented to enhance the natural endemic potentials of Barangay Bonbonon for an agro-ecotourism development. The study made use of Participatory Resource Appraisal (PRA) Focus Group Discussion (FGD) for the environmental elements and market viability; and skills and capability audit among the community representatives in determining their potentials in managing this proposed project. Results reveal that Barangay Bonbonon has a considerable degree of potential for agro-ecotourism development. Collaborative policy making in enhancing community-based agro-ecotourism is also highlighted in this study to achieve sustainability: environmental sustainability, social sustainability and economic sustainability.

**Keywords:** *Agro-ecotourism, Community Based Ecotourism, Community Participation, Ecotourism Development, Sustainable Development*

# PRESENTATION OF ENVIRONMENTAL PROBLEMS ON THE NEWS IN TURKISH TV CHANNEL

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News is one of the most important media which constitutes a relationship between the audience and the world. The first function of news gives information about issues. It also enlightens people about current affairs. Moreover, news is where most of the people get information about environmental problems such as famine, flood, forest fire, animal abuse, extinct animal, mine accident, and mine exploration. This news can be of help to influence people's mind. In addition, news can create awareness about saving the world. For these reasons, this paper explored presentation of environmental problems on the news. Will the news create awareness about environmental problems? This paper begins with introducing the issue in general terms, and outlines the news and environmental problems. Then the paper continues to explain the effects of the news on people's environmental awareness. The next part of the paper deals with the extent of environmental problems. Then there is a section that deals with environmental news broadcasted in Turkey. In this paper, the visual content analysis method was used to analyze the sample news which are broadcasted on prime time (19:00-20:00) on ATV and FOX TV. Results show that news plays a key role in social, economic, cultural and environmental areas. Hence, news creates consciousness on environmental problems, and people can start to move in saving the world.

**Keywords:** *News, Environmental Problems, TV Channels*

## REVENUES FROM ECOTOURISM ACTIVITIES IN THE WORLD

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Ecotourism involves travelling to natural and protected areas or national parks and benefiting local communities while conserving the environment. Although there are unintended negative impacts, like carbon footprint of air travel or the more popular a destination becomes resulting the more negative impacts on environment and community. To reduce these negative impacts on environment and the community, there are different organizations (UNEP, UNWTO, TIES) which works together on certification programs for sustainable ecotourism. Globally ecotourism activities generate around \$80 billion in revenues and makes up %5-7 in overall tourism market. Today, most of the countries include ecotourism strategies inside their national tourism plans and develop projects to improve their potentials. Australia, which is one of the most important ecotourism destinations in the world, prepared its first ecotourism plan in 1990s. Australia's income from ecotourism activities after this planning period was over \$10 billion and 130 000 people were employed. In the US the most visited ecotourism areas employ more than 300 000 people and generates around \$30 billion. In Peru, number of ecotourist attracted by natural areas and bird watching increased 250% in 2000s. Costa Rica became the most visited ecotourism destinations due to the implementation of sustainable ecotourism programs. In Turkey, we have a great potential and fabulous natural and protected areas, but our tourism revenues are mostly generated from coastal areas. Turkey's ecotourism areas need more publicity and an integrated ecotourism plan to national tourism plans. Our country has the 6th place in the number of visitors while 12th place in tourism income in the world.

**Keywords:** *Ecotourism Activities, World, Revenues, Turkey, Sustainability*

**SAFEGUARDING ENVIRONMENT:  
LOCALIZED EFFORTS IN MAGUINDANAO, ARMM, PHILIPPINES**

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Affirmed by emerging international trends, “good governance” is one of the keys towards development (Onichackwe, 2016), which necessarily includes ensuring the sustainability of the environment. The Department of Interior and Local Government’s (DILG) 2014 Seal of Good Local Governance (SGLG) recognizes the performance of local government units that directly benefit the community. Explicitly as one of the essential components of the SGLG, it prompted local government units (LGUs) to strengthen their efforts, thereby realizing mechanisms to pursue environmental protection. As a descriptive quantitative-qualitative paper, this study seeks to examine the governance assessment results in the area of environmental management, and it also explores the practices in the protection of the environment of each of the two locales, namely: the LGUs of Parang and Upi in Maguindanao, ARMM. These LGUs are consistent awardees of the SGLG. Hence, their successful experiences and insights are of greater importance. Results showed among others, the compliance of the said LGUs with the requirements of a ten-year solid waste management plan and implementation of solid waste segregation. Moreover, local mechanisms such as “Parang Magandanow” and “Rubber for Peace,” crafting of ordinances and providing infrastructure for environmental protection are noteworthy. Each of the LGUs exerts substantial efforts in preserving the environment that other LGUs in the province can emulate and practice, thereby promoting good governance for development.

**Keywords:** *Safeguarding Environment, Good Governance, Development, SGLG, DILG*



# SHIFT FROM TRADITIONAL UPLAND FARMING TO URBAN BLUE COLLAR JOB AMONG *IGOROTS* IN MOUNTAIN PROVINCE: IMPLICATIONS OF URBAN MIGRATION IMPACT TO SUSTAINABILITY

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The study tried to determine and assess the impact of intermittent urban migration of *Igorot* men farmers from their traditional upland farming community, Barangay Bayyo, Bontoc, Mountain Province. Moreover, this scholarly work used the case study research method with the young and elderly *Igorot* women and elderly *Igorot* men farmers as informants of the study. Due to the migration of male *Igorot* farmers, traditional agricultural practices started to dwindle down while modern farming practices started to increase. Traditional resource conservation practices remain evident; however, modern practices brought by migration have posed some threats to the conservation of resources. Both human and natural capitals have also been affected by migration, both positively and negatively. Most farmers are already using both the traditional and modern farming practices. Farm productions and family income of those left at the village have increased, while women have expanded their roles in the community. With the increase in family income, family well-being has improved. The sustainability of the indigenous farming and resource conservation practices is threatened as some social community practices start to diminish. Findings on social, economic, environmental and institutional dimensions of sustainability have shown that with the continuous intermittent urban migration of male farmers, the sustainable development of Bayyo as an upland farming community is likely to remain a vision. Based on identified issues, the study proposes an integrated sustainable development framework plan for Bayyo as an upland farming community. The framework uses four sustainable strategies that would help Bayyo resolve the issues brought about migration.

**Keywords:** *Traditional Upland Farming, Traditional Resource Conservation, Sustainability of Indigenous Farming, Intermittent Urban Migration*

# SHOWING ENVIRONMENTAL CONCERN AND SOCIAL RESPONSIBILITY THROUGH "NO TO PLASTIC WASTES" CAMPAIGN: A PROJECT-BASED LEARNING APPROACH IN JUNIOR HIGH SCHOOL

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In response and in support to the battle cry for 'pro-environment and pro-life' advocacies, this project dubbed: *"I Love Iligan, I Love Iligan, I Say No to Plastic Wastes"* focuses on the communication and literacy, health and environment awareness, social responsibility and scientific skills. The research questions were: (1) What are the substances/components that are present in plastic?"; (2) "What effects does the use of plastic give to the people and to the environment?"; and (3) What are the ways to inform the entire school community about the said effects of plastic use?" Working as teams, student respondents conducted a research by reading data from published surveys and studies conducted, interview with experts in the field, and from the facts from offline and online references on plastic-its substances/components, effects to the environment and to living organisms especially the human beings. Using rubrics to rubrics to guide them on the key multimedia presentation elements, students organized the gathered data and information into a multimedia presentation. To maximize information dissemination, the students created materials for the campaign for "No Plastic Use" - slogans and flyers/brochures containing information about the effects of plastic use. In order to get the constituents' commitment, the students also conducted a signature campaign. To get support from the school administration, the students wrote letters addressed to the school principal and to the institute Chancellor. As a tribute and as an inspiration to this advocacy, the students created a culminating activity. Overall, it showcased students' environmental awareness advocacy and their social responsibility.

**Keywords:** *Plastic, Social responsibility, Environmental Awareness, pro-life Advocacies*

# **SOCIO-ECONOMIC IMPACT ASSESSMENT OF COMMUNITY-BASED ECOTOURISM PROJECT IN LAMLAHAK, LAKE SEBU, SOUTH COTABATO**

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Lake Sebu, South Cotabato is currently known to be one of the growing eco-tourism sites in Southern Mindanao. However, with the adverse effect of the usual industrial concept of development to the people, and to the environment, the government now pursues Ecotourism as the best alternative to economic improvement. Hence, this study aimed to assess the socio-economic impact of Ecotourism to determine the project implementation's status and effect, particularly on education, property ownership, the aesthetic quality of the community, employment, income levels, health, and sanitation facilities of the beneficiaries. Ecotourism Project is implemented by the Department of Environment and Natural Resources with one of its pilot sites at Sitio Lower T'lubek, Lamalahak, Lake Sebu, South Cotabato. The author utilized survey questionnaires, document analysis, fora, and interviews with the 73 beneficiaries of the project and another 73 respondents from the adjacent community for the data gathering. The study is of great benefit to the community and the implementing agency for better project implementation and in strengthening the concept of environmentally-driven economic development. Results revealed that the communities were greatly benefited by the Ecotourism project especially that it centers in community development. The benefiting community has an over-all higher level of socio-economic status compared to the non-beneficiaries.

**Keywords:** *Socio-economic impact, Community-Based Ecotourism Project, Lake Sebu, South Cotabato*

# THE MINDANAO STATE UNIVERSITY - MAGUINDANAO DEVELOPMENT PROGRAM TO RESTORE AQUASILVICULTURE FARMS AND MANGROVES

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The restoration of aquasilviculture farms and mangroves in Maguindanao Province is jointly undertaken by MSU-Maguindanao and Bureau of Fisheries and Aquatic Resources in the Autonomous Region of Muslim in Mindanao (BFAR-ARMM) in the Philippines. This is a component of the Philippine National Aquasilviculture Program (PNAP) to address severe exploitations of mangroves, and dilapidations of aquasilviculture farms, low productivity and massive poverty among fisherfolks. The program envisioned to restore aquasilviculture farms and mangrove to increase productivity and conserve resources towards a resilient and conserved environment. This is in accordance with the 1998 Philippine Fisheries Code. This also supports the 1997 Higher Education Modernization Act that authorizes the State Universities and Colleges (SUCs) to develop linkages with other institutions and agencies. Sixteen units of aquasilviculture farms and 110 hectares of mangrove areas were restored in the six (6) municipalities of the Province and 1 Multi-Species Community-Based Hatchery was constructed through the College of Fisheries and Extension Offices of MSU-Maguindanao. Community organizing, meetings, site visitation and identification, and implementation were done by a Project Management Team. Monitoring activities were conducted by BFAR-ARMM Team. The management of the program is anchored on the basic scientific management, behavioral management and the social management theories. Highlights of the management strategies, significant experiences and problems encountered in the implementation of the programs are discussed in this paper.

**Keywords:** *Mangrove Rehabilitation, Aquasilviculture, Maguindanao, Fisheries, Mangrove, Development Program*

# THE SUSTAINABLE PRACTICE OF CHARCOAL PRODUCTION IN SAN NARCISO, QUEZON PROVINCE

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It is commonly perceived that charcoal production is destructive to the environment and human life. Hence, this practice is challenging environmental ethics which calls for its cessation to save the planet from excessive greenhouse gas (GHG) emission. With issues on environment, the United Nations calls for the necessity of ethical stewardship and care for the earth whose natural resources are unstopably abused and exploited. This paper argues that not always that charcoal production is destructive to the environment. There are ways by which charcoal production can be sustainable to the environment, consumers, and producers. Specifically, certain charcoal producers who are poor and policy enforcers in San Narciso, Quezon have practiced a sustainable production of charcoal. They should be recognized in their good practice in protecting the environment and giving concern for those living in poverty. Hence, it is important to recognize and applaud certain communities having a sustainable practice of charcoal production.

**Keywords:** *Charcoal Production; Environmental Ethics; Environmental Sustainability*

# **UNDERSTANDING THE CONFLICT AND PEACE NEEDS CONTEXT IN THE RISK ASSESSMENT AND REHABILITATION OF MARAWI AFTER THE HUMAN-INDUCED DISASTER IN 1917**

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The humanitarian crisis that resulted from the 7-month Marawi Siege is a case of urban destruction not caused by natural calamity but of human-induced disaster due to violent conflict. When natural disaster strikes the most important thing is to learn the lessons to ensure that the community develop sustainably and reduce vulnerability over time. In the case of a conflict context, it is a careful context analysis and peace needs assessment that are needed so that the recovery, reconstruction and rehabilitation efforts will avoid project processes, outcomes and impacts that will feed further into the conflict cycles. This paper provides a conflict analysis and peace need assessment of the unique and yet complex situation of the Marawi Crisis. It describes the issues and the actors involve and conflict dynamics and raise concerns and challenges that are beyond the physical and economic reconstruction needs but on the equivalent conflict sensitivity and peace promoting actions. The paper sees the need to build and strengthen social cohesion as a complementary program to the humanitarian action being undertaken by government and other agencies. The findings and recommendations of this paper draws from a three-month peace needs assessment workshops and facilitated conversations and from the results of various conflict context analysis seminar-workshops for Marawi that were participated by stakeholders with broad sectoral representation and hosted by peace centers and other agencies.

**Keywords:** *Marawi Crisis, Peace Needs, Conflict Context, Disaster Risk Reduction*

## UPLAND RICE PRODUCTION: THE CASE OF SARANGANI PROVINCE AND GENERAL SANTOS CITY

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This study was conducted in Sarangani Province and General Santos City using a Multi stage sampling method. The data were analyzed through descriptive statistics, costs and returns analysis and the Cobb-Douglas Production Function. Results revealed that upland farmers are very poor, living in a small shack in the farm with no luxuries or amenities. Their farming activity only sustains their daily needs. These marginalized farmers are further being marginalized because they are not being reached by development programs of the government. They are being left behind. In terms of farm management practices, they still use their traditional practices. With regards to input utilization the sum of the elasticities is greater than one which indicates an increasing return to scale. This means that additional input applied is lesser than the additional output. This further means that the farmers must increase their application of inputs to attain higher yield and higher profitability. Though the upland farmers live simply, they also encountered problems in their farming activities. The first and foremost is drought, followed by lack of resources unpredictable rainfall as well as pest infestation. These problems were brought about by climate change. If this will continue the farmers must be equipped with the right knowledge to mitigate the effect of climate change.

**Keywords:** *Production, Upland Rice, Resources, Climate Change*

# VALUATION OF MANGROVE ECOSYSTEM: A SCOPING REVIEW

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Mangrove forests denudation is a perennial issue that needs immediate attention by the policy makers. Basically, part of the problem has already been addressed, but the valuation of the ecosystem services as one of the basis for environmental economic policies has not yet been given full attention. Several economic valuation methods were presented by different researchers and this is the subject for scrutiny in this study. This scoping study then was conducted to identify the gaps of literature. The methodology of this scoping was based on the framework outlined by Arksey and O'Malley (2005). The eligibilities of this scoping study were researches on economic valuation of mangrove services, and accessibility of the published scholarly articles in the English language from 2015-2017. Only 14 full texts were considered in the scoping reviews. The results revealed that Indonesia has the most number of researches conducted in line with the mangrove ecosystem valuation. The CBR, Contingent Valuation, Direct Valuation and TEV were the common methods used by researchers.

**Keywords:** *Valuation, Mangrove Ecosystem, Scoping Review*



# VULNERABILITY AND RESILIENCY OF COASTAL BARANGAY SCHOOLS IN SARANGANI PROVINCE AND GENERAL SANTOS CITY

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Coastal educational institutions are prone to various risks or hazards due to their geophysical location. With this, a pivotal challenge to coastal barangay schools, especially in Sarangani Province and General Santos City is to use knowledge, innovation, and education in building a culture of safety and resilience among their constituents and stakeholders. Essential to this challenge is the understanding that barangay schools are the ideal settings for shaping robust collective values suitable for building a culture of prevention and disaster resilience. Considering the aforementioned condition, this study aimed to assess the vulnerability and resiliency of the coastal barangay schools. Using concurrent research design, one hundred sixteen respondents *were purposively selected from the four communities in Sarangani Province and General Santos City. The qualitative and quantitative data were generated with the use of survey, interview guide and focus group discussion. Data revealed that the barangay schools are highly vulnerable to various hazards or risks. Nevertheless, their level of socio-ecological resiliency is moderate. Given the highlights of the findings, the crafting of contextualized and localized framework for climate adaptive management was made for the sustainable development of the coastal communities in Sarangani Province and General Santos City.*

**Keywords:** *Vulnerability, Resiliency, Coastal Barangay Schools, Sarangani Province, General Santos City*

# **WATER POLLUTION AND FISHERY IN RIVER SWAT IN PROVINCE KHYBER PAKHTUNKHWA, PAKISTAN**

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District Swat is famous for its natural beauty throughout the world. Tourist visit here for recreational services. Revenue from tourism and fish market is the main source of livelihood for many of the local residents. The fish stock is continuously on the decrease and there are various factors which are responsible for this decrease. With this background, it is important to identify the causes of water pollution, suggest options to conserve fisheries and water and to assess the existing institutional arrangements. The findings revealed that the key causes of water pollution were waste from the marble and cosmetics industries, hotels, Municipal committee (TMA), auto workshops and service stations, households' sewerage water, floods, land sliding, depletion of water resources and river mining. This study recommends to stop destructive fishing practices and strictly ban the fish catch in breeding season. The fishing and licensing policy should be revised. Reserved areas for both fishing and mining should be declared to conserve fisheries and reduce water pollution. The hatcheries should be extended and more plantation should be made to cope with the flood challenges. Awareness campaigns are required for reducing water pollution, illegal fishing practices and disposing solid waste. The need based and site specific water and fishing policy should be designed. The issue of solid waste can be tackled through recycling solid waste to produce energy or organic fertilizer. The capacity of the fisheries department should be increase through providing staff and financial resources.

**Keywords:** *Water Pollution, Fisheries Extinction, Institutional Arrangements, Water Quality, Solid Waste, River Swat*