IPB University
Bogor Indonesia

SUSTAINABLE DEVELOPMENT GOALS

Supplementary

Sustainability Report 2021

SDG 15:

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

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Learning Program

International Seminar: The 6th ISSLD 2021

One of the activities of precision and smart farming models in farmer corporations is the early detection of rice plant health (detection of pests and diseases). Early detection of plant health is done by operating a multispectral drone (multispectral aerial photography). Pest and disease attacks that occur can be mapped and then control measures are taken. Early detection of pest and disease attacks is a smart technology in controlling plant pests and diseases. This method can be continued by developing sensors so that they can be monitored from the outbreak control room.The 6th International Symposium of Sustainable Development ISSLD is a biennial international scientific meeting in the field of Landscape Architecture involving speakers and participants from various countries, namely Indonesia, Japan, Philippines, Malaysia, and Croatia. The 6th ISSLD was organized by the Department of Landscape Architecture of IPB in collaboration with Chiba University, IALI and APALI. The 6th ISSLD will be held on 15-16 September 2021, with participants from 5 countries. The event took place online which was attended by more than 200 participants from academics, researchers, practitioners, policy makers, and students.

Link Activity:
https://primata.ipb.ac.id/

2

Studium Generale of Agricultural Politics “Plantation Management and Palm Oil Industry”.

The Studium Generale is an agenda for the Agricultural Politics course (FPA 401) which is held annually. In this period the topic raised was “Plantation Management and Palm Oil Industry”. The Studium Generale aims to provide students with actual knowledge and information that is currently being developed. This event will be held on Friday, October 22, 2021 online or via Video Conference which will take place from 13.00 to 15.00 WIB. More than 380 participants who attended this event were students, lecturer assistant team, and lecturer team.

This event invited Mr. Dwi Asmono, PhD as Director of Research & Development PT. Sampoerna Agro Tbk as a resource person. The event was opened by Muhammad Adryansyah as the assistant team who became the Master of Ceremony. After the opening and singing the Indonesia Raya anthem, followed by remarks by Dr. Ir. Sugiyanta, M.Si as the Dean of the Faculty of Agriculture, IPB University. Entering the main event, the material presentation session was reopened by Mr. Dr. Ir. Ahmad Junaedi, M.Si as the moderator as well as introducing the speakers.

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Link Activity:
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3 The 2nd International Seminar on Natural Resources and Environmental Management (ISeNREM)

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This activity held on August 4–5, 2021

IPB PS-PSL is a biennial activity to support the publication activities of IPB students and staff. This activity is helpful in increasing Scopus indexed international publications for PS-PSL students; the existence of "sharing" information, knowledge, and technology in the field of natural resources and the environment.

https://isenrem.ipb.ac.id/about-us/

4 The 2nd International Summer Course on Forestry and Environment: Tropical Forest Ecosystem Management and Innovations (ForSC2021)

ForSC2021 is a summer course activity organized by the Faculty of Forestry and Environment online and will continue from August 21–29, 2021. This activity is in collaboration with The 3rd International Conference on Tropical Silviculture (ICTS 2021), held by the Department of Silviculture, Faculty of Forestry and the IPB University Environment, on August 24, 2021, as well as the international student organization IFSA-LC IPB. The implementation of ForSC2021 is equivalent to 2 credits (semester credit units) with 84 hours of learning hours signed by the Dean of the Faculty of Forestry and Environment, IPB. The credit earning certificate is given to ForSC2021 participants who participate in at least 80% of the activities. In addition to a credit earning certificate, participants are given a participant certificate and an ICTS2021 attendance certificate. The total topics presented were 16 lecture topics, one international conference (ICTS 2021), two virtual visits (Gunung Walat Educational Forest and Gunung Gede Pangrango National Park), and two international student competitions in the form of group poster competitions and individual essays (Youth Initiative Contest).

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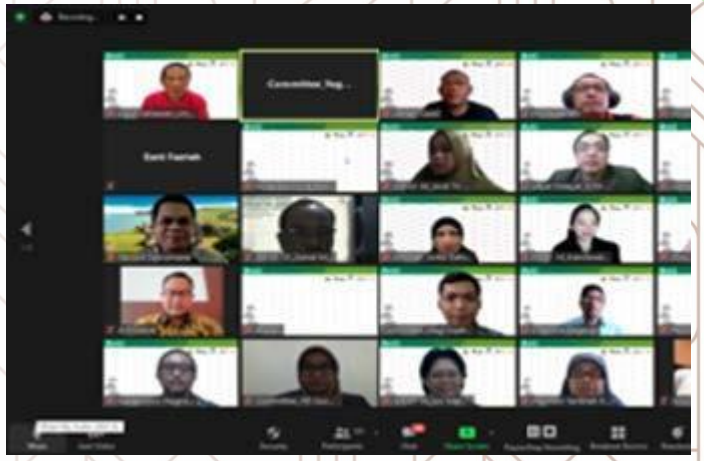
https://agribisnis.ipb.ac.id/?p=3148&lang=en

5 The International Symposium on Arboriculture in the Tropics: Trees and Human Health (the 2nd ISATrop 2021)

The 2nd ISATrop 2021 is the second International Symposium series organized by the Faculty of Forestry and Environment, IPB University, together with the Indonesian Arboriculture Society (MArI), Malaysian Arborist Association (PArM), and Universiti Putra Malaysia (UPM). This symposium was held to gather information and strengthen the commitment of various stakeholders to the important role of trees, green spaces, urban parks, and urban forests in supporting human health and strengthening the commitment of various stakeholders to protect nature. This symposium was also held to commemorate Environment Day. The 2nd ISATrop2021 which was held online (ZOOM platform) on 21-22 June 2021 was attended by 4 (four) keynote speakers, namely Dr. Danis Hidayat Sumadilaga (Ministry of Public Works and Public Housing, Indonesia), Mr. Goh Mia Chun, MBA (CSK Landscape, Principal Arborist, Singapore), CA En. Rosslan Yaacob (Malaysian Society of Arborist/PArM), and Prof. Iskandar Z. Siregar (Indonesian Arboriculture Society/MArI). Besides the keynote speaker, the symposium was also attended by by 4 (four) invited speakers namely Dr. Sujin Park (National Institute of Forest Science, South Korea), R. Bruce Allison, Ph.D (Allison Tree Consulting Arborist, USA), Dr. Noriah Othman (Malaysian Society of Arborist, Malaysia), and Mr. Tony Hari Widiananto (Indonesian Engineers Association / PII). The number of participants who attended The 2nd ISATrop2021 was 155, including 87 national participants and 68 international participants from 6 (six) countries, namely Indonesia. esia, Malaysia, Singapore, Thailand, South Korea and the USA.



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Student Activities

6

NEST: NATIONAL ENVIRONOMIC AND SOCIAL TALK ON FOREST RESTORATION

NEST is a national seminar, essay, presentation, and infographic competition attended by students from various universities in Indonesia. NEST is an annual event for the Forest Management Student Club (FMSC), a student organization at DMNH. The purpose of NEST 2021 is to find out the opportunities and challenges in forest rehabilitation and develop students' creativity to develop ideas on how to rehabilitate forests effectively and efficiently. NEST activities will be held on 29 – 30 October 2021. The NEST National Seminar with the theme “Challenges and Achievements of Forest and Land Rehabilitation in Indonesia” was attended by 300 participants. All of them are students from various universities throughout Indonesia.

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Link Activity:
https://primata.ipb.ac.id/

BIOVERSARY: SAYANGI LINGKUNGAN AGAR HIDUP BERKELANJUTAN

Bioversary is an activity organized by the Biology Student Professional Association (Himabio) to commemorate the 58th anniversary of the Biology Department, FMIPA IPB. The excitement of the Bioversary is marked by the various activities that have been carried out, from student competitions to national level webinars. Two branches of the competition were held in the Bioversary competition, namely the National Scientific Writing Competition (LKTIN) with the theme "Bioscience for Sustainable Life" with the subthemes 1) Health, 2) Environment, 3) Food, and 4) Energy and a Photography Contest with the theme "The Beauty of Life". Wild Flora and Fauna in Indonesia". The webinar agenda was attended by practitioners and academics who are experts in their fields, such as Yaumud Raiyardhi (BW Kehati), Muhammmad Ikbal Putera, SHut, MS (First Forest Ecosystem Controller, Komodo National Park Hall), and Prof. Dr. Ir Ani Mardiastuti, MSc (Head of Ecology and Wildlife Management Division, Department of Forest Resources Conservation and Ecotourism, Faculty of Forestry, IPB).

Participants who participate in the bioversary can understand the role of biology in solving development problems. In addition, participants are also able to think critically, innovatively, and provide solutions in utilizing biological sciences for the development of sustainable agriculture. This activity can also make participants recognize the diversity of flora and fauna around their homes.

The obstacle faced when carrying out this activity was the small number of committees, making it difficult to divide tasks. In addition, the lack of media partners reduces the spread of activity information. To overcome this, the effectiveness and efficiency of the committee's resources is the most appropriate solution. Furthermore, social media owned by the committee and student organizations is the best option for disseminating information to the general public.

The 2021 Bioversary activity involved 30 contestants and hundreds of webinars. This activity will be held online from 5 August to 14 November 2021.

https://www.koranbernas.id/tim-antares-vyatra-pem-akamigas-cepu-juara-3-lkti-ipb

8

Rice Plant Health Detection Map by Multispectral Aerial Photography

Fredha Muftika Setyawan (A44170022), Haifa Az Zahra (A44170076), Mu Anbiya Al Hakim (A44170081), Wikan Cahya P (A44170057) managed to get 1st place in the ICoSAFS event. Fredha and the team succeeded in bringing the concept of Interaction of Rural Landscapes by using traditional Sundanese and Lawang Saketeng designs, as well as approaches to design principles: socio-cultural approaches, ecological approaches, and economics. Bilal Pangaribowo (A44170017), Radha Adelia Harahap (A44170045), Nada Fathia Rasyida (A44170075) managed to get 2nd place in the ICoSAFS event. Bilal, et al carry the concept of Leuwiculture which is an agro-tourism area based on sustainable agriculture that has various agricultural attractions widely from upstream to downstream.

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9 Held a Professional Study Responding to the Attack of the Brown Stem Leafhopper

The Plant Protection Student Association (HIMASITA) of IPB held a Professional Study 1 activity with the theme “The Peak of Attack of the Brown Stem Planthopper (Nilaparvata lugens) 2021. This activity is a work program of the HIMASITA Professional Division and was held twice, Professional Study 1 was held on Saturday, March 27 2021 which was attended by 99 IPB University students, 27 Sriwijaya University students, 8 Lampung University students, 1 Hasanuddin University student, 1 person from the People's Coalition for Food Sovereignty and 11 people from the Public.

The speakers who attended the Professional Study 1 : Peak Attack of the Brown Stem Leafhopper (Nilaparvata lugens) 2021, namely Dr. Ir. Hermanu Triwidodo, M. Sc, Anik Wiati S.P., and Bayu Aji Krisandi. Dr. Ir. Hermanu Triwidodo He is an Expert Lecturer on Pests at the WBC Department of Plant Protection, Faculty of Agriculture, IPB University. Anik Wiati S.P. is an alumni of Plant Protection batch 48 and a field practitioner. Bayu Aji Krisandi is a student of Plant Protection batch 53 and the Coordinating Minister for Services and Services for BEM KM IPB in 2019/2020.

https://faperta.ipb.ac.id/blog/2021/11/10/himasita-ipb-menggelar-webinar-jambore-perlindungan-tanaman-tema-food-system-implementasi-agroekologi-untuk-pertanian-berkelanjutan/

10 Waqf Forest

Students of the Department of Islamic Economics FEM IPB take part in the Internsip in the Bogor Waqf Forest. As many as 4 students of the Department of Islamic Economics FEM IPB took part in an internship at the Bogor Foundation's Waqf Forest. This internship activity will be held from April 1, 2021 to May 12, 2021. Due to the ongoing Covid-19 pandemic, the activities will be held online. Students help raise funds online (internet marketing) for the expansion of waqf forests.

The 5th Bogor Waqf Forest Pledge Deed (AIW) has been successfully completed, alhamdulillah. The AIW signing was held at the Office of Religious Affairs (KUA) of Pamijahan District, Bogor Regency. Present on the occasion were the Waqf Pledge Deed Making Officer (PPAIW) Mr. Jajang Junaedi, S.Ag, Mr. Abdurrahman who was always the representative of the wakif, Mr. Khalifah Muhamad Ali, SHut, MSi as nazhir, and Mr. Sahrudin and Mr. Edih, MPd as witnesses. It is recorded that the land waqf for the forest is 2,200 meters wide. Thus, the entire Bogor Waqf Forest has reached about 1 hectare.

11 WIRADESA: PENGEMBANGAN USAHA SOSIAL FORESTRY DENGAN SISTEM PENDIDIKAN AGROFOREST

Mahasiswa DMNH IPB University turut berpartisipasi dalam program ini melalui pengembangan usaha perhutanan sosial dengan sistem eduwisata agroforestri di Desa Patengan, Kecamatan Rancabali, Kabupaten Bandung, Jawa Barat secara online dan offline, pada Agustus 2021 hingga Desember 2021. Program ini telah memberikan manfaat, antara lain: menciptakan sumber pendapatan baru bagi masyarakat dan meningkatkan profitabilitas usaha milik masyarakat pedesaan melalui sistem Eduwisata Agroforestri; masyarakat mendapatkan edukasi tentang inovasi pengelolaan lahan dan penggunaan lahan; mendorong masyarakat memiliki karakter dan budaya kewirausahaan; optimalisasi potensi desa, baik di sektor pariwisata maupun komoditas hasil hutan bukan kayu; memotivasi mahasiswa untuk melakukan kegiatan pengabdian kepada masyarakat agar ilmu yang didapat di kampus dapat diimplementasikan dengan memberdayakan masyarakat untuk pembangunan desa.

FMSC FORESTRY VISIT (FFV) 2021

12

FMSC Forestry Visit (FFV) merupakan program kerja FMSC (Forest Management Student Club) yang bertujuan untuk memahami isu kehutanan saat ini, untuk memperkenalkan ruang lingkup kerja kehutanan kepada mahasiswa, dan untuk membangun atau menjaga hubungan baik dengan instansi pemerintah, non-pemerintah organisasi, atau industri di sektor kehutanan FFV 2021 terdiri dari 3 rangkaian kegiatan diskusi dan pendampingan. FFV #1 dan FFV #3 diadakan dalam diskusi webinar, bersama LATIN (24 Mei 2021) dan Telapak (23 Oktober 2021). Sedangkan FFV #2 dilakukan dalam bentuk pendampingan penulisan dengan Forester Act (5 Juni – 3 Juli 2021). Rangkaian FFV 2021 dilaksanakan serentak melalui zoom cloud meeting yang dihadiri 75 mahasiswa aktif DMNH-IPB University.

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13

Himasita IPB Held a Professional Study in Response to the Attack of the Brown Stem Planthopper

The Plant Protection Student Association (HIMASITA) of IPB held a Professional Study 1 activity with the theme “The Peak of Attack of the Brown Stem Planthopper (Nilaparvata lugens) 2021. This activity is a work program of the HIMASITA Professional Division and was held twice, Professional Study 1 was held on Saturday, March 27 2021 which was attended by 99 IPB University students, 27 Sriwijaya University students, 8 Lampung University students, 1 Hasanuddin University student, 1 person from the People's Coalition for Food Sovereignty and 11 people from the Public. The speakers who attended the Professional Study 1 : Peak Attack of the Brown Stem Leafhopper (Nilaparvata lugens) 2021, namely Dr. Ir. Hermanu Triwidodo, M. Sc, Anik Wiati S.P., and Bayu Aji Krisandi. Dr. Ir. Hermanu Triwidodo He is an Expert Lecturer on Pests at the WBC Department of Plant Protection, Faculty of Agriculture, IPB University. Anik Wiati S.P. is an alumni of Plant Protection batch 48 and a field practitioner. Bayu Aji Krisandi is a student of Plant Protection batch 53 and the Coordinating Minister for Services and Services for BEM KM IPB in 2019/2020.

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https://faperta.ipb.ac.id/blog/2021/11/10/himasita-ipb-menggelar-webinar-jambore-perlindungan-tanaman-tema-food-system-implementasi-agroekologi-untuk-pertanian-berkelanjutan/

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Research, Innovation, and Bussiness

14 Development of Near Real Time Land Cover Change Detection Methods Based on Multi-Time and Multi-Sensor Satellite Imagery on a National Scale

This study aims to develop and implement a reliable land cover change detection method that can provide near-real time information on land/forest cover change on a national scale. In the first year, the research focused on characterizing land cover changes, exploring various potential image data and validating the results of detection of changes on a national scale in various types of areas/ecosystems. The activities carried out include collecting field data, drone data and secondary data from image data interpretation as input in analyzing the dynamics of land cover change.Several previous studies have shown that the TERRA-MODIS satellite image data can provide information on land cover changes every 8 days by identifying the pattern of changes in two vegetation indices; NOVI and OAI.

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15 Remote Sensing Data in Support of Peatland Ecosystem Restoration Plans in Sumatra

Post-fire management of peat ecosystems requires information on the dynamics of changes in vegetation that occur both before and after the fire. This is necessary in determining approaches and methods that can be used in the rehabilitation of this peatland, both naturally (succession) and rehabilitation through revegetation (planting program). This study aims to: I) identify vegetation growth patterns, both natural growth (vegetation succession) and vegetation planting (plantation program) on post-fire peatlands, 2) develop a peatland rehabilitation method based on the characteristics of post-fire peat ecosystems using remote sensing technology. (remote sensing) and 3) evaluating the performance results of peatland rehabilitation and their impact on the resulting environmental improvements. The results of this research can be a scientific basis for the peatland rehabilitation program developed by the government. This research is planned to be carried out for 3 years. This research is focused on the characterization of vegetation on post-fire peatlands, both naturally growing vegetation and planted vegetation.

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16

Strengthening Forest Governance: Preparing for The Next 10 Years

This program is a collaboration between Chatham House (CH) and the Center for Transdisciplinary and Sustainability Sciences (CTSS) IPB University. CH is an independent policy agency based in the UK and has been assisting the UK government for approximately 20 years on issues related to forest governance. Through the Forest Governance, Markets and Climate Program (FGMC) it is hoped that it will reduce illegal activities in the forestry sector, provide benefits to communities that depend on forest resources and encourage sustainable forest use in developing countries. In an effort to strengthen forest governance for the next 10 years, CH and CTSS conducted a study on the topic of Effectiveness of the Implementation of the Sustainability Legality Verification System (SVLK) in various forest regimes after the implementation of the Omnibus law in Indonesia: Economic Institutional Perspective. This study aims to find answers to three things related to the effectiveness of the application of SVLK in realizing legal and sustainable timber forest products in state forest areas, private forests and customary forests. In addition, this research is also directed at finding answers to the benefits and costs of SVLK in several forest area regimes and their relationship to the implications between SVLK and the Omnibus law policy. Research activities will be carried out from July 2021 to December 2022. The research will be carried out in several areas that are the research target locations, including Central Java, Yogyakarta, and several other planned areas in the eastern part of Indonesia. The research is expected to be able to contribute to policy makers related to the implementation of the SVLK and provide facts and events faced by the community when implementing the SVLK. Thus, it can be a consideration for forest governance, timber forest products in the next 10

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17

Develop a Predictive Software to Combat Illegal Wildlife Trade and Establishment of Expert's Forum

The Center for Transdisciplinary and Sustainability Sciences (CTSS) IPB University in collaboration with the Wildlife Conservation Society Indonesia Program (WCS-IP) develops artificial intelligence tools to combat wildlife trade and the establishment of a wildlife expert forum. This program starts in December 2020 and ends in November 2021. This program has two main objectives;

1. Develop artificial intelligence systems and software to predict areas that are prone to trafficking crimes and wildlife poaching. This software was created to assist investigators and law enforcers at the Ministry of Environment and Forestry and the police. The system and software are expected to provide information and instructions for the government to carry out security and law enforcement activities.
2. Establish a communication platform for wildlife experts in Indonesia with the aim of disseminating information and providing the latest developments regarding law enforcement against wildlife crimes. This forum is also a forum for the availability of wildlife experts when needed by the state to serve as expert witnesses in court.

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18 Feasibility study Pembangunan Javan Rhino Study and Conservation Area

Badak jawa (Rhinoceros sondaicus, Desmarest 1822) merupakan salah satu mamalia terlangka di dunia yang kelestarian populasinya di Taman Nasional Ujung Kulon (TNUK) menjadi perhatian seluruh dunia. Populasi badak Jawa di TNUK merupakan populasi yang memungkinkan untuk diselamatkan dari kepunahan. Populasi Badak Jawa berdasarkan hasil Video Trapping Tim Monitoring Badak Jawa BTNUK tahun 2021 ditemukan 73 individu. Rekomendasi Pemerintah Indonesia s Membangun "sanctuary" sebagai jaminan bagi konservasi insitu di TNUK yang juga telah didukung oleh AsRSG (Asian Rhino Specialis Group) yang merekomendasikan Pembuatan Suaka khusus (Rhino Study and Conservation Area). Diharapkan dapat dimanfaatkan untuk memperdalam pengetahuan tentang Badak jawa dan mengidentifikasi cara paling aman dalam pemeliharaan dan pemindahan/translokasi Badak jawa. Fokus JRSCA dengan demikian adalah mengembangkan habitat yang dikelola secara intensif untuk memperluas habitat alamiah Badak Jawa di TNUK guna mewujudkan 4 fungsi penting, yaitu: ► Meningkatkan populasi Badak Jawa di habitat alamnya melalui pengelolaan habitat yang intensif; ► Mempersiapkan individu Badak Jawa untuk ditranslokasikan ke habitat kedua yang telah disiapkan secara matang sebelumnya; ► Mengembangkan teknik konservasi eksitu Badak Jawa; ► Mengembangkan ekoturisme berbasis kemitraan masyarakat, pemerintah dan dunia usaha

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EcoSystem Ver. 2.0: Sistem Pintar Deteksi Cepat Konversi Lahan

Pengembangan Ecosystem Ver.2.0 ditujukan untuk menyediakan beberapa informasi penting terkait monitoring tutupan lahan yaitu: 1) Monitoring perubahan tutupan lahan; 2) Early Warning System untuk perubahan tutupan vegetasi per 8 hari dan 3) Distribusi komoditas strategis nasional, yaitu sawit, karet, kopi, dan kakao. Otomatisasi metode deteksi perubahan tutupan hutan skala nasional dilakukan pada tahun 2018-2020. Aplikasi teknologi ini akan mempermudah pengelolaan zona penyangga, perencanaan dan pemantauan kawasan konservasi, kawasan lindung dan kawasan wisata alam, dengan memberikan data dan informasi deforestasi pada kawasan tersebut secara cepat.

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20 Riset Bioekologi dan Konservasi Langur Borneo

Minimnya penelitian bioekologi (habitat dan preferensi pakan, populasi dan sebaran, pergerakan dan homerange, aktivitas dan perilaku sosial) telah mendorong pada naiknya level keterancaman menurut red list IUCN sampai pada tingkat kritis (Critically Endangered/CR). kegiatan pelatihan kepada staff balai dan tenaga lapang yang akan terlibat dalam penelitian, pada tahun pertama telah dilakukan kajian mengenai distribusi dan populasi, karakteristik habitat, perilaku sosial, aktifitas harian dan pola penggunaan habitat, analisis tipe habitat dan pakan langur, koeksistensi langur, kohabitasi langur dengan primata lain, potensi pengembangan ekowisata primata, pengumpulan sampel DNA. Riset dilakukan mulai Maret 2021 – Maret 2023 (2 tahun), saat ini hampir selesai untuk tahun pertama. Manfaat kegiatan riset ini yaitu rekomendasi aksi konservasi Lutung Kalimantan P chrysomelas s sp cruciger di wilayah TNDS.

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21 Penangkaran Satwa Liar

Program pengembangan penangkaran satwaliar terdiri dari pengembangan sumberdaya manusia pengelola dan pengembangan fasilitas penunjang.

a. Pengembangan SDM Peningkatan kapasitas sumberdaya manusia pengelola penangkaran dilakukan melalui kegiatan pelatihan kepada staff lapang oleh departemen/unit. Tenaga pelatih (trainer) merupakan penangkar (breeder) yang telah sukses dan mendapat predikat sebagai salah satu penangkar terbaik menurut Kementerian Lingkungan Hidup dan Kehutanan pada tahun 2020.
b. Pengembangan fasilitas penangkaran Fokus kegiatan pengembangan dilakukan untuk dua taksa satwaliar yaitu burung dan mamalia. Saat ini satwa koleksi untuk taksa burung diantaranya adalah jalak bali (Leucopsar rotschildi), jalak suren (Gracupica contra), kucica kampung (Copsycus saularis), kucica hutan (Copsycus malabaricus), ayam hutan merah (Gallus gallus), sedangkan untuk mamalia terdiri dari rusa timor (Cervus timorensis) dan rusa totol (Axis axis). Kegiatan pengembangan dimulai dari renovasi kandang breeding burung yang sudah berusia lebih dari 20 tahun. Sebelum di perbaiki, kandang ini merupakan fasilitas untuk penangkaran beo nias (Gracula religiosa) namun kondisinya sebagian telah ambruk karena struktur bangunan yang sudah rusak berat sehingga tidak dapat digunakan untuk pengembangbiakan.

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22

Penggunaan kamera jebakan dan drone untuk studi ekologi dan konservasi satwaliar

Teknik pemantauan kehati Indonesia yang kedepan diperkenalkan sebagai “Biodiversity Smart Monitoring” melalui penggunaan kamera jebak dan drone sebagai teknologi 4.0 yang efektif, efisien dan selaras dengan regulasi serta etika pemantauan satwa akan menjadi teknik baru yang dapat diandalkan dalam menyediakan data potensi kehati Indonesia. Sudut pandang yang luas dengan cakupan area yang luas dalam setiap kegiatan penerbangan drone mengatasi beberapa masalah visibilitas dan deteksi kehati sebagai akibat kompleksitas habitat di hutan tropis. Kamera jebak dan drone yang dilengkapi dengan kamera spektrum tampak dan kamera termal inframerah memungkinkan deteksi dan identifikasi kehati dilakukan lebih mudah dan akurat karena memadukan tampilan morfologi utuh satwaliar dalam bentuk foto/video dan karakteristik termal yang khas pada setiap jenis satwaliar. Secara sederhana tanda panas yang terekam pada drone membantu mendeteksi spesies yang tidak mudah terlihat dalam citra tampak, sementara citra tampak secara rinci memungkinkan identifikasi spesies. Lebih lanjut, sistem kerja pada drone yang memungkinkan otomatisasi menjadikan pemantauan kehati menjadi efisien, mudah, hemat biaya dan dengan tingkat gangguan yang lebih rendah sehingga dapat menjamin keamanan dan kelestarian lingkungan

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Characterization of the Outstanding Universal Value of the Sangkulirang-Mangkalihat Karst in East Kalimantan for the Development of Geopark

The object of the study is the Sangkulirang-Mangkalihat karst area, which is located in Berau Regency and East Kutai Regency, East Kalimantan Province. Most of the data on geodiversity characteristics were obtained from studio analysis of previous research results, especially those carried out by the Karst Study Group of the UGM Faculty of Geography in 2016 s.d. 2019. Field research will be conducted from March – October 2021 and is an effort to strengthen data, especially the morphological characterization of karst cones which have the potential for unique global scale values. This activity is very relevant to proposing the Sangkulirang-Mangkalihat karst area to become a UNESCO Global Geopark. The proposal requires international publications written by researchers from the proposing country. The publication that is the target of this research will be very helpful in proposing the Sangkulirang-Mangkalihat Earth Park.

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24 Konsultasi Final Penilaian NKT-SKT di Areal izin PT. Perkebunan Nusantara V

1. Deskripsi Kegiatan: Salah satu tujuan kegiatan ini bertujuan untuk mensosia-lisasikan jenis-jenis tumbuhan yang dilindungi dan/atau langka, serta upaya pengelolaan dan pemantauannya.
2. Waktu dan Tempat Pelaksanaan: 27 Desember 2021 di Mahardika News
3. Manfaat Kegiatan: Meningkatkan pengetahuan masyarakat tentang jenis-jenis tumbuhan yang dilindungi dan/atau langka, serta upaya pengelolaan dan pemantauannya
4. Luaran atau Capaian Kegiatan: Stakeholder mengetahui jenis-jenis tumbuhan yang dilindungi dan/atau langka, serta memahami upaya pengelolaan dan pemantauannya

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Konsultasi Final Penilaian NKT-SKT di Areal izin PT. Perkebunan Nusantara V

This activity was held in collaboration with PPLH IPB and GIZ Indonesia, where GIZ Indonesia is a cooperation partner of the Indonesian Ministry of Agriculture. In its implementation, this activity coordinates & consolidates with relevant stakeholders such as the Putussibau Agriculture and Food Service, Putussibau Bappeda, GIZ Kapuas Hulu, GIZ Palu, Department of Highways and Spatial Planning of Central Sulawesi Province, Bappeda of Central Sulawesi Province, Plantation and Livestock Service Office of Central Sulawesi Province. , Central Sulawesi Provincial Forestry Service, Lore Lindu National Park Office and local governments from the sub-district level, village heads to customary leaders.

SASCI+ focuses on commodities such as natural rubber, palm oil, cocoa and coffee in two biosphere reserves in West Kalimantan and Central Sulawesi. Commodities that are focused in West Kalimantan, especially in Kapuas Hulu Regency, are rubber and oil palm plantations. Meanwhile, commodities that are focused on Central Sulawesi include Palu City and four other districts (Sigi, Donggala, Poso, Parigi Moutong) are cocoa and coffee.

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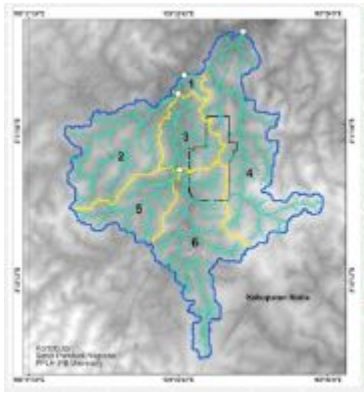
https://journal.ipb.ac.id/index.php/jli/announcement

Erosion Study Around Suban Area



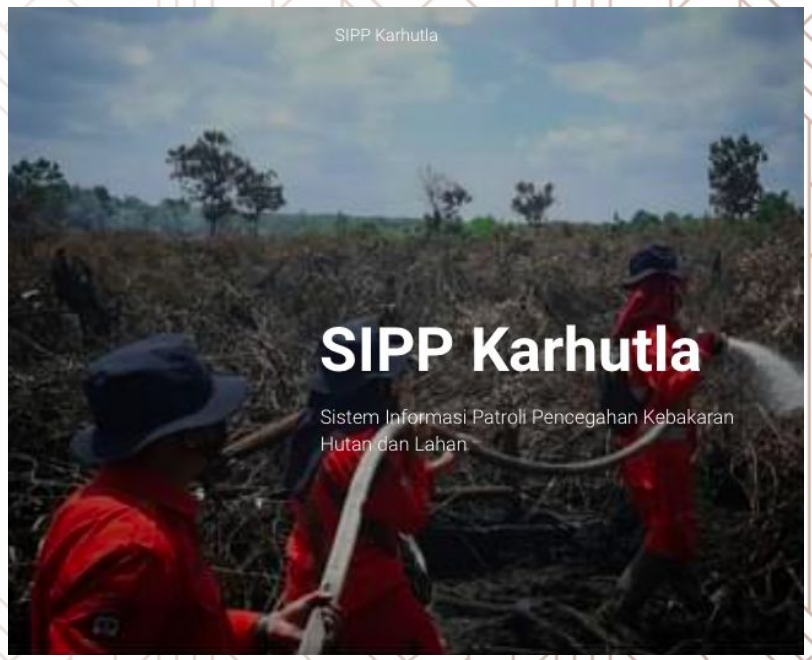
Due to the high responsibility of the company towards environmental sustainability, CPGL in collaboration with PPLH-IPB conducted a study of possible erosion events around the Suban Cos Plant area. The study method used is the identification of the catchment area using the SWAT (Soil and Water Assessment Tool) model and erosion prediction using the USLE (Universal Soil Loss Equation) equation. The results of the SWAT model analysis, formed 6 sub catchment (SC) around the SGP area. The recommendations generated based on the results of this study include:

1. IMinimize land clearing only as needed.
2. Manage open land and land with sloping topography in accordance with Soil and Water Conservation (KTA) rules.
3. Prepare procedures for clearing land, for example by making traps sediment (sediment trap).
4. Pay attention to the management and placement of cutting soil and excavated soil, so as not to carry run off water into the drainage channel.

27

Patroli Karhutla: Aplikasi Patroli Terpadu dalam Mendukung Kebijakan Pencegahan Kebakaran Hutan dan Lahan (Kerjasama dengan KLHK).

Pada tahun 2015, total luas kebakaran hutan dan lahan (karhutla) mencapai 261.060,44 hektar, yang merupakan kejadian karhutla terparah sepanjang tahun 2013 hingga 2018 (Kemenlhk 2018). Pemerintah sudah mengeluarkan Instruksi Presiden Republik Indonesia Nomor 11 Tahun 2015 tentang Peningkatan Pengendalian Kebakaran Hutan dan Lahan. Prof Dr. Imas Sitanggang, S.Si, M.Kom bersama beberapa peneliti seperti Dr. Lailan Syaufina melihat bahwa potensi bahaya yang sangat besar apabila penanggulangan kebakaran hutan ini tidak diatasi dengan baik. Oleh karena itu, dirancang suatu sistem baik berbasis web dan berbasis mobile.



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Aplikasi ini dimotori oleh Prof. Dr Imas sitanggang bersama dengan tim mengembangkan aplikasi yang disebut dengan Patroli Karhutla. Proses implementasi diawali dengan membangun aplikasi mobile untuk akuisisi data patroli terpadu karhutla. Hasil akuisisi data ini disimpan ke dalam sebuah basis data patroli terpadu. Selanjutnya, data yang sudah dikumpulkan tersebut dapat diakses melalui aplikasi berbasis web untuk keperluan manajemen, monitoring dan pelaporan data patroli terpadu (tim manajerial). Aplikasi ini masih dapat digunakan hingaa saat ini.

http://karhutla.apps.cs.ipb.ac.id

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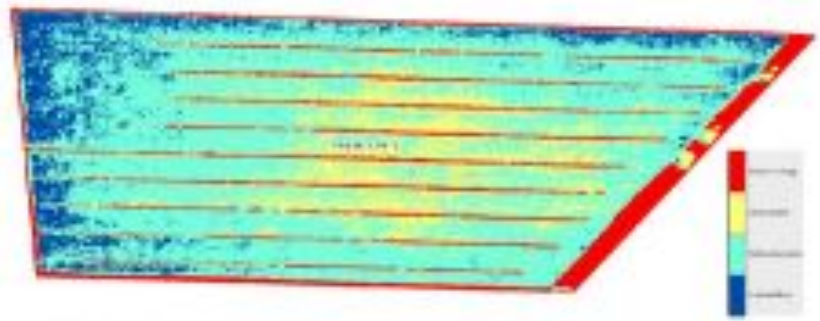
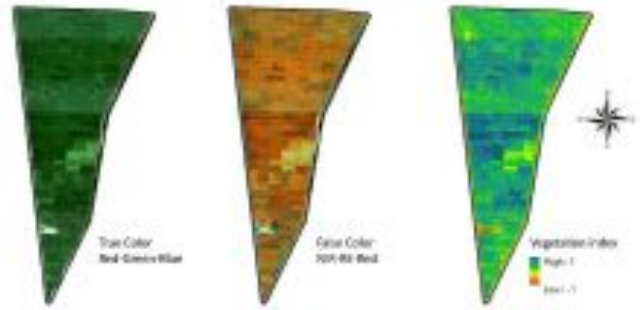
Rice Plant Health Detection Map by Multispectral Aerial Photography

One of the activities of precision and smart farming models in farmer corporations is the early detection of rice plant health (detection of pests and diseases). Early detection of plant health is done by operating a multispectral drone (multispectral aerial photography). Pest and disease attacks that occur can be mapped and then control measures are taken. Early detection of pest and disease attacks is a smart technology in controlling plant pests and diseases. This method can be continued by developing sensors so that they can be monitored from the outbreak control room.





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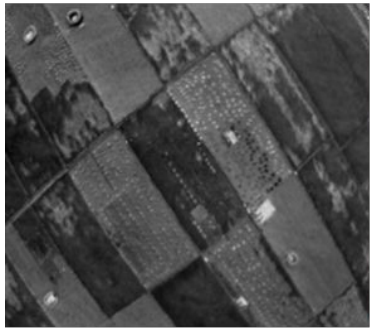
https://faperta.ipb.ac.id/blog/2021/11/12/rice-plant-health-detection-map-by-multispectral-aerial-photography

Smart Detection of Rice Plant Health

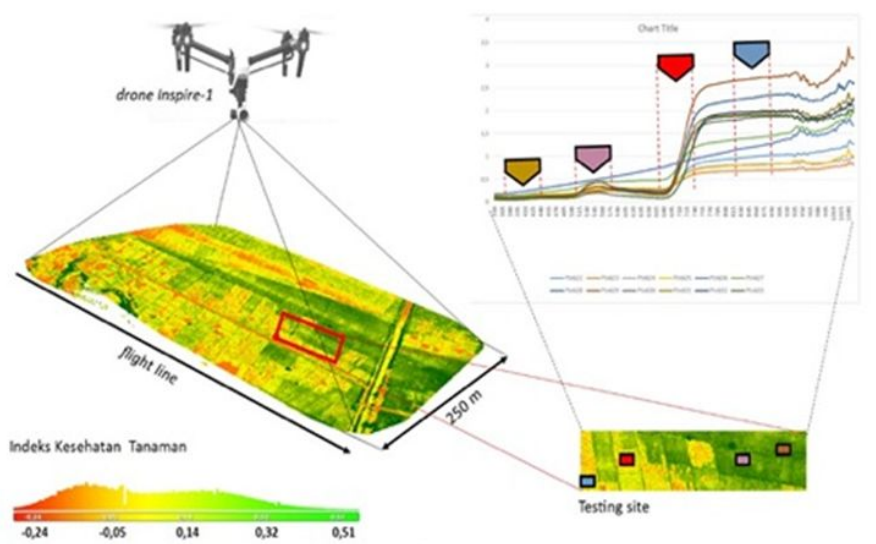
Pros::

1. Development of damage assessment method Rice due to floods, droughts and pests and plant disease
2. Remote sensing method & spatial technology new, with thermal camera drone/multispectral/ hyperspectral, satellite image data, photoradio metric, theodolite, chlorophyll meter, image processing and recognition software digital object.



Kenampakan suhu pada lahan padi pasca panen

Frekuensi banjir hasil pengolahan citra dan Sentinel



Penggunaan drone untuk melihat kesehatan tanaman dan didukung data lapang

1. Terbentuk program GITIIA (*Geospastial Information Technology for Integrative and Intelligence Agriculture*)
2. Pedoman untuk menentukan kerusakan padi

https://stp.ipb.ac.id/wp-content/uploads/2021/08/Paparan-Rektor-di-Hakteknas-05082021.pdf

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SUSTAINABLE DEVELOPMENT GOALS

Campus Operation

30 Pengembangan Taman Hutan Kampus

Penetapan Taman Hutan Kampus IPB Dramaga ditandai dengan terbitnya SK Rektor No. 086/Um/1995 pada saat itu melalu Rektor Profesor Aman Wirakartakusumah dan mengamanatkan pengelolaannya kepada Fakultas Kehutanan. Luas wilayah yang ditunjuk berdasarkan SK tersebut adalah 12 hektar dan pada saat itu telah dilakukan penanaman jenis Mahoni (Swietenia sp) dan Pinus (Pinus sp) seperti yang saat ini terlihat di wilayah blok Cikabayan. Sejak saat itu, proses pembangunan terhenti dan pada akhirnya tidak ada perkembangan lebih lanjut. Berselang 23 tahun kemudian, kegiatan pembangunan mulai dilakukan lagi tepatnya pada tahun 2018 yang ditandai dengan penandatanganan bersama antara Rektor, Dekan Fakultas Kehutanan dan Himpunan Alumni Kehutanan serta kegiatan penanaman bibit buah-buahan dan flora langka. Master plan dari pembangunan taman hutan kampus terdiri dari tiga blok yaitu blok pendidikan, blok ekowisata dan blok galery konservasi, dan saat ini masih fokus pada blok pendidikan. Kegiatan yang saat ini telah dilakukan diantaranya adalah penanaman dengan jenis durian, merbau, meranti, sereh wangi, tanaman obat, tanaman pangan dengan teknik hydroponik, pembangunan sarana jalan setapak, pembangunan tempat diskusi pembelajaran alam terbuka (outdoor learning).

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https://faperta.ipb.ac.id/blog/2021/11/10/himasita-ipb-menggelar-webinar-jambore-perlindungan-taman-tema-food-system-implementasi-agroekologi-untuk-pertanian-berkelanjutan/

Kampus Biodiversitas

31

1. Kampus Biodiversitas - Flora & Fauna Photo Hunt 2021: Fauna dan Flora Photo Hunt merupakan kompetisi bertaraf nasional yang dapat diikuti oleh seluruh mahasiswa aktif di Indonesia dengan objek flora dan fauna di alam bebas sekitar lokasi tempat tinggal.
2. Kampus Biodiversitas - Webinar Series Tiga Pilar Konservasi: Rangkaian empat webinar berisi pemaparan materi dan diskusi mengenai flora, fauna, dan alam Indonesia sesuai dengan fokus kajian kelompok pemerhati yang ada di Himakova. Materi yang dipaparkan berkaitan dengan potensi, pemanfaatan, dan pengelolaan keanekaragaman hayati dengan submateri konservasi keanekaragaman hayati, pemanfaatan keanekaragaman hayati, konflik satwa dengan manusia, dan ekowisata di Indonesia

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Link Activity:
https://primata.ipb.ac.id/

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SUSTAINABLE DEVELOPMENT GOALS

Community Engagement

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Faculty of Agriculture IPB Signs Cooperation with Mount Ciremai National Park Office

Cooperation Agreement between Faculty of Agriculture, IPB and Mountain Ciremai National Park Office. The signing of the PKS was carried out in March 26, 2021 at the Gunung Ciremai National Park Office, by the Dean of the Faculty of Agriculture, Dr. Sugiyanta, and the Head of the TNGC Kuswandono, S Hut, MSi. An important point that was agreed was that there was a 100 ha cooperation area which included a core zone, a jungle zone and a buffer zone, which would be used as a Classroom and Field Laboratory for the lecturers and students of Faperta IPB. The agreed activities were conducting KKNT, field practice internships, and also carrying out activities for the implementation of MBKM. The upcoming KKNT will be allocated 50 students to support the development program that has been agreed upon. Development programs that will be carried out include Bioprospecting Miktob Agriculture, Insect Bioprospecting, Bioprospecting Orchids and Indigenous Vegetables, Healthy Agriculture Development, and Agroecotourism Development.

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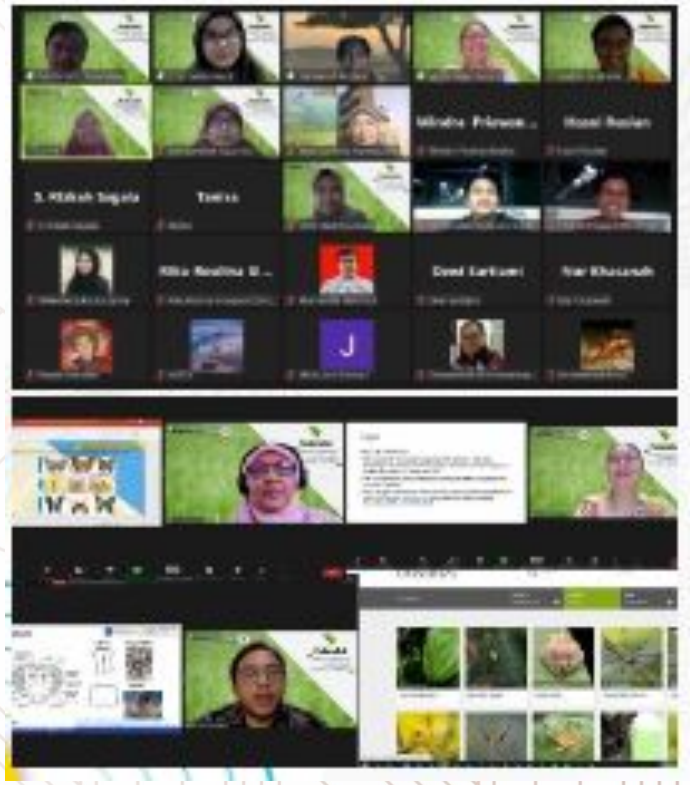
https://faperta.ipb.ac.id/blog/2021/11/10/himasita-ipb-menggelar-webinar-jambore-perlindungan-tanaman-tema-food-system-implementasi-agroekologi-untuk-pertanian-berkelanjutan/

33

CTSS IPB University invites Youth to Care about Pollinating Insects

Center for Transdisciplinary and Sustainability Sciences (CTSS) held an iNaturalis training for Indonesian pollinating insects, 20/11. This training is provided for young people who have an interest in pollinating insects. This training is a collaboration between CTSS IPB University and the Indonesian Entomology Association and has the support of Syngenta, This training aims to invite youth to raise their awareness of pollinating insects in Indonesia. The role of youth in the sustainability of pollinating insects is very important because there is currently a global decline in bee populations. In fact, life today is supported by plants that are 75 percent pollinated by pollinating insects. In this training, the youths were introduced to various types of pollinators, especially insects. There are various kinds of pollinating insects such as bees, butterflies, ants, beetles and other types of insects. However, the most common pollinating insects are bees and butterflies. At the same time, the iNaturalis application was introduced in the identification and inventory process of organisms including insects. The iNaturalist application is an application like any other social media. This application can state the presence (presence) of an organism, so, when uploading a picture of an organism, the user who uses the application will help identify the organism. Through this application, it is possible to increase community participation in the development of science and animal conservation. Not only that, by using the iNaturalist application, the community can help make an inventory of animals so that they can support conservation efforts.



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https://faperta.ipb.ac.id/blog/2021/11/10/himasita-ipb-menggelar-webinar-jambore-perlindungan-tanaman-tema-food-system-implementasi-agroekologi-untuk-pertanian-berkelanjutan/

34

PROGRAM MASYARAKAT PEDULI ALAM PUNTANG (MELINTANG)

Program Masyarakat Peduli Alam Puntang (MELINTANG) adalah program konservasi lingkungan dengan pendekatan pemberdayaan. Kawasan Gunung Puntang yang merupakan habitat Owa Jawa (Hylobates moloch) memiliki sejumlah tantangan dalam upaya konservasinya. Pendekatan pemberdayaan yang melibatkan masyarakat lokal diharapkan menjadi salah satu solusi. Program ini merupakan bagian dari kegiatan CSR PT Pertamina EP Zona 7 Subang Field yang bekerjasama dengan CARE LPPM IPB sebagai pelaksana pendampingan masyarakat. Program ini terlaksana sejak tahun 2019 hingga saat ini. Lokasinya di Gunung Puntang, Desa Campakamulya, Kecamatan Cimaung, Kabupaten Bandung. Terdapat 3 kegiatan utama dari Program MELINTANG yaitu pendampingan petani kopi, pengembangan eduwisata Puntang dan pengembangan tanaman obat. Pendampingan dilakukan terhadap 137 Kepala Keluarga (KK) warga Desa Campakamulya yang bernaung di bawah Lembaga Masyarakat Desa Hutan (LMDH) Bukit Amanah, 60 orang yang tergabung dalam kelompok Herbanik, dan 7 orang Barista Kafe Puntang Wangi.





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https://faperta.ipb.ac.id/blog/2021/11/10/himasita-ipb-menggelar-webinar-jambore-perlindungan-taman-tema-food-system-implementasi-agroekologi-untuk-pertanian-berkelanjutan/

35 Assistance in Supervision and Verification of Mangrove Enrichment Recovery Activities

On February 24 - 26 2021, PHE ONWJ is required to carry out restoration, referring to the Environmental Function Plan document. PPLH IPB was asked to act as a companion as well as a team of experts in the supervision and verification activities. This activity was carried out in three locations with a directive from the Director General of PPKL KLHK, namely Suka Jaya Village and Sedari Village, Karawang Regency and Pantai Bhakti Village, Bekasi Regency. PHE ONWJ planted 52,000 individual mangroves in the district. Karawang which is spread over five planting locations (Pasir Putih, Mekar Pohaci, Pusak Jaya Utara, Sedari, Tambak Sari and Segar Jaya) and in Kab. Bekasi planted as many as 10,500 individual mangroves spread over two locations (Bakti Beach and Happy Beach). This verification and supervision uses the Plot Sample Permanent (PSP) method from the sample results as many as 88% of mangrove individuals in Sukajaya Village are Healthy, 98% of mangrove individuals in Sedari Village are healthy and 106.77% of mangrove individuals are healthy living in Pantai Bhakti Ka Village. Mrs. Patent Bekasi

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https://journal.ipb.ac.id/index.php/jli/announcement

36 Innovation Exploration Workshop to Biodiversity Care

The workshop was held thanks to the collaboration between the Center for Environmental Research (PPLH). Institute for Research and Community Service (LPPM) IPB University with PHE ONWJ (Pertamina Hulu Energy, Offshore North West Java). Prof. Hefni Effendi, Professor of IPB University was the keynote speaker in the Innovation Exploration Workshop for Caring for Biodiversity. In his presentation, the Head of PPLH IPB University explained a number of innovations that might be applied to maintain biodiversity in the PHE ONWJ mining work area offshore Karawang Regency, Bekasi Regency, and Thousand Islands Regency. According to him, in the offshore locations in the three areas there are a number of ecosystems. Namely mangrove ecosystems, coral reefs, seagrass beds and traditional fishing areas (one day fishing). In addition, there are also endemic Javan langurs (Trachypithecus auratus) in Muara Gembong, Bekasi. The condition of mangroves in general is not healthy when viewed from the abundance of the population, so a number of innovative efforts are needed to restore a number of mangroves that have been and are currently experiencing a decline in health.

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37 Strategic Environmental Studies (KLHS)-Master Plan Sintang District Sustainable Plantation

activities for preparing the KLHS-Master Plan for Plantation Management for Sintang Regency 2022-2040 include: (1) identification and formulation of sustainable plantation issues in Sintang Regency; (2) identification of Policy, Plan, and/or Program (KRP) content material that has the potential to have an impact on environmental conditions; (3) analysis of the impact of the identification and formulation of sustainable development issues and the content of Policies, Plans, and/or Programs (KRP) that have the potential to have an impact on environmental conditions; and (4) formulation of alternatives and recommendations for improvement of PPP in the Sintang District Estate Management Master Plan for 2022-2040 which integrates the principles of sustainable plantation development. The scope of the area covers an area of 532,148 ha in the Plantation Area (APL) function in Sintang Regency, West Kalimantan Province.

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38 PERINGATAN HARI BUMI

- Bertepatan dengan peringatan Hari Bumi pada tanggal 22 April 2021, Prodi PSL melakukan kegiatan dwi tunggal yaitu penanaman pohon "Butea monosperma" di pagi hari dan webinar dengan tema “Bencana Alam dan Resiliensi Komunitas” pada siang harinya.
- Pada kegiatan tersebut selain dihadiri oleh pengelola Prodi PSL, juga dihadiri oleh Ketua DPRD Kota Bogor, rekan-rekan dari Konsil Kota Pusaka Bogor, mahasiswa PSL (ecologica), perwakilan IPB (Dr. Erizal), dan rekan-rekan media.

Penanaman Pohon *Butea monosperma* oleh Pengelola Prodi PSL

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URL - http://psl.ipb.ac.id/2021/04/22/penanaman-pohon-samida-dalam-rangka-memperingati-hari-bumi-dan-45-tahun-psl-ipb/

39 Kontribusi Dosen PS-PSL IPB pada kegiatan Kalpataru 2021

- Penghargaan Kalpataru telah melalui perjalan panjang 41 tahun sejak tahun 1981. Pada tahun 2021 dosen PS-PSL memberikan kontribusi penting dalam kegiatan Kalpataru. Prof. Hadi S. Alikodra dosen PS-PSL IPB merupakan Ketua Dewan Pertimbangan Penghargaan Kalpataru. Selain itu, Dr. Ir. Soeryo Adiwibowo, MS. , dosen yang juga Ketua Himpunan Alumni PS PSL, menjadi anggota Tim Dewan Pertimbangan Penghargaan Kalpataru.
- Pelaksanaan bulan Oktober 2021

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URL - http://psl.ipb.ac.id/2021/10/15/kontribusi-dosen-ps-psl-ipb-pada-kegiatan-kalpataru-2021/


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