



Supplementary

# Sustainability Report 2021

**SDG 13:**

Take urgent action to combat climate change and its impacts

**13** CLIMATE  
ACTION





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# Learning Program

1

## Summer Course: “Reducing Carbon Footprints” and Launching Double Master Degree

Department of Resource and Environmental Economics (ESL) Faculty of Economics and Management (FEM) IPB University in 2021 again held the ESL Summer Course program from August 9-27 2021. The theme raised in the summer course program which was attended by 232 participants from 13 countries was “Reducing Carbon Footprints: Lesson Learned for Post COVID -19 World” and will be held from 9 to 27 August 2021. This activity is also an event to launch a dual master degree program between IPB University and Western Sydney University (WSU) Australia. Rector of IPB University -Prof. Arif Satria- welcomes the collaboration between IPB University and WSU which has been built since 2016, which is expected to strengthen relations between Australia and Indonesia. Dean of FEM IPB University -Prof. Nunung Nuryartono stated that the collaboration of this Double degree joint program can develop FEM targets in increasing research partnerships globally.



13 CLIMATE ACTION

<https://esl.ipb.ac.id/berita/esl-fem-ipb-university-launching-dual-master-degree-program-dengan-wsu-australia>  
<https://ipb.ac.id/news/index/2021/08/fem-ipb-university-launches-dual-master-degree-program-with-wsu-australia/b/e1779f64fa858542e3b1ee27bd63c7b>



sustainability.ipb.ac.id



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# 2

## “Forest Operations and Climate Change: The RIL-C Approach”

JMHT in collaboration with the Faculty of Forestry and Environment (Fahutan) IPB (IUFRO) division 3.07.00 and the Faculty of Forestry and Environment Universiti Putra Malaysia (UPM) held a webinar with the theme Forest Operations. This webinar aims to increase public attention to the topic and become a means to introduce JMHT to a broader audience. The webinar was held on July 21, 2021, with the topic "Forest Operations and Climate Change: The RIL-C Approach" and presented an opening session by the dean of Fahutan IPB and Prof. Dr. Woodam Chung from Oregon State University, who is also the coordinator of IUFRO's Division 3, followed by a presentation and discussion session guided by Prof. Gs Dr. Mohd Hasmadi Ismail from the UPM Faculty of Forestry and Environment. This webinar presents speakers from academics, researchers, and world practitioners:

1. Prof. Dr. Elias (Professor of the Department of Forest Management, Faculty of Forestry and Environment IPB).
2. Dr. Ismail Parlan (Director General of the Malaysian Forest Research Institute).
3. Dr. Iman Santoso (Vice Chairman of the Indonesian Forest Entrepreneurs Association).







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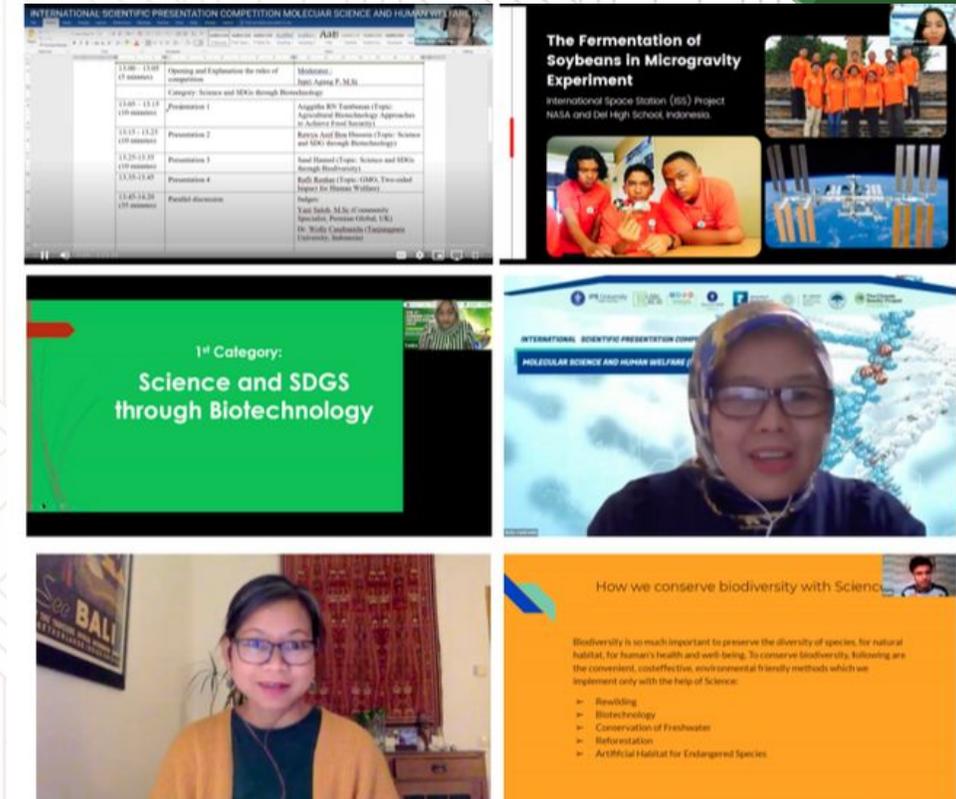


# Student Activities

## 4

# International Scientific Presentation Competition MOSHUEL: Molecular Science for Climate Change and Sustainable Living

International Scientific Presentation Competition MOSHUEL which is integrated with the 4th Summer Course on Biology 2021 has been organized by the Department of Biology, FMIPA, IPB University. Implementation of this event provided many benefits, both to the participants and the cooperative relationship between the institutions involved. For participants, this activity provides knowledge and a more complete understanding of the role of molecular basic science in various fields of applied science. In addition, participants are also able to identify and analyze Indonesia's biological diversity that can be used as the basis for the development and innovation of the molecular science technology. The International Scientific Presentation Competition MOSHUEL was attended by 29 participants, from 21 institutions both Indonesian and foreigners. Prior to participating in the competition, participants attended coaching with the experts, such as Dr Eneng Nunuz Rohmatulayally (University of Padjadjaran) and Dr Sarah Nila (University College London). This event was held on 18 October - 12 November 2021 and was aimed to solve three SDGs problems, namely: (4) quality of education, (13) climate action, and (17) partnerships for the goals.





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# Research, Innovation, and Bussiness



# 5 Key Performance Indicators (KPI) for the NI-SCOPS (National Initiative for Sustainable and Climate Smart Oil Palm Smallholders) Program in Indonesia

Centre for Climate Risk and Opportunity Management IPB University (CCROM-IPB) and Palm Oil Research Center have been selected as National Research Partners (NRP) to formulate Key Performance Indicators and their assessment methods, which will be used to evaluate the impact of the NI-SCOPS project in improving the welfare of oil palm smallholders, increasing the application of climate-adaptive practices and the application of oil palm-based agroforestry after implementing sustainable practices.

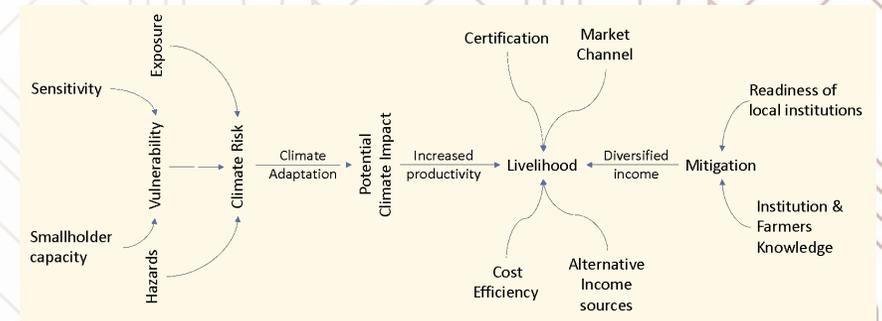
NI-SCOPS (National Initiatives for Sustainable and Climate-Smart Oil Palm Smallholders) is a program supported by IDH and Solidaridad to realize sustainable and adaptive oil palm plantations. This program aims to mainstream that the palm oil sector plays a role in the SDGs, in line with the goals of the Paris Agreement to reduce greenhouse gas emissions and improve the lives of smallholders and workers in the oil palm sector.



The NI-SCOPS program has three different Key Performance Indicators (KPI): addressing livelihoods, mitigation, and adaptation in an integrated manner.

- ❑ The first KPI is the percentage of farmers who experienced an increase in income.
- ❑ The second KPI is an index that shows the level of application of good agricultural practices in smallholder oil palm plantations that are adaptive to climate variability and change and lead to climate-resilient agriculture.
- ❑ The third KPI, NI-SCOPS seeks to enable smallholders to mitigate climate change by facilitating the settlement of land status for smallholders in forest areas and supporting the implementation of sustainable forest management/agroforestry for smallholders.

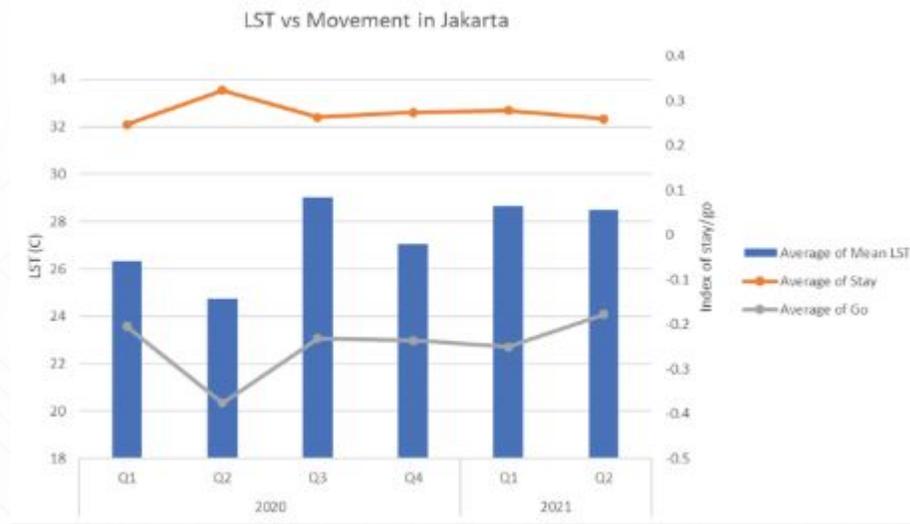
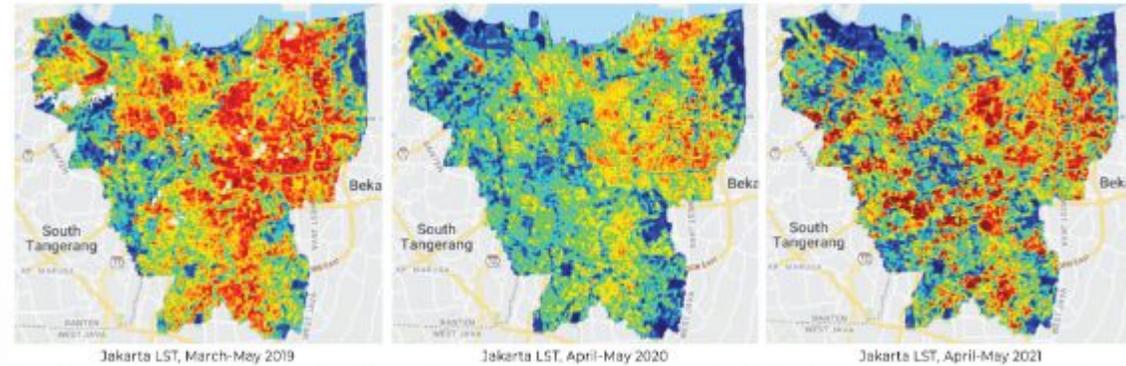
The three KPI are interconnected. The application of climate-adaptive agricultural practices in oil palm plantations (KPI-2) can reduce the vulnerability of agricultural systems to the impacts of climate variability (climate hazards) and climate change, thereby increasing oil palm productivity. Furthermore, the capacity of smallholders is strengthened by increasing social (institutional) capital, human capital, and financial capital. With an increase in productivity, farmers can get a better income, increasing their standard of living (KPI-1). The application of oil palm-based agroforestry (KPI-3) by farmers in forest areas can improve environmental conditions such as increasing carbon sequestration (KPI-3) and increasing farmers' resilience (KPI-2) because the system provides more diverse income from various sources. Agroforestry system commodities that also improve living standards (KPI-1). The relationship between the three KPI can be seen in the image below.



# 6

## Relation of Mobility Index to Land Surface Temperature During COVID-19 Pandemic in Java Island, Indonesia

This activity limitation has an impact on the dynamics of the Land Surface Temperature (LST). With lower mobility, there will be less transportation and activities that normally contribute to an increase in temperature. This study aims to analyze the relationship between decreasing mobility index and soil surface temperature in four major cities in Java, Indonesia, namely Jakarta, Bandung, Semarang, and Surabaya. The hypothesis proposed is that the PSBB policy has an impact on the decline in LST because human mobility has decreased during the PSBB. This research was funded by the Osaka Gas Foundation of International Culture Exchange (OGFICE) Fiscal Year 2020. PPLH IPB since the 1990s has been entrusted by OGFICE in the Research Grant Program which aims to increase research in the field of technology related to natural gas and alleviation of environmental problems. Apart from IPB, OGFICE also provides grants with other universities such as UI and ITB. This research conducted from Oktober 2020 to August 2021,.



# 7

## Developing Integrated Strategic Instruments to Support the Integration of NDCs into Development Plans and Policies

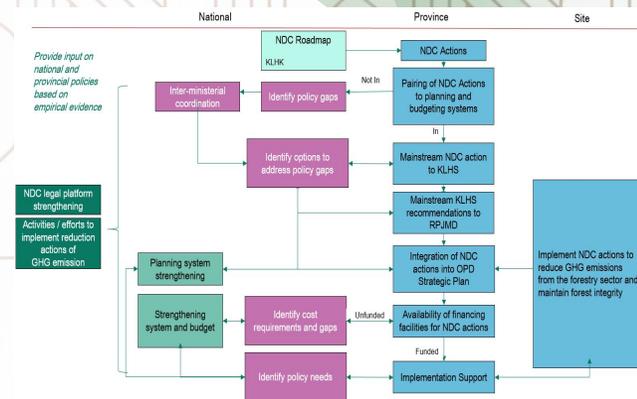
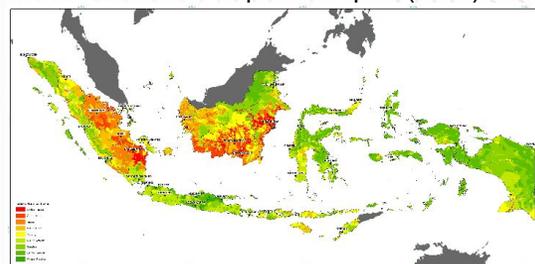
The Government of Indonesia as a party to the UNFCCC has ratified the Paris Agreement through Law Number 16/2016. To carry out the regulatory mandate, Indonesia has submitted a national commitment to contribute to climate change management through the First NDC's (Nationally Determined Contribution) in November 2016. This commitment manifests Indonesia's concern for global warming and climate issues. GHG emission reduction targets will be achieved in the forestry, energy, waste, industrial processes, and product use sectors, as well as agriculture. To implement the elements of NDC mitigation, various policies and regulations have been issued by the Government. The implementation of Indonesia's efforts to achieve the NDC target is going well, one of which is the component of policy formulation and green planning. Supporting the Indonesian government to mainstream NDCs into development plans and policies, as well as investing in reducing emissions from deforestation, forest and peatland degradation, through strengthening government and stakeholder capacity, is directed at three components. First, effective green policies and planning that encourage investment to reduce deforestation and degradation of forests and peatlands, especially in provinces that have large forest areas. Second, mobilize funding for the development of emission reduction investment frameworks and project pathways. Third, increasing the government's knowledge and capacity to make and implement policies, plans, and investments in GHG emission reduction strategies.

In order to achieve these three components, CCROM SEAP IPB in collaboration with the Global Green Growth Institute carried out activities to develop integrated strategic instruments to support the integration of NDCs into the Indonesian government's development plans and policies starting from September 2021 to September 2022. This activity aims to prepare integrated strategic instruments to support the Indonesian government in mainstreaming NDCs into development plans and policies and invest in reducing emissions from deforestation, forest degradation, and peatlands through strengthening government and stakeholder capacities. An integrated strategic instrument for mainstreaming NDCs into development plans and policies is expected to facilitate coordination mechanisms within and across sectors implementing NDC actions.

The main benefit of this activity is effective policies and plans to encourage reduced deforestation and forest and peatland degradation and prevent forest loss, especially in provinces that have large forest areas. The main outputs of this activity are

1. Regional Development Planning and Budgeting Reports designed to adopt Greenhouse Gas emission reductions,
2. Policy Consolidation that allows investment to be entered for the implementation of Greenhouse Gas emission reductions,
3. Policy review reports that enable the implementation of greenhouse gas emission reductions.

In 2021, activities will be located at the national and regional levels, namely in the Provinces of Central Kalimantan and South Kalimantan. By producing three activity outputs from the total 15 activities to be carried out. The three outputs are Template 3 basic map of spatial-based program planning integration, Guidelines or SOPs for using and utilizing spatial-based program planning integration, and the 3rd Biennial Update Report (BUR) Document.



**PANDUAN PEMANFAATAN**  
INTEGRASI PERENCANAAN PROGRAM BERBASIS SPASIAL  
PADA TINGKAT TAKAP UNTUK MENCAPAI TARGET PEMBANGUNAN  
YANG MENJAMIN KEBERLANJUTAN LAYANAN JASA EKOSISTEM

BIRO PERENCANAAN - SEKRETARIAT JENDERAL  
KEMENTERIAN LINGKUNGAN HIDUP DAN KEHUTANAN  
REPUBLIK INDONESIA  
2021

**INDONESIA**  
Third Biennial Update Report  
Under the United Nations Framework Convention on Climate Change

REPUBLIC OF INDONESIA  
2021

Keluaran Kegiatan Tahun 2021

# 8

## Preparation and reporting of the 3rd Indonesia Biennial Update Report to the United Framework Convention on Climate Change (UNFCCC)

Referring to Decision 2/CP17 Paragraph 41, as a result of the 17th Conference of Parties meeting, countries that have ratified the Paris Agreement and are included in the non-Annex 1 category must submit a Biennial Update Report (BUR) document, according to the capabilities possessed, and the level of support received. The Biennial Update Report document contains updated information on greenhouse gas inventories, information on mitigation actions and their impacts, the support needed and received, as well as the monitoring, reporting, and verification (Monitoring, Reporting, and Verification or MRV) process.

In the case of Indonesia, as one of the countries carrying out Reducing Emissions from Deforestation and Forest Degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries (REDD)+, the Biennial Update Report document also covers technical annex for REDD+ activities.

The Government of Indonesia has submitted the first and second BUR documents in 2016 and 2018. The preparation of the 3rd BUR documents began in 2020 through a series of coordination events of relevant ministries and institutions, scientists, and experts, which were coordinated by the Ministry of Environment and Forestry.

In 2021, the Government of Indonesia had submitted a document, Long-Term Strategy for Low Carbon and Climate Resilience, which states Indonesia's vision to achieve net-zero emissions by 2060 or sooner. In this case, the 3rd BUR document plays a role in conveying historical emission information that is transparent, accurate, comparable, comprehensive, and consistent in order to know the development of Indonesia's mitigation action committee.

The 3rd BUR document was submitted to the UNFCCC on 20 December 2021 (<https://unfccc.int/BURs>).



Keluaran Kegiatan Tahun 2021



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# Campus Operation

## IPB Virtual Gowes 2021 for Low Carbon Emission

In commemoration of "Zero Emission Day" as well as the 58th Anniversary of IPB University, the Environmental Research Center of IPB University (PPLH IPB) and the IPB Agrometeorology Student Association (Himagreto) held a virtual cycling competition with the title IPB Virtual Cowes 2021 for Low Carbon Emission with the tagline "Cycling reduces emissions, being productive during a pandemic, serving the country". This event is expected to be able to increase the role of IPB University in supporting the government's plan to reduce emissions. This virtual riding competition will be held from 13 -19 September 2021 through the Relive application and the resulting videos are uploaded via social media, either Instagram or Facebook. This competition event was attended by 44 participants consisting of 21 participants in the student category and 23 participants in the general category consisting of various groups such as BUMN employees, lecturers, researchers, MSME owners, campus education staff, and private employees. there were also participants from other campuses such as UNJ, UCM, and Ehime University-Japan.





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# Community Engagement

# 10

## LECTURER IN COMMUNITY SERVICES (DOSEN MENGABDI)

Responding to the Community Service Program Lecturer from LPPM IPB, the DMNH academic community participated in the program to share knowledge with the public (general) around the IPB University campus in Dramaga, Bogor. The Serving Lecturer activities carried out by DMNH lecturers include: Adding articles that will help homeowners and property buyers invest well. You can also provide them with information about market conditions to know what to do. Another type of content you can include in your newsletter is a column that provides tips and advice on caring for your property. This could include home improvements, landscaping, or maintenance that can be done.



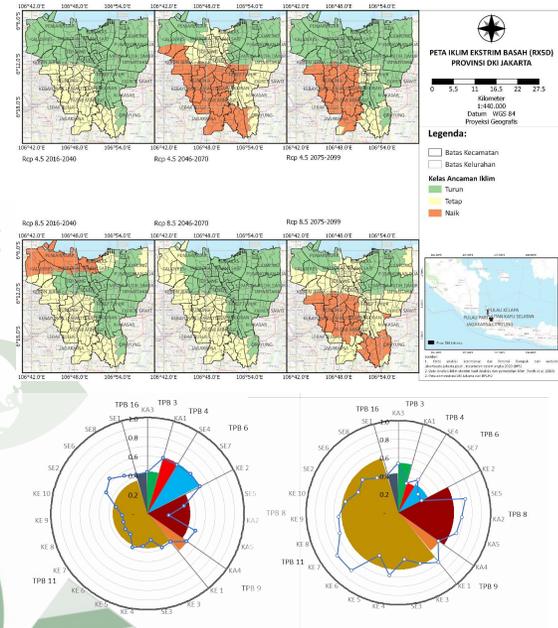
13 CLIMATE ACTION



# Implementation of Adaptation in Order to Strengthen Climate Resilience of DKI Jakarta Province

DKI Jakarta Province is one of the provinces in Indonesia that has experienced the impact of climate change. Rain with high intensity and frequency causes hydrometeorological disasters such as floods. The increase in sea-level rise and high tides causes tidal flooding in the northern coastal areas of Jakarta. Therefore, it is necessary to make adaptation efforts to climate change so as not to cause more significant damage in various sectors in the future. Implementation of adaptation actions to increase adaptive capacity, reduce vulnerability to climate change, and strengthen the climate resilience of DKI Jakarta Province.

In implementing climate-resilient adaptation, the Provincial Government of DKI Jakarta has prepared a document for the Regional Action Plan for Climate Change Adaptation. Evaluation of the planned and implemented adaptation actions needs to be carried out to be used as material for future improvements. The main objective of this activity is to monitor and evaluate the results of the implementation of climate change adaptation activities in DKI Jakarta Province. In addition, it also examines the impact of climate change on social and economic aspects in one of the urban villages in DKI Jakarta.



The analysis carried out to achieve the objectives of this activity is carried out in three stages, namely the identification of priority programs/activities related to climate change adaptation for each SKPD of the DKI Jakarta Provincial Government. This analysis is assessed based on its relevance and contribution to overcoming the problem of climate change vulnerability and handling development aspects related to sustainable development goals (TPB) through the tagging method. The second stage is identifying the factors causing the high level of vulnerability, potential impacts, and the level of urgency for determining locations that require major adaptation programs/activities. The last stage is to survey one selected urban village to assess the socio-economic impacts of climate change.



The analysis results show that as many as 153 programs/activities are at very high priority, or it can be said that these programs/activities contribute to more than one aspect of development or TPB and contribute positively to improving the level of potential impact. Most areas of DKI Jakarta are in the category of medium impact potential, reaching 153 urban villages out of a total of 267 urban villages in DKI Jakarta. In comparison, the total urban villages in the very high impact potential category are 9 villages.

The study of the impact of climate change on social and economic aspects was carried out based on the results of a survey in Rawa Badak Selatan Village, Koja District, North Jakarta City, which has a very high level of potential impact, high climate risk and high urgency. Based on the analysis results, the area of Kelurahan Rawa Badak Selatan has a high level of risk for extreme wetness associated with floods, extreme dryness, and extreme heat. In general, the socio-economic impacts of floods are loss and damage to assets such as damage to buildings and house contents, damage to vehicles, and damage to kiosks. In addition, floods also impact work, namely disruption of productivity so that they cannot work when floods have an impact on loss of income with a range between Rp. 25,000/day to more than Rp. 200,000/day. During and after the flood incident, there was also an increase in diseases such as skin diseases, flu and diarrhea.

A relatively good form of adaptation effort was carried out in RW 05, precisely in RPTRA Rasela, which is one of the pilot areas of the Climate Village Program with activities such as hydroponics, aquaponics, utilizing household waste and animal waste and feces, and planting rice fields in the city.

# 12 Twibbon Potential to Save Emissions

PPLH IPB University launched the Emission Saving Potential Twibbon application (<http://pplh.ipb.ac.id/twibbon-emisi/>) in commemoration of "Zero Emission Day" as well as the 58th Anniversary of IPB University. Similar application to <https://twibbon.com/> or <https://www.twibbonize.com/> will not only produce photos of users that are equipped with attractive special frames, but there will be information on the potential emissions saved by users due to cycling. The resulting images can then be downloaded and distributed by users to various social media.

Estimation of potential emissions is calculated with the assumption that participants use motorized vehicles. CO<sub>2</sub> Emission calculated using the Tier-1 method in accordance with the Guidelines for the Implementation of the National Green House Gas Inventory (KLH 2021). Total mileage based on fuel is assumed based on the results of research by Zulfikri & Maemunah (2010). Saharuna (2017). and Manorek et al. (2018).





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