

## Regional Innovation Master Study Program

No : 01  
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Student Number : 251020187504  
Study Program : Regional Innovation Master Study Program  
Graduation Year : 11-02-2021  
Thesis Title : PERANAN KOMUNITAS LOKAL DALAM PERENCANAAN PENGEMBANGAN GEOSITE DI KAWASAN GEOPARK BELITONG  
Thesis Title (English) : THE ROLE OF THE LOCAL COMMUNITY IN GEOSITE DEVELOPMENT PLANNING IN THE BELITONG GEOPARK AREA

Thesis Abstract (English) :

This research is aimed to determine how the local community as geosite operator in making geosite development planning in Belitong Geopark. The research method is a descriptive study with a qualitative approach where the local community becomes the main source of research information. This research is not based on hypothetical but operational definition concepts analysis that have been formulated based on research questions. However, the mathematical analysis is used through the "Weight Scoring System" Technique or weighted assessment system to analyze the patterns and meaning of relationships between the categories. Meanwhile, a review of the literature is still undertaken to determine the theories that have been applied in related research. Data is collected by the observation techniques, documentation, and interviews. This research was conducted in 4 (four) Geosite locations: 1) Bukit Peramun Geosite in Sijuk Sub-District of Belitung Regency, 2) Juru Sebrang Geosite in Tanjungpandan Sub-District of Belitung Regency, 3) OpenPit Namsalu Geosite in Kelapa Kampit Sub-District of East Belitung Regency and 4) Tebat Rasau Geosite in Simpang Renggang Sub-District of East Belitung Regency. With the purposive sampling technique, there are 16 respondents that are distributed in proportionately for every research location. The study have found that local communities generally have a good ability to structure and formulate Geosite development planning but still have to enhance in the future by optimizing knowledge, participation and development planning skill through human resource development (HRD) strategies in geosite management in accordance with the top 10 focus area of UNESCO Global Geopark.

No : 02  
Full name : Andis Prisantoro  
Student Number : 251020180504  
Study Program : Regional Innovation Master Study Program  
Graduation Year : 05-02-2021  
Thesis Title : MODEL PENGELOLAAN BERKELANJUTAN SUMBER DAYA ALAM BERBASIS MASYARAKAT DALAM UPAYA

KONSERVASI SUD DAERAH ALIRAN SUNGAI HULU  
CITARUM

Thesis Title (English) : COMMUNITY-BASED SUSTAINABLE MANAGEMENT  
MODEL OF NATURAL RESOURCES IN THE CONSERVATION  
EFFORT OF THE UPPER CITARUM WATERSHED

Thesis Abstract (English) :

The application of watershed management (DAS) with conventional top-down and centralized management models at the village level can often lead to failure and discontinuation of watershed management. In this decade, starting from 2018 the program to accelerate control of the Citarum Harum river, with one of the target programs is the management of critical land towards conservation. Land handling towards sustainability encourages the emergence of a new paradigm of participatory natural resource management through community based natural resources management (CBNRM). This research was conducted in the Upper Citarum Watershed, precisely in Cikembang Village, Kertasari District, Bandung Regency. The research objectives were (1) to find out the activities / functions of natural resource management in Cikembang Village, Kertasari District, Bandung Regency and the role of outsiders / other stakeholders in the management, (2) to analyze the aspects of community-based natural resource management in Cikembang Village. , (3) describe the CBNRM conceptual model in Cikembang Village and formulate a sustainable CBNRM implementation model by including investment feasibility analysis and AHP (Analytical Hierarchy Process) in supporting watershed conservation. This research was conducted in two stages, stage I, namely observation of land, activities of farmer managers and stage II interviews of experts / experts at the policy level for AHP direction. The method used is a mixed research approach (mixed methods) with a concurrent embedded strategy, which combines the use of quantitative and qualitative methods. Qualitative methods are used to understand and analyze the processes of planning, organizing, implementing, and controlling as well as the involvement of other stakeholders. CBNRM aspects which include justice, empowerment, conflict resolution, knowledge and awareness, biodiversity protection, and sustainable use. In addition, qualitative data is also used in exploring information on diversity conditions based on previous research literature studies. Quantitative methods are used to analyze the feasibility of investing in conservation crops, land suitability analysis. In addition, AHP analysis is used to determine the direction of the continuous management model. The results showed that the process of the stakeholders identified there were several levels, namely: (a) Constitutional level, including West Java Provincial Government (Governor, DPRD, BAPPEDA), Citarum River Basin Center (BBWS), Bandung Regency Government (Mayor, DPRD, District BAPPEDA); (b) collective choice level, consisting of Task Force 23, Harum Citarum Sector, PTPN VIII / Perhutani, Bandung Regency Agriculture and Forestry Service, Kertasari District Government, Cikembang Village Government, Agricultural Extension and Higher Education Institutions; (c) Operational level, which consists of Farmers / Gapoktan (Farmer Group Association), NGOs (Community Social Institutions). CBNRM based on AHP (Analytical Hierarchy Process) in Cikembang Village is able to balance the goals of community empowerment and natural resource conservation on five aspects of the six aspects of CBNRM, namely justice, empowerment, conflict

resolution, knowledge and awareness, and protection of biodiversity. AHP analysis priority criteria for HR empowerment: 20.9%, policy: 19.8%, internal management of sub-watersheds: 18.6%, community relations with land: 16.1%, funding schemes 12.8%, and government politics and political economy 11.8%. The alternative land use is for food: 21.4%, forestry industry: 19.8%, food industry: 19.2%, livestock industry 19.2%, agroindustry: 13.2% and wood: 7.1%. Then the alternative rating value for land use by the respondent / expert is for wood because it is in line with the accelerated management of critical land programs. The land use rating values with a good level are (a) wood: 15.81%, (b) forestry industry: 10.38%, (c) food: 9.58%, (d) food industry: 8.77%, (e) agroindustry: 7.96% and (f) livestock: 5.88%. Even so, the second alternative is the forestry industry, this alternative can be the second choice after conservation plants, namely the development of local business and food industries based on local resources in the sub- watershed area of Cikembang Village can be one of the sustainable management strategies. Furthermore, the third alternative is food, this alternative can be taken as an MPTS management program in the sub-watershed in Cikembang Village, namely the MPTS (Multi Purpose Tree Species) Planting System in one area planted with 3 (three) types of plants: hard, vegetables and fruits). The analysis showed that the cultivation of coffee, avocado with eucalyptus stands was able to become a conservation plant to resist erosion and / or run off with a cropping technique. In addition, these plants have added economic value to farmers with a fairly long period (10-15 years), so that the sustainable management of the sub-watershed in Cikembang Village, Kertasari District, Bandung Regency, community-based can be achieved.

No : 03  
 Full name : Jakah  
 Student Number : 251020190504  
 Study Program : Regional Innovation Master Study Program  
 Graduation Year : 15-11-2021  
 Thesis Title : REKAYASA GROUND ENHANCEMENT MATERIAL (GEM) BERBASIS TUF VITRIK SEBAGAI MATERIAL PERBAIKAN PENTANAHAN PADA SISTEM PROTEKSI PETIR  
 Thesis Title (English) : ENGINEERING GROUND ENHANCEMENT MATERIAL (GEM) BASED ON VITRIC TUF AS A EARTH REPAIR MATERIAL IN LIGHTNING PROTECTION SYSTEM  
 Thesis Abstract (English) :

Ground repair material is an important part of the grounding system as a lightning rod to reduce the risk of danger from lightning activity. Grounding repair materials consist of conductive and superconductive materials, commonly known as Ground Enhancement Materials (GEM). GEM has low resistivity ( $\rho \leq 0.20 \Omega\text{-m}$ ), it is very effective in transmitting lightning energy to earth. Factors that affect soil resistivity are moisture content, salt, electrolytes, and soil temperature. Natural raw materials that can be used as grounding repair materials are aluminosilicate group rocks. Vitric tuff is a pyroclastic rock of aluminosilicate (phyllosilicate) mineral group, has very good porosity, and has the opportunity to be developed as a grounding improvement material. Vitric tuff is a marginal rock group with resources scattered throughout the

area following the distribution of volcanoes. This study aims to determine the characteristics of tuff vitric, obtain process technology, and obtain the optimal formulation. The research method is field and laboratory observation. Laboratory activities consist of preparation, tuff engineering with activation method, and testing/analysis. The activation method applied is chemical and physical activation, then formulating it with additives and starting with experimental design, homogenization, and testing/analysis. Experimental variations in the design of 4 formulas with variations of the main ingredients 55-85% and activated charcoal 7-37%, mutually substituted for 92% of the total composition. Then the additives NaCl 6%, and 2% CMC. The analysis activities consist of petrography, XRD, AAS, and resistivity. The results of the resistivity measurement of the formulation were compared with the standard GEM product. The results showed that a hand-specimen vitric tuff has compact physical characteristics, white to brownish-gray, fine-grained  $d < 2$  mm, slightly weathered and oxidized. The mineralogy constituents are volcanic glass, feldspar (albite), clay minerals (halloysite?), quartz, and opaque minerals. They were chemically dominated by silica ( $\text{SiO}_2$ ), alumina ( $\text{Al}_2\text{O}_3$ ), and impurities. Vitric tuff cannot be directly used as a grounding repair material ( $\rho > 10 \Omega\text{-m}$ ). The processing method that can be applied in the development of vitric tuff as a grounding improvement material is alkaline chemical activation using 1 M sodium hydroxide (NaOH) activator, immersion for  $\pm 24$  hours, physical activation through calcination at a temperature of 100o C for  $\pm 3$  hours, and other additive materials (activated charcoal and NaCl). Optimal formula with resistivity gain of 0.0124  $\Omega\text{-m}$  ( $\leq 0.2 \Omega\text{-m}$ ), stable over time ( $r = 0.11$ ) and minimal use of additives, namely 65% activated vitric tuff, 27% activated charcoal, 6 % NaCl, and 2% CMC.

No : 04  
 Full name : Putraarta Samodro  
 Student Number : 251020180503  
 Study Program : Regional Innovation Master Study Program  
 Graduation Year : 08-01-2021  
 Thesis Title : KAJIAN DAYA DUKUNG LINGKUNGAN DALAM PEMANFAATAN RUANG DI KAWASAN BANDUNG UTARA (PENERAPAN KOEFISIEN DASAR BANGUNAN BERBASIS INFILTRASI DI KECAMATAN PARONGPONG)  
 Thesis Title (English) : STUDY OF ENVIRONMENTAL SUPPORTING CAPACITY IN THE UTILIZATION OF SPACE IN THE NORTH BANDUNG AREA (APPLICATION OF BUILDING BASIC COEFFICIENT BASED ON INFILTRATION IN PARONGPONG DISTRICT)  
 Thesis Abstract (English) :

North Bandung Region (KBU) plays a vital role and function to the surrounding area because KBU is a groundwater recharge area. The West Java Province Spatial Plan (RTRW) directing KBU as the Provincial Strategic Area (KSP) for environmental management. The spatial controlling of the North Bandung Region is currently regulated by the Governor's Regulation on the North Bandung Region's Strategic Area Control Guidelines for the West Java Province. The environment carrying capacity has to be consider in KBU development, in order to spatial use programme of the KBU area for

environmental bases. This study aims to analyze the environment carrying capacity at KBU from the infiltration aspect, as well as determine the value of KDB for built-in land based on infiltration in the KBU. Conservation index method has been used for environment carrying capacity analyses and also spatial use programme recommendation, as well as infiltrationbased KDB analysis. The results shows that land use in 2015 decreased actual conservation function that cause the existence of critical conservation areas by 68.37% and increased in 2018 to 69.78%. The application of the conservation index on the land use planning of the RTRW West Java Province reduce the critical conservation area becomes 35.90% in 2029. The depletion of the critical conservation area in 2029 have not been supported by environmental programs in v the embodiment of land use planning which is able to increase the conservation class both by 42.27%, where in 2018 the good conservation class is only by 10.78%. It can be concluded that the IKA and IKC studies that have been carried out in this study show that there is an increase in the distribution of critical land in KBU, and the IKR analysis proves that the land use plan of the RTRW of West Java Province will be able to reduce critical conservation areas. Based on the comparison of 3 KDB analysis with regional regulation directives, it can be seen that the KDB analysis based on modified infiltration (based on the conservation index) is the result of KDB analysis with a value that is below the value of the direction of regional regulations. Meanwhile, the results of KDB analysis based on modified infiltration (based on actual conservation index) are the results of KDB analysis with varied values, some are above the direction of local regulations and some are under the direction of regional regulations.

No : 05  
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Study Program : Regional Innovation Master Study Program  
Graduation Year : 09-02-2021  
Thesis Title : PERANAN KEBIJAKAN RENCANA TATA RUANG DALAM MENGENDALIKAN MASALAH LINGKUNGAN DI KECAMATAN GARUT KOTA - KABUPATEN GARUT  
Thesis Title (English) : THE ROLE OF SPATIAL PLAN POLICY IN CONTROLLING ENVIRONMENTAL PROBLEMS IN GARUT KOTA DISTRICT - GARUT REGENCY

Thesis Abstract (English) :

Regional regulations related to the RTRW (Regional Spatial Planning) Policy are a legal umbrella in the development of a region, but these policies are sometimes out of sync when applied in the field, resulting in a gap between spatial planning policies and realization. This study aims to determine the suitability and discrepancy between the Garut Regency RTRW policy and the realization, especially related to the Sukanggang IPK KPI, Garut Kota District. The "policy research" method is used in this study by synchronizing the RTRW policy with conditions in the field and with related laws and regulations combined with an IPA (Importance Performance Analysis) approach to determine the level of the gap between policy and realization. Based on the results of the analysis, the direction of the spatial pattern of the Garut Regency RTRW related to

the industrial designation area in the Garut City District has not been based on regulations and laws and conditions in the field, so that there is asynchrony in planning. Likewise, with the direction of the policy on spatial planning with actual conditions in the field, there is a gap of 42 percent, which also has an impact on the licensing system. For the spatial planning policy to be effective, the existing RTRW Regional Regulation needs to be reviewed (PK) for further revision based on the relevant laws and regulations as well as actual conditions in the field.