

Environmental Science Master Study Program

No : 01
Full name : Sri Pratiwi Saraswati Dewi
Student Number : 250120197001
Study Program : Environmental Science Master Study Program
Graduation Year : 12-08-2021
Thesis Title : SUSTAINABILITY OF SHARK FISHERIES IN KUPANG - EAST
NUSA TENGGARA PROVINCE

Thesis Abstract (English) :

Sharks are a group of elasmobranch fish that act as a top predator in marine ecosystems and have an important role in maintaining the balance of ecosystem by controlling the abundance of fish populations at lower trophic level. The existence of sharks is currently threatened with extinction due to overfishing caused by the increasing demand for shark products, especially their fins. Biologically, sharks have a slow growth rate, making them highly susceptible to overfishing. Indonesia is known as one of the largest shark-fishing countries in the world. One of the landing bases for shark catches in Indonesia is Kupang, located in East Nusa Tenggara province. The pressure on the shark population does not only come from the increased fishing effort but also comes from the condition of the waters and habitat that continues to experience degradation. This study aims to determine the management of shark fisheries in Kupang and the extent of its sustainability status and obtain a policy strategy for its management. The research method used the concurrent mixed method using EAFM indicator analysis to determine sustainability status and DPSIR framework approach to formulating shark fisheries management strategies. The analysis of the EAFM indicator shows the MEDIUM status with an aggregate value of 69.67. The domains that show VERY GOOD management are the fish resources domain and the social domain with a score of 86.67. The habitat and ecosystem domain got a score of 71.67 so the status was MEDIUM. The fishing technique field got a score of 75 with a GOOD status, while the domain that got BAD status was in the economic domain with a score of 33.33. The response from the DPSIR analysis found five strategies to make shark fisheries in Kupang sustainable, namely by increasing supporting data on shark fisheries, mitigating shark bycatch, prohibiting finning practices, complying with principles and indicators in the ecosystem approach to fisheries management (EAFM), and regulating the use of shark resources and their trade with due regard to stock conditions and scientific studies.

No : 02
Full name : Sylvia Diah Ayu Kusumawardani
Student Number : 250120197001
Study Program : Environmental Science Master Study Program
Graduation Year : 09-07-2021
Thesis Title : STRATEGY FOR OPTIMIZING THE READINESS OF THE
BATIK INDUSTRI IN IMPLEMENTING GREEN INDUSTRI
STANDARDS IN THE PROVINCE OF D. I. YOGYAKARTA

Thesis Abstract (English) :

Batik is known worldwide as one of the symbols of Indonesian culture, especially since the designation of batik as a Humanitarian Heritage for Oral and Intangible Culture by UNESCO in 2009. However, the batik industri still faces several environmental problems, including nearly 85 percent of clean water usage become wastewater with thick color and pungent odor. In addition, dependence on kerosene, gas, and electricity become a source of greenhouse gas emissions. One of the main causes of these problems is the use of resources that are not efficient and well-documented, as well as the organization and management of companies that still tend to be traditional and the majorities are family businesses so that they are not well organized. One of the efforts that can be done to deal with these problems is to apply the principles of the green industri which emphasizes the efficient and effective use of natural resources by using a reference in the form of Green Industri Standards. This study aims to assess the readiness of the batik industri to meet the limits in the Green Industri Standard for the Batik Industri and to optimize the batik industri's readiness to meet these limits. The method used is a mixed quantitative and qualitative method using SOCRATES theory to assess the readiness of the batik industri to meet the technical requirements of the Green Industri Standard and TOWS analysis to formulate the required optimization strategy. Research respondents totaled 25 respondents who were selected by the purposive sampling method. Respondents are owners or managers of the batik industri who are not affiliated with the center, and produce handwritten, stamps, or combinations of batik, starting from the pattern-making stage to the finishing stage. The results showed that the readiness of the batik industri to make changes to the green industri through the fulfillment of the technical requirements of the Green Industri Standard was still low. The strategy that can be applied to overcome this situation is to first address the existing weaknesses related to the awareness and understanding of craftsmen regarding the green industri. One of the programs that can be done to minimize these weaknesses is by conducting training, coaching, and business development for craftsmen in the batik industry.

No : 03
Full name : Ivanne Tri Hendriati
Student Number : 250120187001
Study Program : Environmental Science Master Study Program
Graduation Year : 14-10-2020
Thesis Title : POLITICAL ECOLOGICAL PERSPECTIVE OF WILDLIFE
HUNTING IN PETUNGKRIYONO FOREST

Thesis Abstract (English) :

The hunting of wild animals in the Petungkriyono forest threatens the preservation of biodiversity and distrupts the balanca of the ecosystem, causing the degradation of natural resources. The linkage of actors can prevent or support hunting. This study aims to identify the causes of hunting in the Petungkriyono forest and their alternative solutions from a political ecology perspective. The research method is a mixed method with a convergent parallel design (Cresswell and Clark, 2018). The data collection technique in the qualitative method is through in-depth interviews with the

selection of respondents by snowball, while the quantitative method is through structured interviews with the selection of respondents with random cluster sampling. Data analysis uses stakeholder theory approach, access and conflict theory, and path analysis. According to the perspective of political ecology, hunting in the Petungkriyono forest is due to the limited access of grassroots actors (hunters/poachers) to forest resources. Control of access to production forests includes three components: control of land, species, forest labor, as a manifestation of the power of the state or company (Peloso, 1992). The ideological control embodied in the Forestry Law that legitimizes the State's authority in forests combines with three components to form forest access control. Meanwhile, grassroots actors who do not have access to the forest carry out hunting action in protest. Path analysis shows that the factors causing the hunting of wild animals in the Petungkriyono forest are market interest, the selling value of animals, as medicine and protein fulfillment, there is no local community awareness of wildlife conservation, specifically the hunting of pigs is carried out because there is an agreement from the community around the Petungkriyono forest. An alternative to preventing poaching of wild animals in the Petungkriyono forest is awareness of coexistence with wild animals, the Petungkriyono forest scenario is designated as an Essential Ecosystem Area of High Conservation Value (KEE ABKT) initiated by the Central Government (KLHK) together with the Provincial Government (Provincial Dishut), Regency Government (CDK), and Perhutani to protect the biodiversity of the Petungkriyono forest without neglecting the interests of the people around the Petungkriyono forest, providing alternative jobs/ business capital, providing incentives due to conflicts with wild animals, providing knowledge/ skills/ training that attracts poachers/ collectors/ animal traders, taking firm action person acting in the name of Perbakin.

No : 04
Full name : Titik Puspitasari
Student Number : 250120197007
Study Program : Environmental Science Master Study Program
Graduation Year : 19-02-2021
Thesis Title : STRATEGY AND MECHANISM MODEL OF PAYMENTS FOR WATER ENVIRONMENTAL SERVICES IN WATERSHED MANAGEMENT (CASE STUDY: GARANG WATERSHED, CENTRAL JAVA PROVINCE)

Thesis Abstract (English) :

Watershed has essential functions in human life and other living things including hydrological and ecological functions. Increasing number of critical watersheds have decreasing the watershed function. The number of critical watersheds according to the 2009 Minister of Forestry Decree is 108 watershed and one of them is Garang Watershed. Most are impacted by the change in land use such as cultivation, settlement and industrial areas, particularly in the upstream part which should be a water catchment area. This condition requires watershed management to pay more attention to water conservation. Payments for environmental services (PES) is an alternative watershed management. It combines the concerns of upstream and downstream areas

of water utilization through compensation for conservation. This study aims to identify the factors that influence the implementation of PES in the Garang Watershed by determining the value of willingness to pay (WTP) for PDAM water customers, and formulating strategies and model to encourage the implementation of PES mechanism in Garang Watershed. This study uses a combination of qualitative and quantitative methods through stakeholder analysis, Contingent Valuation Method (CVM), and A'WOT (AHP and SWOT). The results of this study indicate that the most influential internal factors to encourage the implementation of PES in the Garang Watershed include the good governance support of each party for the implementation of PES. However, the absence of PES planning formulation is an obstacle to its implementation. Furthermore, the external factor that has the most influence is the success of PES in other areas as a source of learning, and the obstacle is the less of stakeholder coordination for PES implementation. The willingness to pay (WTP) of PDAM water customers, both households and non-households in the central and western areas of Semarang City, is about IDR 238,353,050.00/month (\pm 2.86 billion/ year) which can be used for soil and water conservation in Garang Watershed. Strategies that can be applied to encourage the implementation of the PES mechanism, namely 1) Drafting local regulations on PES management, 2) Socializing water users to be involved in PES, 3) Comparative studies on the success of PES in other areas, and 4) Formulation of planning the PES mechanism to be built. The recommended model for the PES mechanism is the intermediary based transaction mechanisms and FORDAS Garang as an intermediary institution.

No : 05
Full name : Raden Ajeng Reytha Qurrataayun
Student Number : 250120197010
Study Program : Environmental Science Master Study Program
Graduation Year : 14-02-2021
Thesis Title : FEASIBILITY STUDY OF THE DEVELOPMENT OF GRAND FOREST PARK IN GUNUNG WAYANG, BANDUNG REGENCY.

Thesis Abstract (English) :

Gunung Wayang area is located in the upstream part of the Citarum river basin. Forest preservation in the upper Citarum watershed is very important to maintain its sustainability. However, along with the increasing population and increasing demand for land, Gunung Wayang forest area faces increasing threats and disturbances from various deforestation activities, such as encroachment, illegal logging, and forest land conversion, which then worsening the condition of the Citarum watershed. One of the initiatives of the Government of Bandung Regency is the development of Grand Forest Park at Gunung Wayang. Therefore, the aim of this research was to identify, and analyze the feasibility of developing Grand Forest Park in this location and formulate a development strategy. The method used was mixed-methods with a parallel convergent mixed approach, because the qualitative and quantitative methods produce different information. Formulating a strategy using SWOT analysis and Strategy Sustainable

Livelihoods. Based on the results of the study on the development of Tahura in the Mount Wayang area, it is feasible from a biophysical aspect, but there are major challenges in the social and economic aspects of the community. The strategy for developing Tahura in the Wayang Mountain area includes socialization and open information delivery to all levels of stakeholders, efforts to rehabilitate forests and land, as well as increase the attractiveness of natural tourism and community involvement. Support from the government is also very much needed to optimize the capital/assets owned by the community to meet the needs of society today and in the future.

No : 06
Full name : Moh. Dede
Student Number : 250120190001
Study Program : Environmental Science Master Study Program
Graduation Year : 12-11-2020
Thesis Title : SPATIAL DYNAMIC MODELING OF THE CHANGES IN LAND USE AND ITS IMPLICATIONS ON ENVIRONMENTAL QUALITY AT PERI-URBAN CIREBON

Thesis Abstract (English) :

Land use and land cover change (LULC) through built-up area expansion are potential to increase in line with land demand for land, its consequences of population growth and urbanization. Cirebon City as a growth center for Ciayumajakuning continues to develop and exceeds its administrative boundary, this phenomenon forming a peri-urban region as result of urban and rural environment interactions. This study aims to analyze the dynamics of LULC changes and its influential factors, analyze the probability of changes in 2030 and 2045, determine the environmental implications due to LULC changes, and formulate LULC policies direction for Cirebon's peri-urban. This study used quantitative approach i.e. logistic regression, GWLR, cubic regression, quadratic regression, as well as machine learning algorithms - cellular automata (CA), artificial neural network (ANN), and ANN-CA - to modeling LULC changes, influential factors, and its environmental implications. LULC data and environmental changes quality were obtained from satellite imagery (Landsat series) in 1999, 2009, and 2019 periods, whereas other data retrieved from official open data belonging to relevant institutions. Dynamic spatial model of LULC changes was verified based on ground truth and high-resolution satellite imagery (CNES-Airbus) interpretations in 2020. The result showed LULC changes in Cirebon's peri-urban from built-up area expansion reach 15.44 km², this phenomenon caused agricultural and gardens / plantations lands shrank significantly. The logistic regression model shows that the seven environmental factors have a significant effect on this expansion with r-square 0.43. Partially, there are four most influential factors namely land slope, distance from the existing built-up area, distance from the CBD, and accessibility. Based on verification results, the best dynamic spatial model for future LULC in Cirebon's peri-urban is CA, this model has overall accuracy 0.96 and overall kappa 0.95. LULC changes had the most significant impact on increasing temperature (16.6 percent) and chlorophyll-A (14.6 percent) with p-value < 0.01. DPSIR model produces LULC policy directions in Cirebon's peri-urban which include

formulation and re- evaluation of spatial planning, vertical development, agricultural land protection, green space allocation, promoting permaculture and permablitz, strengthening research and environmental data services, and changing the increasing accessibility paradigm. This study is expected to become a reference for the policymakers and community in realizing sustainable urban development for Cirebon's peri-urban region.

No : 07
Full name : Numan Luthfi
Student Number : 250120170504
Study Program : Environmental Science Master Study Program
Graduation Year : 02-09-2020
Thesis Title : FEASIBILITY STUDY OF THE UTILIZATION OF BAGASSE IN FIBERBOARD PRODUCTION WITHOUT BINDING COMPOUNDS

Thesis Abstract (English) :

The objective is to study the utilization of bagasse as fiberboard by relying only on the role of lignocellulose to replace the use of chemical adhesive. Binderless fiberboard was produced through wet process to enhance hydrogen bonding between cellulose. The methods used consisted of cutting, soaking, refining, concentration determination, and forming (pressing and drying) with various drying temperatures of 110 °C, 130 °C, 150 °C, 170 °C, and 190 °C. The material feasibility of fiberboard and the economic feasibility of production flow were then investigated. The results show that the increase in temperature is directly proportional to flexural strength and inversely proportional to density and moisture content with average range of 24.12-36.87 MPa, 1.0210-1.0164 g/cm³, and 6.19- 4.19% respectively. Meanwhile, water absorption fluctuated with the increase in temperature with average range of 95.23-101.02% at 110-130°C and 101.02- 37.06% at 130-190°C. In general, none of the fiberboards with various drying temperatures meet the standard of JIS A 5905 (2003), especially on water absorption parameter. On the other hand, the results show that the pilot-scaled production flows with wet process, both without binding compounds (initial model without adhesive and sizing agents) (case 1) and with only sizing agent (solution model related to the results of water absorption) (case 2), are economically feasible. Production in case 1 can run at discount factor up to 15% within cash flow for 10 years or equivalent to NPV of IDR 20,341,912 and BCR of 1.020, while the discount factor in case 2 is up to 12% or equivalent to NPV of IDR 1,228,368 and BCR of 1.001. Meanwhile, the maximum discount rates or IRR of both are 19.45% and 12,25% respectively.

No : 08
Full name : Nurul Ferista
Student Number : 250120187003
Study Program : Environmental Science Master Study Program
Graduation Year : 20-01-2020

Thesis Title : IMPLEMENTATION STRATEGY OF THE MANAGEMENT OF CLINICAL MEDICAL SOLID-WASTE POLICY IN DEPOK CITY

Thesis Abstract (English) :

In providing health community services, clinics has potential to produce solid waste and liquid waste as residual activities. The solid waste that produces by clinics are medical solid waste and non-medical solid waste. According to Government Regulation No.101 of 2014 about Management of Hazardous and Toxic Waste, clinical solid medical waste categorized as hazardous and toxic waste that needs to managed in accordance with regulations. The solid medical waste, which is not managed properly, can cause environmental pollution and endanger of human health. At present, it is known that not all clinics in Depok City carry out management of solid medical waste in accordance with established regulation. The implementation of policies is still faced the problems. The objective of this thesis is to determine the factors that influence the implementation of regulations, and analyze the strategy of implementation so the policy can run effectively. The study used a mixed method, the concurrent triangulation model based on the MSN-Approach of policy implementation model. The respondents of research are managers of medical solid waste in 65 clinics that have not been accredited in Depok City, with a minimum of 1 year working experience. Interview were conducted to the informants, there are government and professional organizations. Strategy analysis is using SWOT matrix analysis. The results showed that the factors are honest, disciplined, behave according to the ethics code, willingness to carry out of tasks, publics interests, participatory, stakeholder interaction, cooperation, equality, openness, mutual need, mutual benefit, and institutional aspects have run effectively. However, there are some factors that have not been run effectively in implementing regulation, which are understanding of risks, the existence of policies, the ability to carry out tasks to the procedures, budgets, human resources, availability of data and information, monitoring and evaluation. The strategy for implementing the regulation in Depok City is concentric diversification strategy.

No : 09

Full name : Nurul Qisthi Putri

Student Number : 250120187004

Study Program : Environmental Science Master Study Program

Graduation Year : 20-01-2020

Thesis Title : ENVIRONMENTAL ETHICS OF SMALL-MEDIUM INDUSTRIAL (SMI) BATIK ARTISANT IN TRUSMI CLUSTER OF CIREBON DISTRICT AND THE FACTORS AFFECTING IT

Thesis Abstract (English) :

Increasing batik activities not only have a positive impact on the economy but also have an impact on the environment. One of the batik-producing areas in West Java is Cirebon Regency which is famous for Trusmi Batik. SMIs Batik was established and developed not only to seek profit and preserve culture, but also to show its role in environmental preservation. So that each stage of production must pay attention to the values or principles of environmental ethics. In general, the batik production process in

the Trusmi cluster is still done traditionally and does not pay much attention to environmental sustainability. This study aims to examine how the artisan batik environmental ethics in Trusmi cluster and analyze the factors that influence them. The method used in this research is exploratory sequential mixed methods which are procedures in which the researcher first starts the quantitative research phase, analyzes and compiles the results and then explains them further with qualitative data. Testing factors that influence environmental ethics is done using Partial Least Square Path Modeling (PLS- PM). The results show that the understanding of environmental ethics at SMI Batik Trusmi is in the medium category with the value of understanding ecocentrism having the highest value among other understanding of environmental ethics (anthropocentrism, biosentrism and ecofeminism) at 57.8%. However, this understanding is not followed by environmental ethical production patterns. The factors that influence the artisan environmental ethics of SMI batik in the Trusmi Cluster are regulatory aspects and perceived behavioral control. Efforts that can be made to improve environmental ethics in SMIs are to provide environmental education and training, create a strong and effective regulatory framework and institutional reform.

No : 10
Full name : MH. Anang Hadiat
Student Number : 250120110533
Study Program : Environmental Science Master Study Program
Graduation Year : 13-01-2014
Thesis Title : SUSTAINABLE CONSERVATION PAWON CAVE AREA IN GUNUNG MASIGIT DISTRICT BANDUNG BARAT REGENCY
Thesis Abstract (English) :

Pawon conservation area is an area of karst caves that have mining potential threats that can damage the objects of cultural heritage, catchment and water resources, karst landscapes, flora and fauna. This study aims to assess the sustainability of the conservation area Pawon Cave and factors that influence it. Aspects of sustainable development includes ecological, social and economic benefits of the region. The method used is a mixture of qualitative and quantitative. The results showed that the conservation of the ecological aspects Cave Pawon has two springs that are good in the wet season and dry season although there are constraints in the distribution. Processing and minimizing soil erosion is well managed, including the terracing system. Plants and animals that live in the area maintained in the absence of logging and hunting. From the social aspect, most of the people take active part in the planning, implementation, monitoring and management for conservation areas Pawon Cave area. Public access to the area is garden, fetch firewood and taking the grass. Communities to manage the area in the buffer zone area. From the aspect of the economic benefit, the region Cave Pawon provide benefits such as: water, rice, vegetables and fruits are also fertilizer for agriculture. Cave Regions Pawon not provide benefits as a provider of sufficient jobs. Only a small portion citizens who are directly absorbed into workers, a fraction citizens become traders in the Cave Pawon. Factors affecting the sustainability of the conservation area is Cave Pawon policy support from the government and have adequate human resources to manage the area. Implementation of the policy has

shown that the appropriate thing to support conservation efforts such as the prevention of mining, conservation of water resources, protection of plants and animals in the area. Some development facilities have also been constructed to support the tour. Coaching and training programs to maintain regional spokesman Pawon Cave is an attempt to support the human resources area manager in a professional manner. Incentives given by the government to maintain interpreter (*Jupel*) is 500,000/ month. Provincial and District Jupel is 450,000/ month.

No : 11
Full name : Muhammad Al Rizky Ratno B
Student Number : 250120187013
Study Program : Environmental Science Master Study Program
Graduation Year : 13-02-2020
Thesis Title : CARBON RESERVATIONS IN THE SEAWEED ECOSYSTEM
IN CENTRAL SIANTAN KKPN TWP ANAMBAS ISLANDS AND
THE SURROUNDING SEA

Thesis Abstract (English) :

In 2019 the level of greenhouse gases in the atmosphere was equivalent to 415 ppm CO₂, an increase compared to before the industrial revolution which was only 280 ppm. This condition causes the world to be warmer more than 0.5 °C and the next few decades are predicted to increase again at least 0.5 °C. In May 2019 the Mauna Loa observatory in Hawaii noted that CO₂ concentrations had reached 415 ppm, this was the first time this had happened in human history. Therefore there is a need for climate change mitigation measures, one of which is by reducing greenhouse gases. The reduction of greenhouse gases in the atmosphere, especially CO₂, not only reduces emissions but also needs to be accompanied by increasing the absorption of these greenhouse gases. Plants play a very important role in the process of reducing CO₂ through the process of photosynthesis, where CO₂ is absorbed and converted by plants into organic carbon in the form of biomass. Plants in coastal such as seagrasses and mangroves have high potential as CO₂ absorbent. Based on research, 150.693,16 hectares of seagrass beds in Indonesia are capable of absorbing 992.67 kilo tons of carbon, equivalent to 3.64 mega tons of CO₂. This research was conducted in August 2019 until January 2020 in Siantan Tengah Anambas Islands, Riau Islands.. This study aims to: 1) Analyze the status of seagrass conditions; 2) Calculate the total carbon content in seagrass beds; 3) Analyzing public knowledge of the existence of seagrasses. This research uses the Walkley and Black method to obtain carbon content and gravimetric method to obtain biomass values. While the analysis of community knowledge uses a mixed method. Status of seagrass conditions in Siantan Tengah are in the category of rare to moderate and damaged and poor. The total carbon content of seagrass ecosystem in the Siantan Tengah is 2.385,10 tons C. Most of the people of Central Siantan do not know the benefits of seagrass beds, so they believe seagrass bed is not an important ecosystem that needs to be protected.

No : 12
Full name : Miftahul Hasanah

Student Number : 250120180003
Study Program : Environmental Science Master Study Program
Graduation Year : 17-01-2020
Thesis Title : THE EFFECTIVENESS OF SUSTAINABLE TOURISM
RETRIBUTION COLLECTION IN THE MANAGEMENT OF SRI
BADUGA PARK IN PURWAKARTA REGENCY

Thesis Abstract (English) :

Sri Baduga Park is one of the attractions in Purwakarta Regency which attracts quite a lot of visitors. Almost every month the average visitor comes to more than 50,000 people. So far, the operation of the Sri Baduga fountain is open only on certain days and tourists who want to see the fountain show are free of charge. so that the operational and maintenance budget for Taman Sri Baduga is included in the RAPBD. In this study, researchers intend to examine the level of effectiveness of visitors when subject to a levy, with the hope that the preservation of the existence of the Sri Baduga Fountain Park can be maintained. This research was conducted from 27 September to 31 November 2019. The method used in this study was a quantitative and qualitative approach. The results of this study indicate the level of effectiveness of retribution collection programs have an average score of 86.5% with a very effective interpretation of the effectiveness value (input variable / program readiness level of 87.6%, program / process implementation variable 82.2% and the expected final output / output variable is 85.3%). The results of the calculation of levies imposed on visitors amounted to Rp.6,500 per person with an effective value of levies of 66.7% which means that if the levies is imposed, it will have a fairly effective interpretation value. The swot analysis results show a number of strategies that can be applied to support the sustainability of Sri Baduga fountain parks, which are made in collaboration with government agencies to manage Sri baduga fountain parks, made in collaboration with the private sector by implementing the BOT system, made in exclusive's water to the fountain and collected the retribution of Sri Baduga fountain. With this strategy the Sri Baduga fountain park can continue.

No : 13
Full name : Rahmi Aulia Hidayat
Student Number : 250120170503
Study Program : Environmental Science Master Study Program
Graduation Year : 11-02-2020
Thesis Title : CHANGES IN PADDY FIELD MANAGEMENT OF SINDANG
HAMLET, RANCAKALONG VILLAGE, SUMEDANG DISTRICT

Thesis Abstract (English) :

Farmers have traditional ecological knowledge related to the management of their fields, including knowledge of climate, soil types, soil fertility, various plants and animals, plant pests and irrigation. This knowledge is based on customs, beliefs and cosmos. Over time, government policies in agriculture such as the green revolution were implemented with the aim of increasing productivity of rice in wet-rice field farming. This initiated a change in the community's farming system from subsistence farming to commercial farming. Not to mention the existence of climate change that requires

people to adapt. This change has an impact on ecological, economic and social aspects which are interesting to study. This study conducted in Sindang Hamlet, Rancakalong Village, Sumedang District, West Java, which is known still planted local rice cultivars and still practices rituals related to rice management. The aim of this study is to examine changes in the paddy management system in Sindang Hamlet, the impact of the introduction of the green revolution and climate change ecologically, economically and socially, then formulate sustainable agricultural management in the Sindang Hamlet. The method used in this study is a mixed method, a combination of qualitative and quantitative, with several data collection techniques, namely observation, semi-structured interviews, and structured interviews. The results showed that there was a change in the paddy management system, especially in terms of land management, but farmers still performed rituals related to paddy management. Changes in rice field management have a negative impact on economic, ecological and environmental aspects. Strategies for developing a sustainable paddy management system can be carried out with the Intergated Farming System, dan Organic farming.

No : 14
Full name : Ady Suryawan
Student Number : 250120187015
Study Program : Environmental Science Master Study Program
Graduation Year : 13-02-2020
Thesis Title : CONTROL STRATEGY OF THE CIRATA RESERVOIR
LIFETIME BASED ON MULTIVARIATE ANALYSIS OF
SUSPENDED SOLIDS IN WATER RIVER EACH SUB-
WATERSHED

Thesis Abstract (English) :

Management of reservoir water catchments using a spatial multi Criteria analysis (MCA) approach. MCA uses data reduction and spatial data overlays. Reduction and simplification of information can make decision making less effective. This condition needs the support of other analyzes the complexity of the problem can be fully understood. Cirata Reservoir is one of important reservoirs in West Java that supply electricity, freshwater fish cultures, mitigation the flood and the climate change effect, however, sedimentation has reduced its service life until 20 years. This study aims to: 1) Determine the potential of incoming solid loads from each sub-watershed; 2) Knowing the variables that most determine the TSS concentration of each sub-watershed using multivariate analysis; and 3) Determine service control strategies using a matrix approach to threats, opportunities, weaknesses and strengths or TOWS strategies. The study was conducted from October to December 2019. The research design used a combination of approaches to the sequential explanatory model. Quantitative data collection to generalize initial characteristics then proceed with qualitative data collection to deepen the suitability of alternative strategies that have been prepared. Data needed includes spatial information on land cover (KLHK), rainfall per observation station (BMKG Bogor & PUSAIR), spatial information on land movement zones (Geological Agency), internal and external potential of institutions (Cirata Reservoir Management Agency), spatial plan on West Java Province (Bappeda & West Java

Province Forest Service). The results showed that during in October 2019, the Cirata reservoir received a total suspended solids (TSS) load 39,38 ton/day. The factors that the most role-play of TSS load are rainfall intensity, and then land use, sub-area area, soil movement, slope and soil erodibility. The priority areas for intervention are open land in very high clusters (located in West Bandung Regency) and areas with high rainfall intensity (located in Cugenang sub-district of Cianjur Regency). The current BPWC strategy is in accordance with the quadrant formed from the TOWS approach. BPWC has a more potential alternative to implement, namely the WO or Mini-Maxi strategy. BPWC can use Ansel and Gash's collaborative governance approach. The score of this alternative has the highest value among the alternatives formed.

No : 15
Full name : Muhamad Maftuh Ihsan
Student Number : 250120180004
Study Program : Environmental Science Master Study Program
Graduation Year : 17-01-2020
Thesis Title : CULTURE BASED FISHERIES IN JATILUHUR RESERVATION
FOR SUSTAINABLE FISHERIES MANAGEMENT

Thesis Abstract (English) :

Since 2015, Purwakarta district government has made a program named Operasi Danau Jatiluhur Jernih which is supported by SK Purwakarta regent No.523.31.05/Kep.286-DLH/2017 to decrease a number of KJA plot in Jatiluhur Dum. However the KJA control program has a negative impact on the social and economic condition of KJA farmers. Therefore, the Purwakarta regency government conducted CBF development with the Purwakarta regent decree SK No.523.05/Kep.66-Diskanak/2017 which was given the name of the formation of a task force for the management of capture fisheries based on aquaculture. This program aims to improve the quality of waters, increase fish populations and is expected to be able to improve the socio-economic conditions of the community. In this study, an analysis was conducted on community perceptions of the CBF program from 17 September – 31 October 2019 and provided input in the form of CBF implementation strategies for porgam sustainability. The method used in this research is quantitative and qualitative approaches. The results of this study indicate that the community strongly supports the Culture Based Fisheries program in the Jatiluhur Reservoir. Almost all communities (91,29%) agreed that the CBF program had a good impact on ecological conditions, as well as the community's response to social conditions (94,30%). Almost all of them agreed that this program had a good impact especially on water resources management being organized / integrated, and almost all of the community (93,25%) agreed that the CBF program was able to improve the economic conditions of the community which had previously been hampered due to KJA withdrawal activities. CBF program strategies are based on the SWOT concept. The strategies that can be carried out in supporting the implementation of the CBF program include increasing the added value of fish and diversifying processed products, involving cooperatives or groups in fish marketing activities, routine socialization, utilizing government social assistance, disciplining marketing methods, optimizing the development of BBI and UPR and restocking of fish

that is suitable for local conditions and the establishment of fisheries management institutions, counseling and group development and optimization of supervision institutions.

No : 16
Full name : Nikson Regen Sinaga
Student Number : 250120187007
Study Program : Environmental Science Master Study Program
Graduation Year : 17-01-2020
Thesis Title : IDENTIFICATION OF MANAGEMENT IN TAMAN HUTAN
RAYA BUKIT BARISAN NORTH SUMATERA

Thesis Abstract (English) :

Taman Hutan Raya (Tahura) Bukit Barisan is a conservation area with a high level of biodiversity. The lack of maximum management of this area makes it not yet the maximum utilization of natural resources in the region. The purpose of this studies is to describe the management of Bukit Barisan Tahura in North Sumatra Province and the strategies that need to be developed in the management of Tahura Bukit Barisan. The research method used is a qualitative method. Data collecting techniques were carried out with semi-structured interviews, field observations and documentation studies aimed at collecting data on ecological, management and protection aspects as well as social-economic aspects of the community. Tahura Bukit Barisan currently managed by the North Sumatra Provincial Government through the Sumatra Provincial Forestry Service. Management of this area is more focused on the principle of protection rather than the principle of preservation and utilization. Observation results show that some areas of Tahura Bukit Barisan area look untreated, existing facilities and infrastructure are not utilized and maintained properly by the manager. By paying attention to these situations and conditions, efforts should be made to build coordination and cooperation with various agencies and institutions involved in the preparation of management plans, institutional strengthening of Tahura Bukit Barisan in accordance with government policy, optimizing the utilization of the potential of Tahura Bukit Barisan and managing Collaboration by involving various parties.

No : 17
Full name : Kadarisno
Student Number : 250120170005
Study Program : Environmental Science Master Study Program
Graduation Year : 17-07-2019
Thesis Title : SUSTAINABILITY OF RICE FARMING BUSINESS IN
KAMPUNG KUTA, KARANGPANINGAL VILLAGE,
TAMBAKSARI DISTRICT, CIAMIS REGENCY

Thesis Abstract (English) :

Kuta hamlet is one of the traditional villages which in the wet-rice farming activities of the community still relies on local knowledge and beliefs inherited from their ancestors. But in its development, the introduction of Green Revolution technology has caused changes in their rice farming. This research aims to study the past and

present wet-rice farming activities in Kuta hamlet, to assess the impact of the Green Revolution program on environmental, economic and social aspects, and to analyze the sustainability of wet-rice farming in Kuta hamlet. The method used in this study was a mixed method with qualitative that is more dominant than and quantitative, then the result was analyzed by descriptive. The results showed that wet-rice farming activities in Kuta hamlet had undergone changes with the introduction of the Green Revolution program, namely at the stage of selecting rice seeds, nursery, preparing land, planting rice, maintaining plants, harvesting and post harvesting activities. These changes can be seen from the planting of new rice varieties or High Yielding Rice Varieties (HYVs), using hand tractors, using agrochemicals (fertilizers, pesticides and herbicides), harvesting equipment (sickle and threshing machines), the storage of rice in the houses (goah) and using hullers. However, some traditional practices and rituals of rice farming are still maintained by farmers. The introduction of Green Revolution technology in the wet-rice farming has caused various negative impacts, namely a) environmental aspects, decreasing biodiversity and pest outbreaks; b) economic aspects, including increasing of agricultural inputs; and c) social aspects, including changes the role of the informal leader and gender in the wet-rice farming and change in attitudes and behavior of farmers in agricultural activities. The sustainability of wet-rice farming in Kuta hamlet on existing conditions is considered low-moderate based on productivity, stability on pest disturbances, climate anomalies and input-output production prices, and equitability in land tenure and income of wet-rice farming criteria's. The efforts made to ensure that wet-rice farming activities in Kuta hamlet are sustainable in the future, namely: a) using the local knowledge of pranata mangsa or kala mangsa with climate change; b) application of biopesticides and organic fertilizer; c) application of the *jajar legowo* planting system; and d) multi-species and multi-varieties cropping patterns.

No : 18
Full name : Rina Riviani
Student Number : 250120150502
Study Program : Environmental Science Master Study Program
Graduation Year : 18-01-2019
Thesis Title : EVALUATION OF FACTORS - DETERMINING ENVIRONMENTAL FACTORS OF WATER CORROSIVITY IN CIRATA CONTAINERS BASED ON LANGELIER SATURATION INDEX AND THE HANDLING STRATEGY

Thesis Abstract (English) :

Evaluation of environmental factors that determinant the corrosion of water at Cirata Reservoir is very important to be done to determine the current condition of corrosion at reservoir waters, considering the function of the reservoir as an energy generator, electricity, irrigation, floating net fish farming, tourism development and for domestic needs such as toilet. The corrosion of water in the Cirata Reservoir has an effect on the durability of dams and power plant installations and on the condition of the waters of the Cirata Reservoir. This research has two purpose, namely: 1) Determine the factors of water corrosion Cirata Reservoir based on the langelier saturation index in the span of 15 years; 2) Formulate a strategy for handling the corrosion of water in

the Cirata Reservoir using the AHP (Analytical Hierarchy Process) method. The first purpose is an analysis to build the hypothesis which related with the cause factor of water corrosion at Cirata Reservoir, so the strategy to handle water corrosion at Reservoir Cirata can be formulated at the second research puporse. The results showed 3 (three) main factors that most contributed to the corrosion of water in the Cirata Reservoir were the existence of KJA, the presence of domestic waste disposal, there were soil erosion and runoff water runoff in the Cirata Reservoir. From the results of the analysis in 2000, 2005, 2010, and 2015 the main parameters causing the corrosion of water in Cirata Reservoir based on the Langelier Saturation Index of the five parameters studied were pH and Calcium. The strategy for handling the corrosion of water in the Cirata Reservoir can be done with seven priority alternatives, namely: 1) BINWASDAL (Guidance, Monitoring & Control) and law enforcement; 2) Institutional strengthening in related sectors 3) Forest rehabilitation and Green Belt greening; 4) Reduction in the number of KJA; 5) Construction of Communal WWTPs; 6) Change in the open dumping method of the garbage collection system to the sanitary landfill method; 7) Directing 3R Implementation in the community environment.

No : 19
Full name : Susila Oktapiyani
Student Number : 250120177005
Study Program : Environmental Science Master Study Program
Graduation Year : 08-02-2019
Thesis Title : ECONOMIC VALUATION OF COAL WATER SUPPLY SERVICES IN SUBAK JATILUWIH AREA

Thesis Abstract (English) :

People generally assume that water is a resource that is taken for granted or given from God, has an unlimited amount in nature and free. Even though water is seen as free or almost free, it will cause no incentives to preserve it. One way to increase respect for water resources is to know the potential economic loss that will occur when water is no longer available. This study aims to determine the water economic value from the Batukaru Forest in the Subak Jatiluwih area and the institutional performance of water payment ecosystem services. This research uses the concurrent mixed methods. Quantitative methods are used to collect data on the benefits of ecosystem services through water economic valuation. Qualitative methods are used to determine the institutional performance of water payment ecosystem services between Batukaru Forest and Subak Jatiluwih area. The quantitative method was preceded by qualitative method regarding the pattern of water utilization in the Subak Jatiluwih area to get accurate data. The results showed that water as a product of Batukaru Forest ecosystem services was able to provide a multiplier effect. Water as an intermediate goods in the agricultural sector was able to create subak culture and tourism in Subak Jatiluwih area. The total economic value of water provisioning sevicees from Batukaru Forests into Subak Jatiluwih area ranges from Rp. 9,271,955,889 to Rp. 11,650,103,716 per year, with an average of Rp12,130,164,594 per year. It's consists of the value of water from agriculture output Rp6,538,174,426 per year year, culture output Rp. 94,603,333 per year, vacation output Rp. 5,480,499,535 per year and water consumption for tourism

facilities Rp. 16,887,300 per year. The water economic value based on the agricultural calendar of Subak Jatiluwih is Rp7,668,746,034 in kertamasa period and Rp.4,461,418,560 in gegadon period. The water economic value of in the gegadon period is the water economic value obtained by the community because the Batukaru Forest is still preserved. the community and Badan Pengelola DTW Jatiluwih have provided payment ecosystem services to the Batukaru Forest that consist of forest conservation behavior to protected-forest, and provide tourism provit-sharing to community-forest, but the institutional arrangements between service providers and beneficiaries for Water Payment Ecosystem Services are legally not yet available.

No : 20
Full name : Widiyanto
Student Number : 250120177011
Study Program : Environmental Science Master Study Program
Graduation Year : 01-02-2019
Thesis Title : ANALYSIS OF CARRYING CAPACITY ON NATURAL
TOURISM AREA IN AIR HITAM DALAM UTILIZATION ZONE
OF BERBAK NATIONAL PARK

Thesis Abstract (English) :

Natural tourism activities in the Air Hitam Dalam utilization zone are one form of utilization of the natural resource of Berbak National Park. The strategic position of Berbak National Park as a tourism development area can encourage the growth and development of natural tourism activities which will be directly proportional to the increasing number of tourist visits to national parks. This study aims to determine the environmental carrying capacity and management strategies for developing natural tourism in the Air Hitam utilization zone in Berbak National Park. The method used to determine the carrying capacity of natural tourism is the modified Cifuentes method by calculating the physical carrying capacity, real carrying capacity and effective carrying capacity, while the formulation of tourism management strategies is carried out through qualitative descriptive analysis. The carrying capacity calculation is carried out on 2 tourist attractions in the natural tourism area in the Air Hitam Dalam utilization zone. With regard to tree diversity, bird diversity, visual landscape and rainfall as a correction factor for physical carrying capacity and the number of officers available as management capacity for real carrying capacity, the results of the study show that the effective carrying capacity of river tourism attractions is 143 people/day and on boardwalking attractions is 10 people/day. The value generated from the calculation of the carrying capacity is the optimum number of visitors allowed based on the characteristics of each tourist attraction. Based on the results of the analysis, it is known that the environmental carrying capacity of the Air Hitam Dalam tourism area is still very high compared to the average number of visitors, so it is still possible to develop tourism in these locations by paying attention to the principles of sustainable tourism management through individual tour packages to tourist special interest and environmental education tour packages for group visitors.