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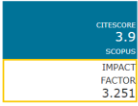
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Dear Dr. Hermawan,

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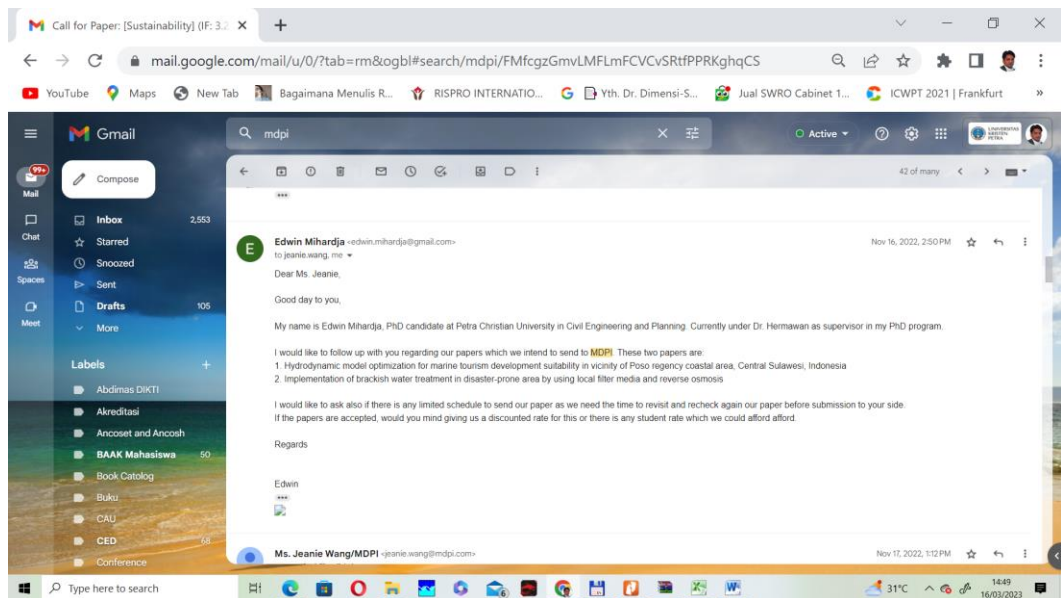
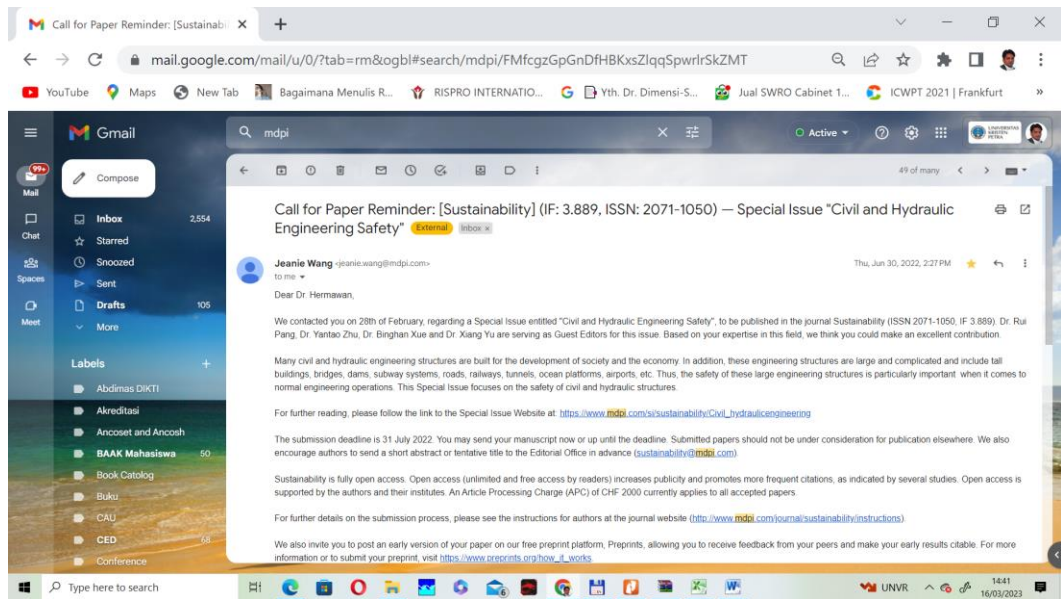
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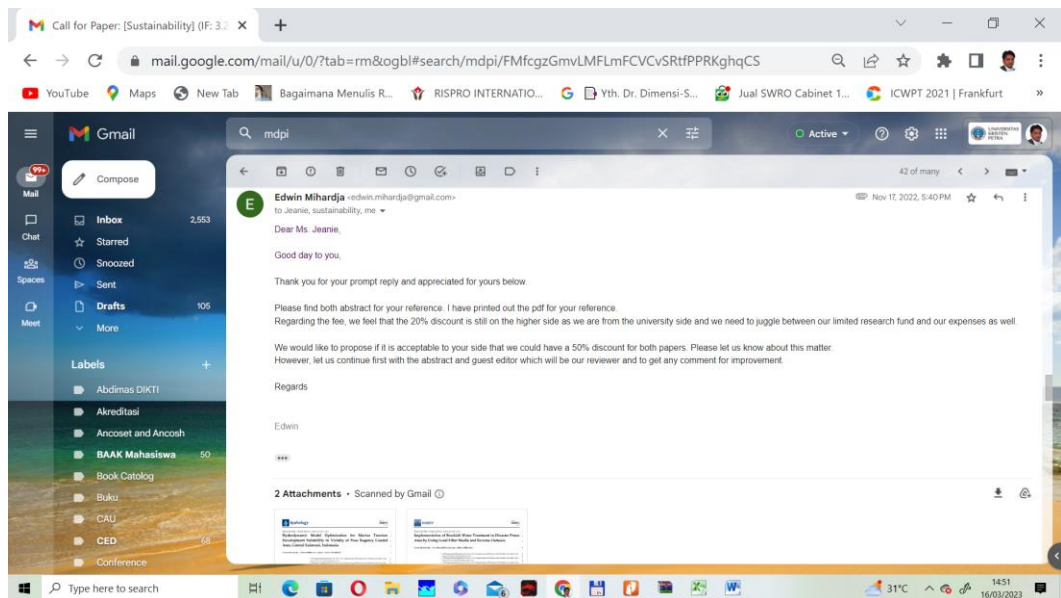
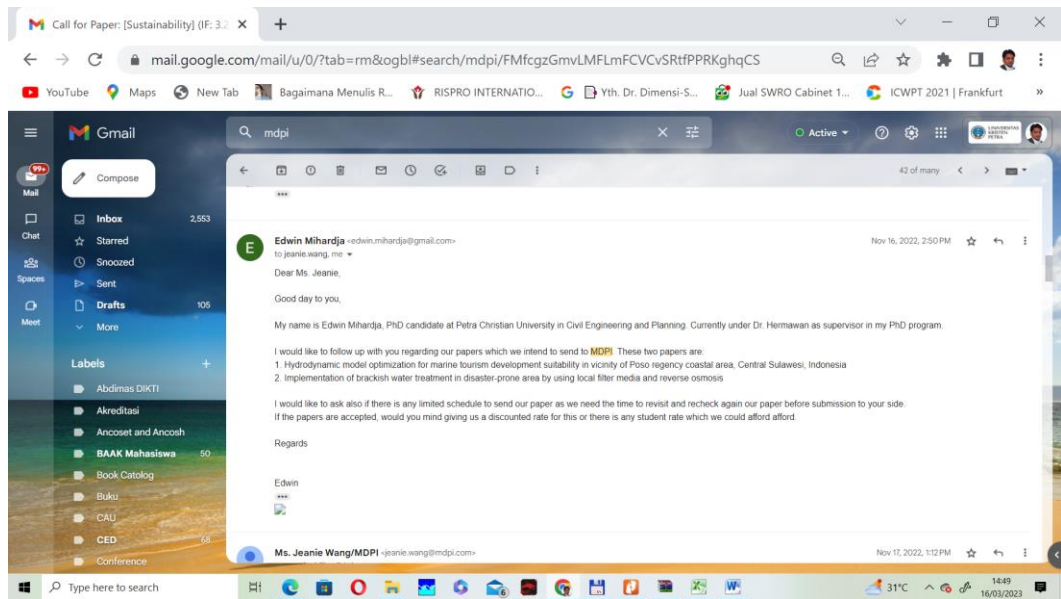
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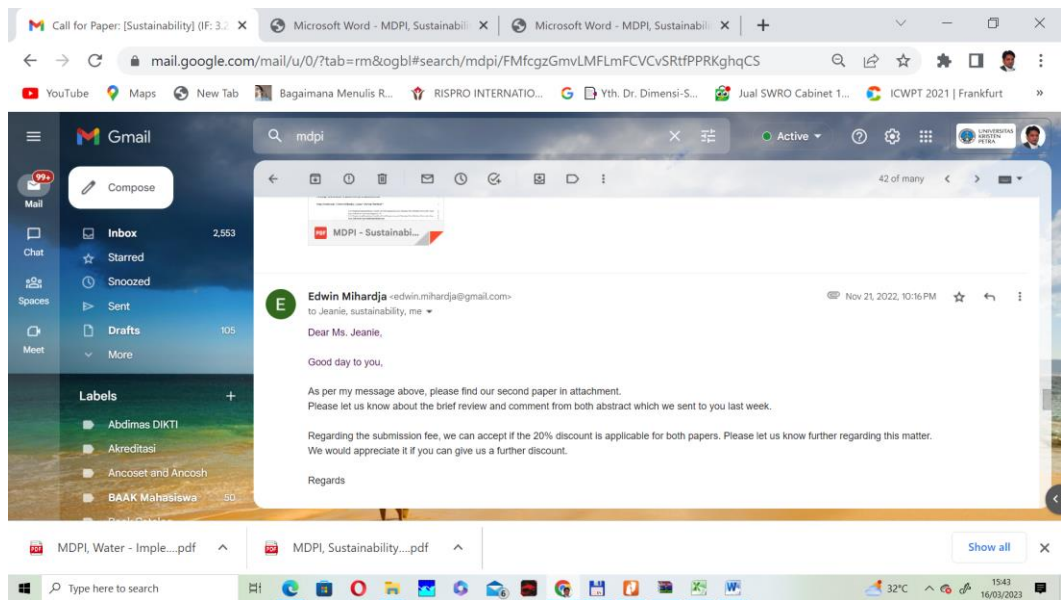
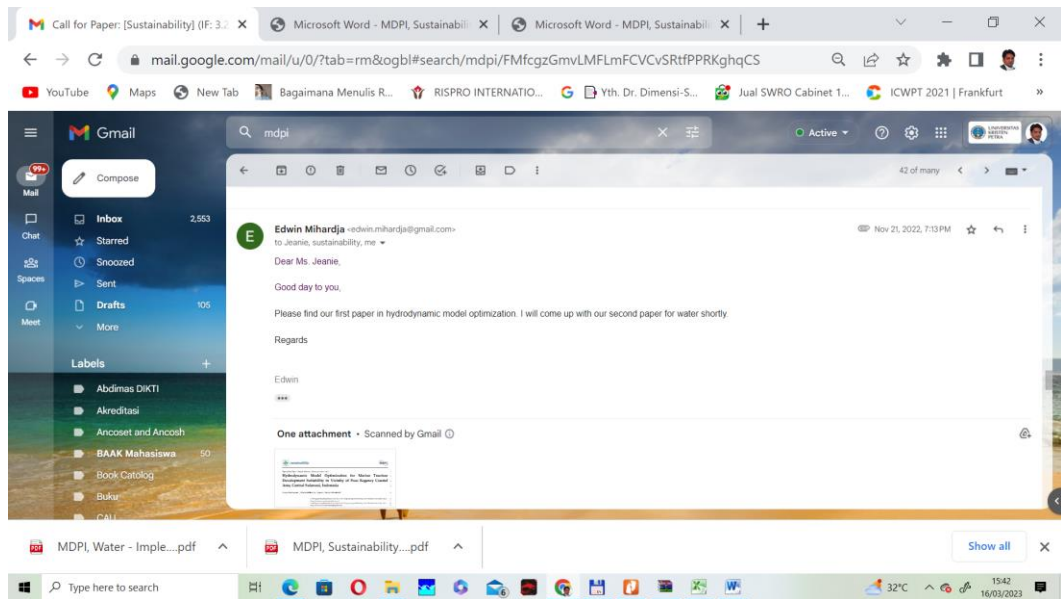
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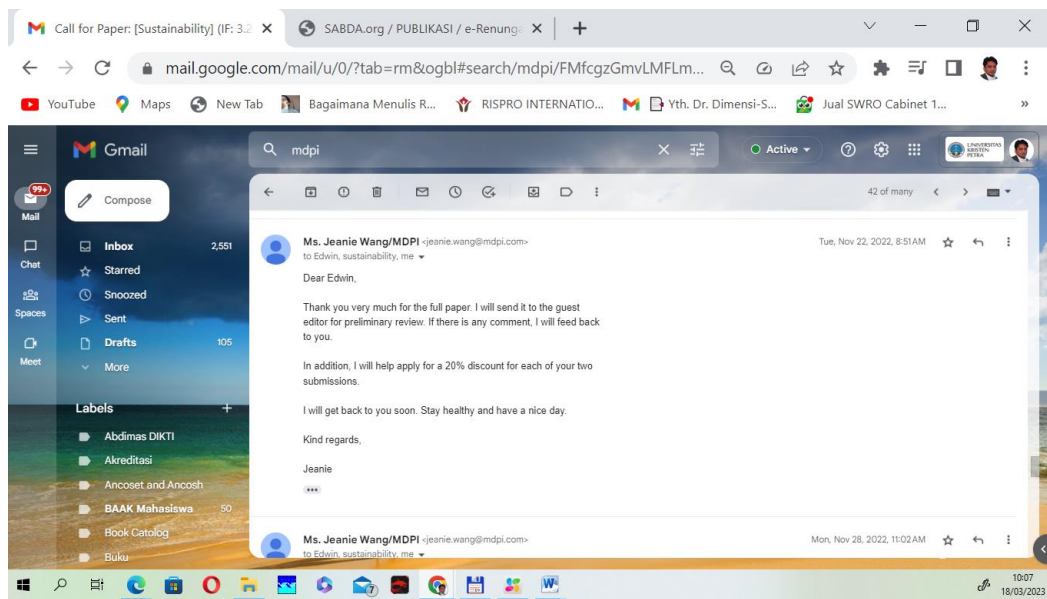
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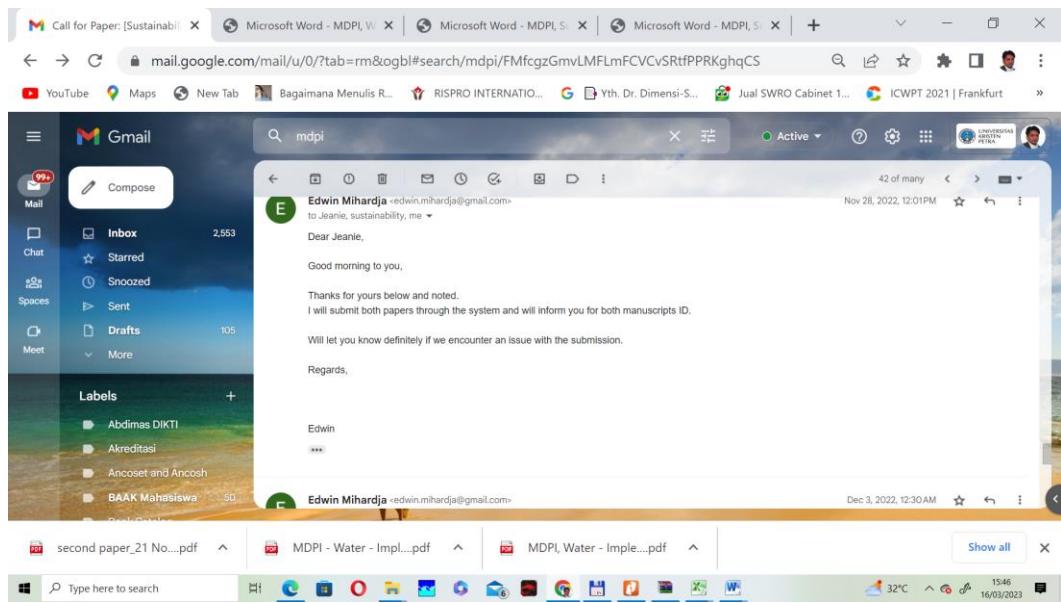
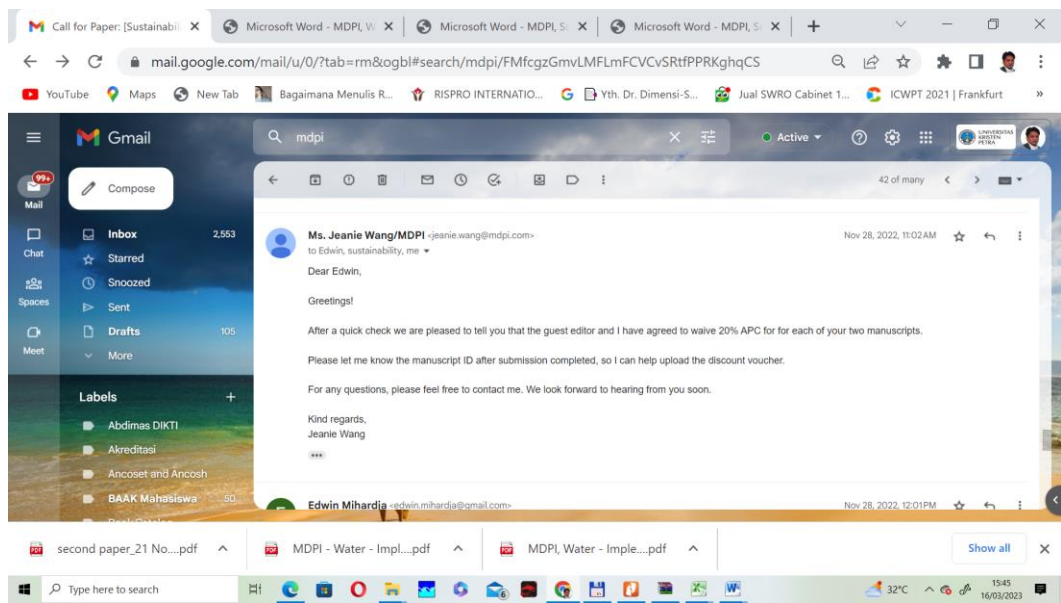


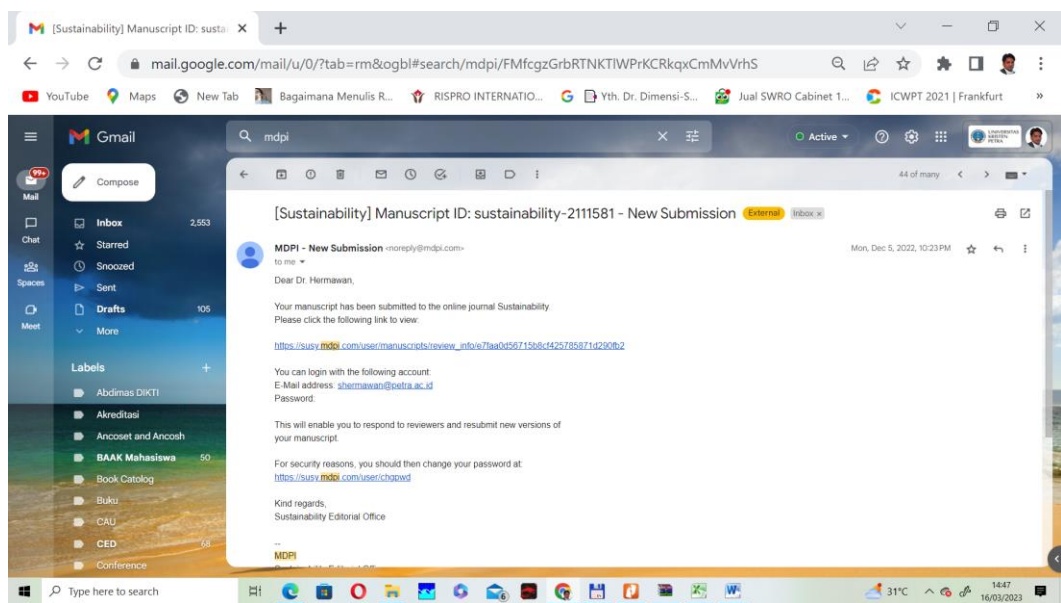
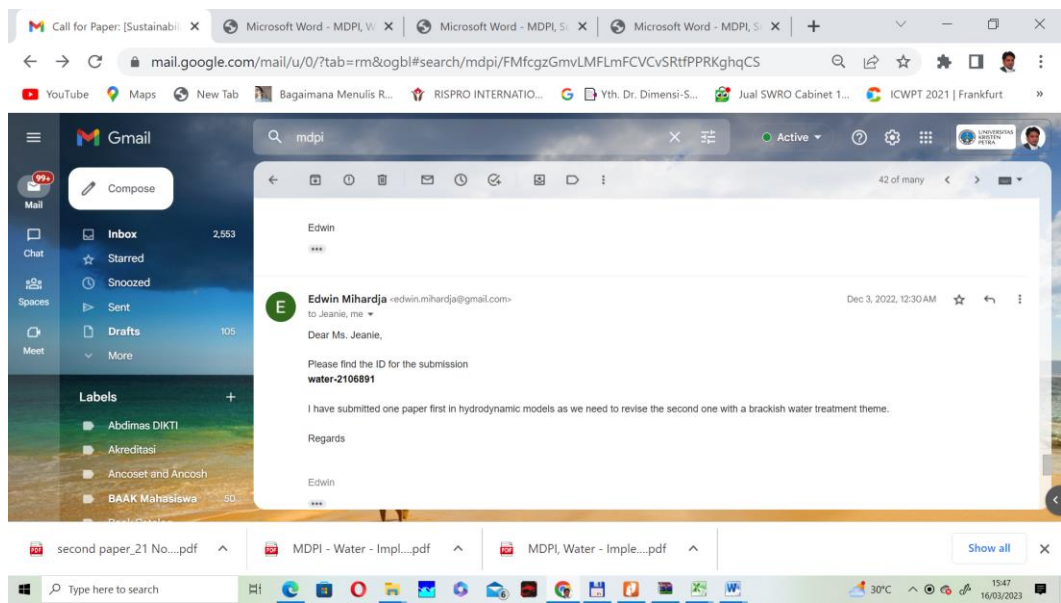


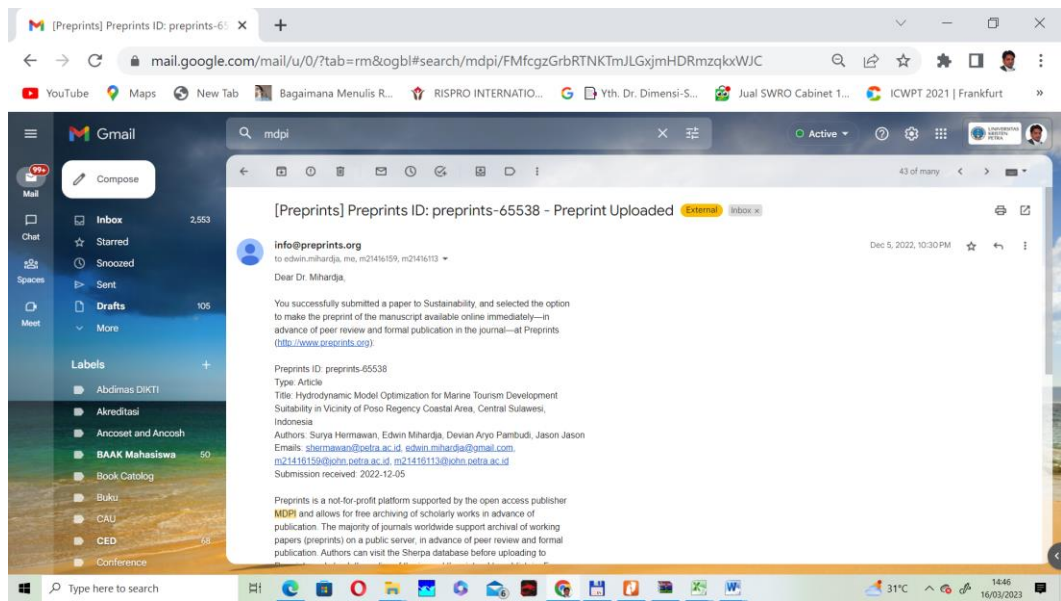
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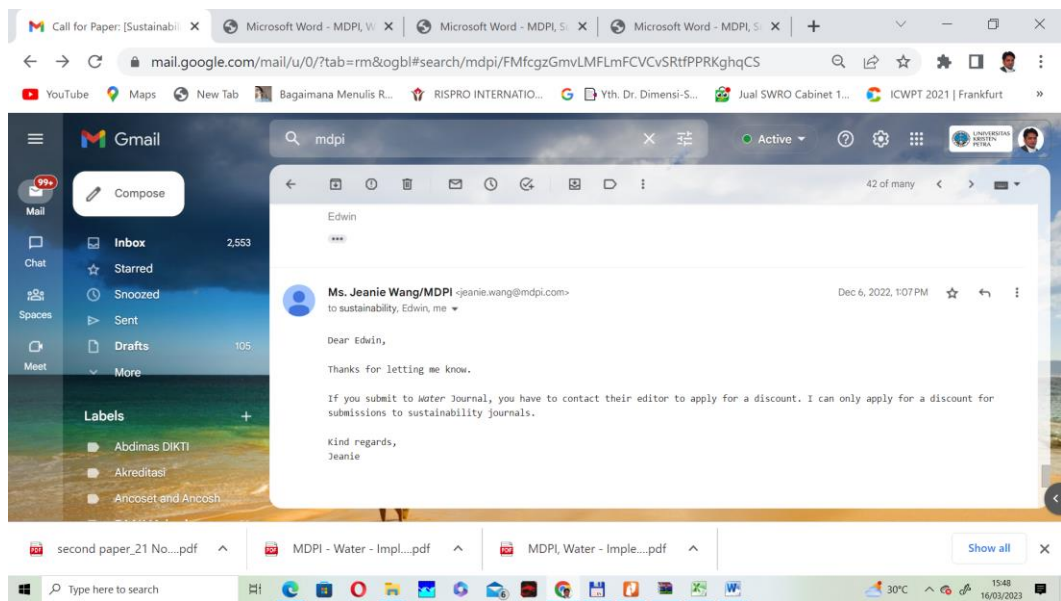


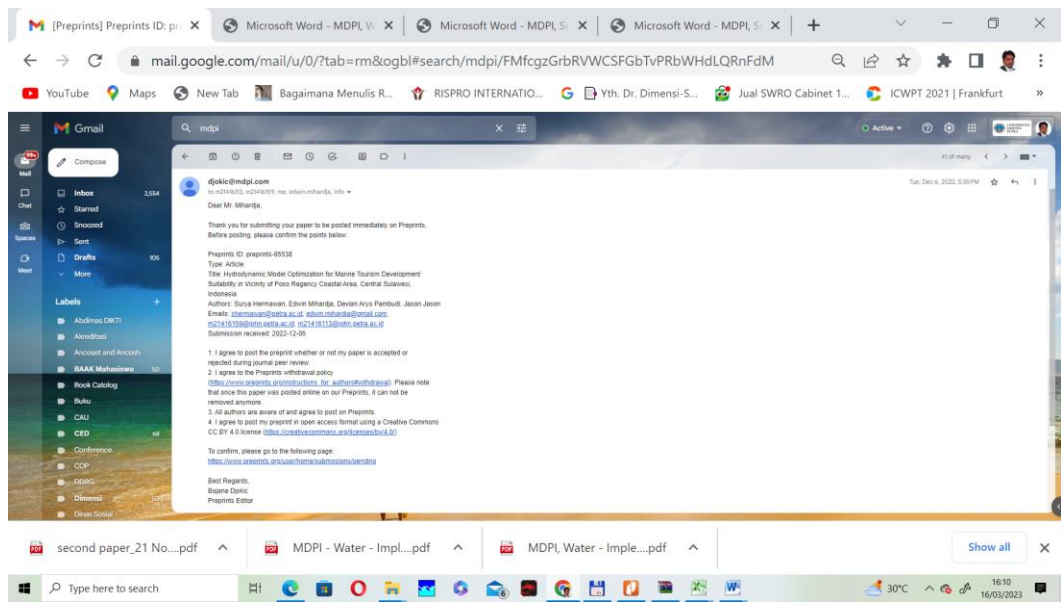
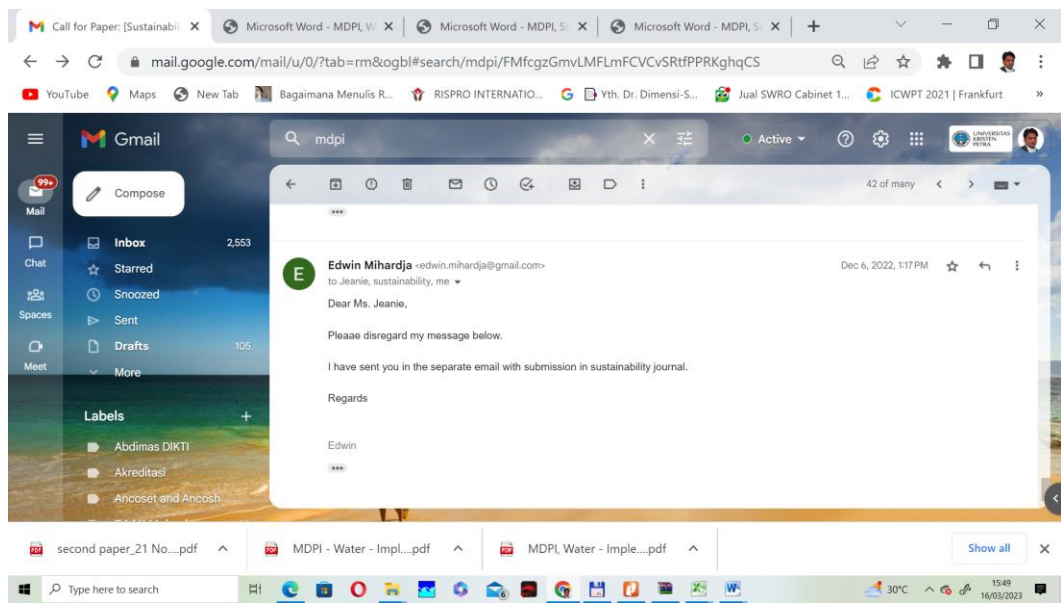


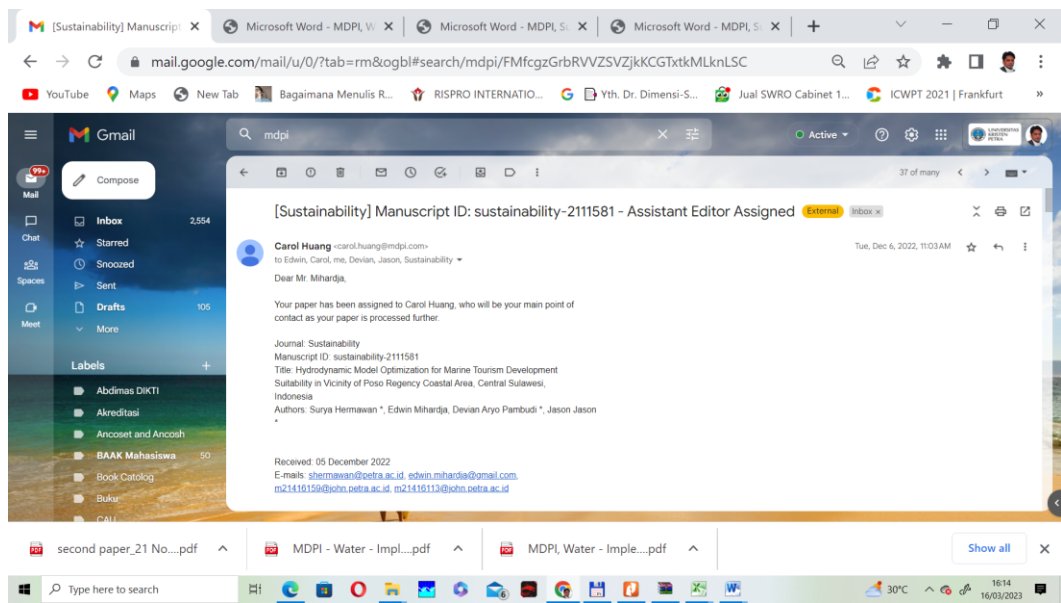


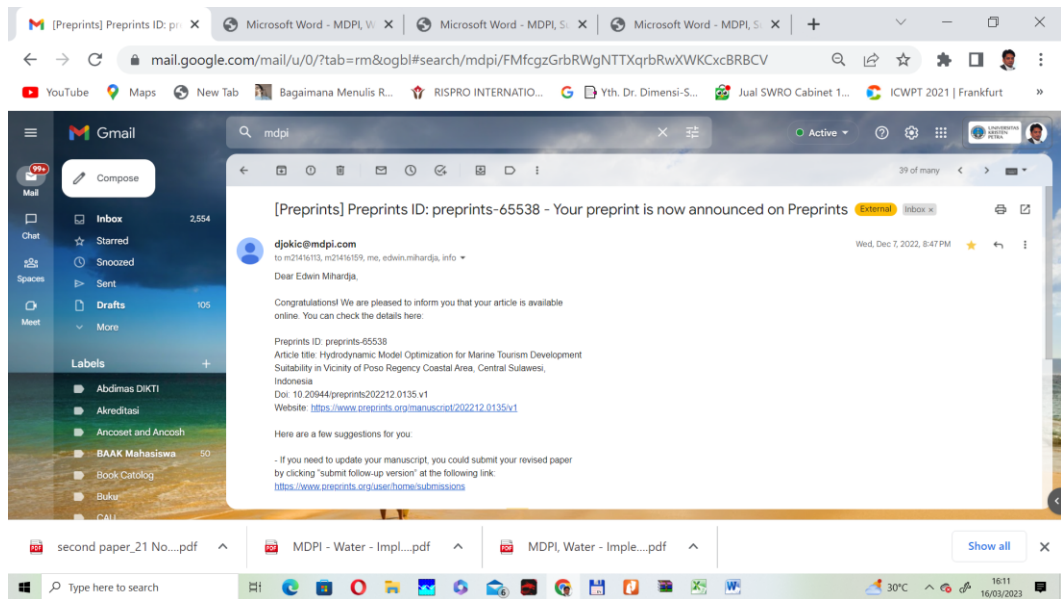
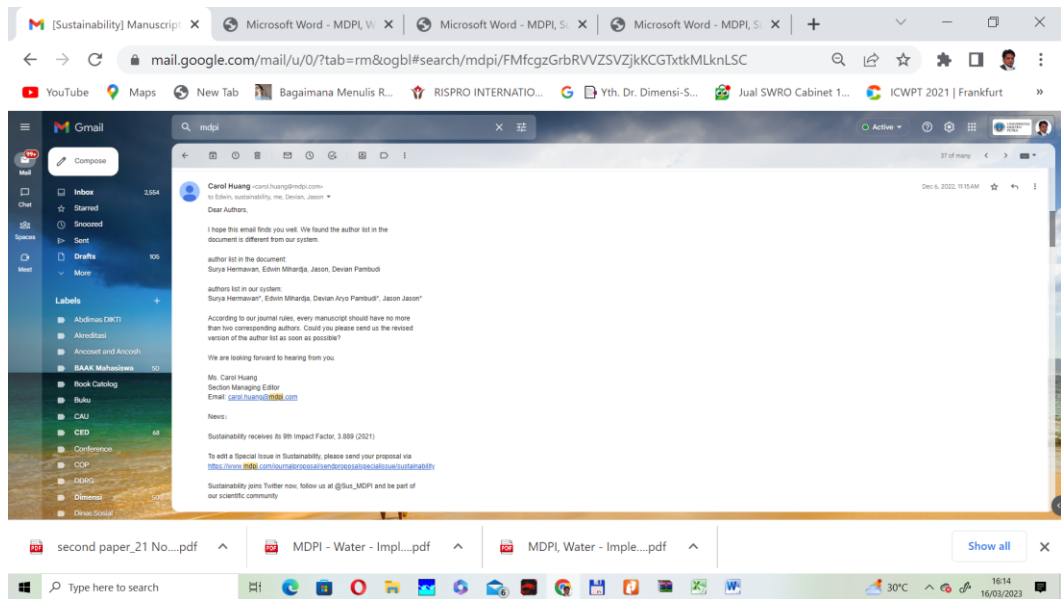


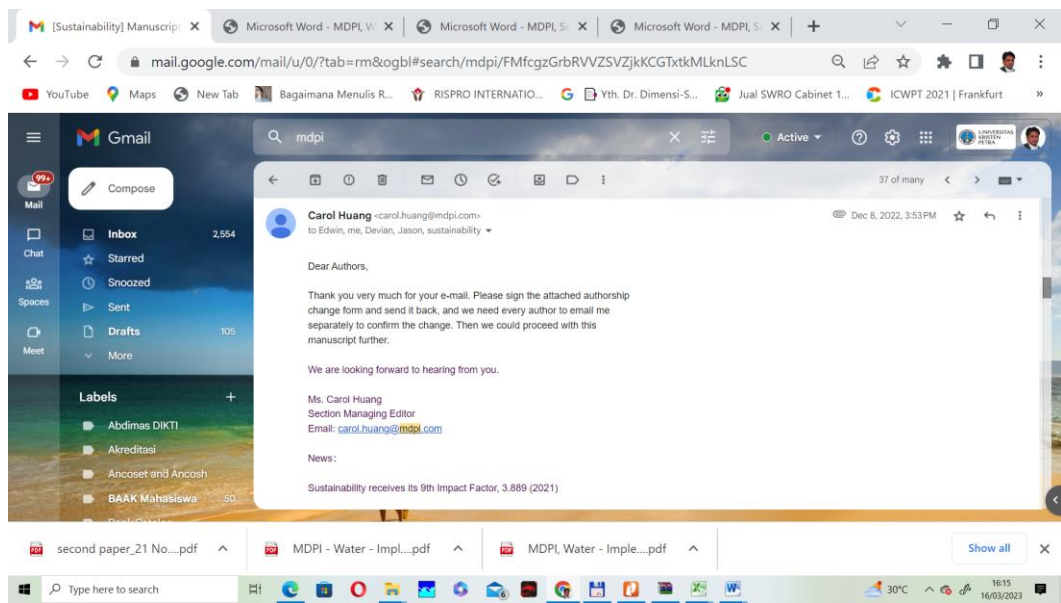
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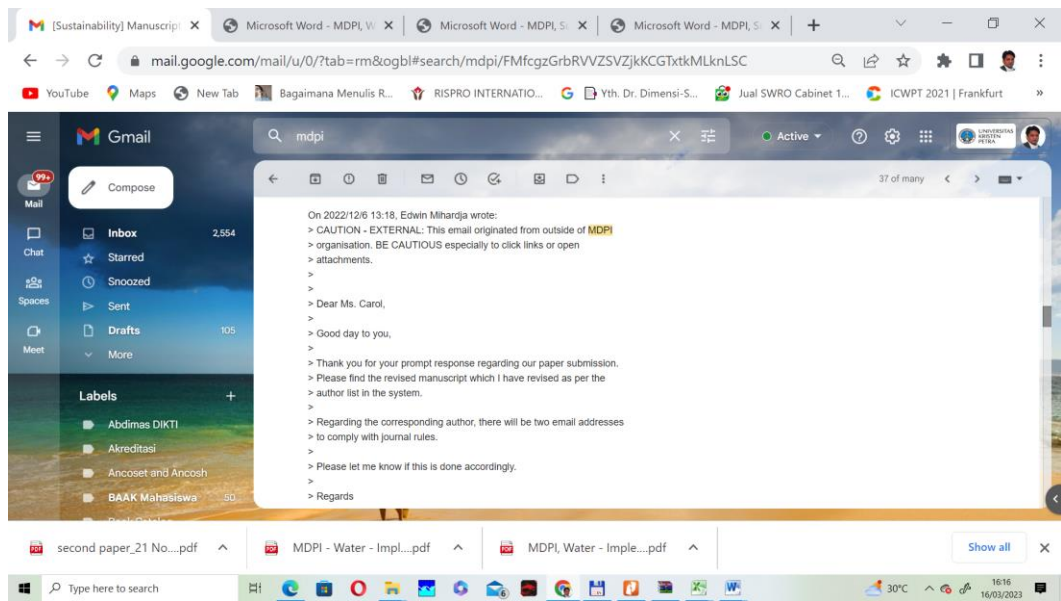




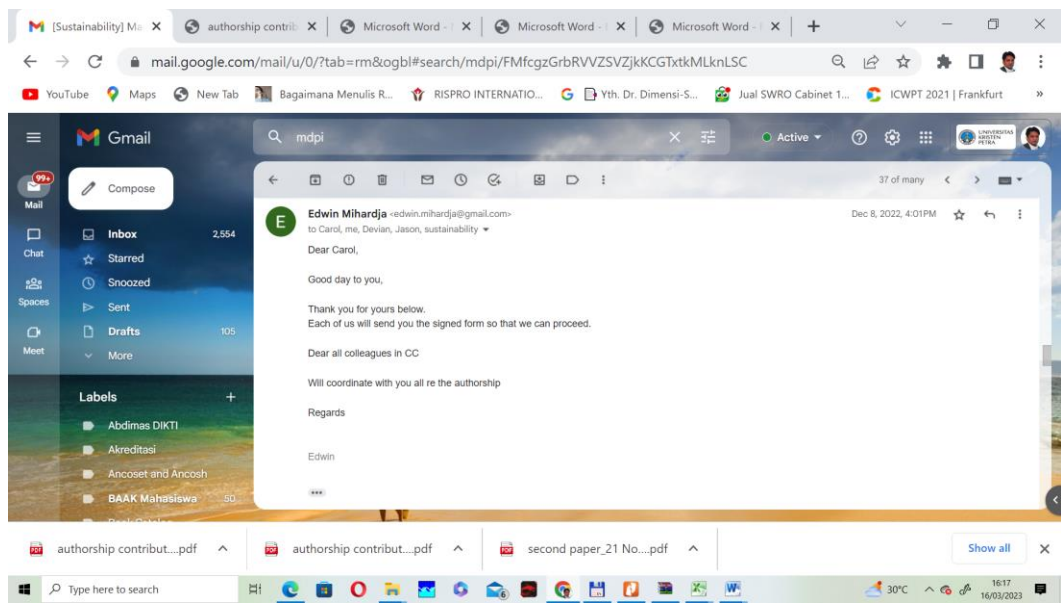


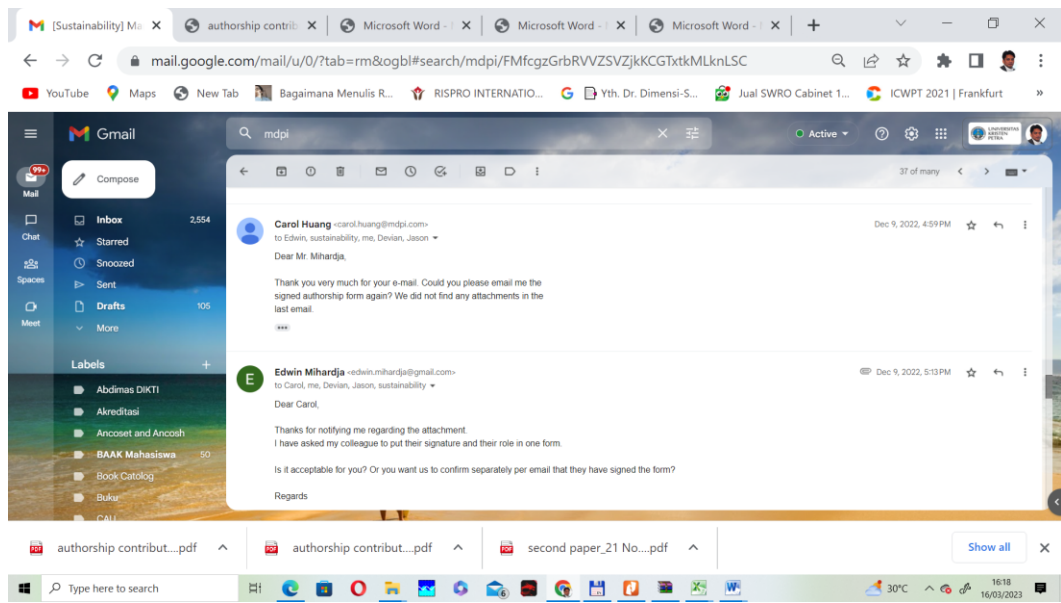
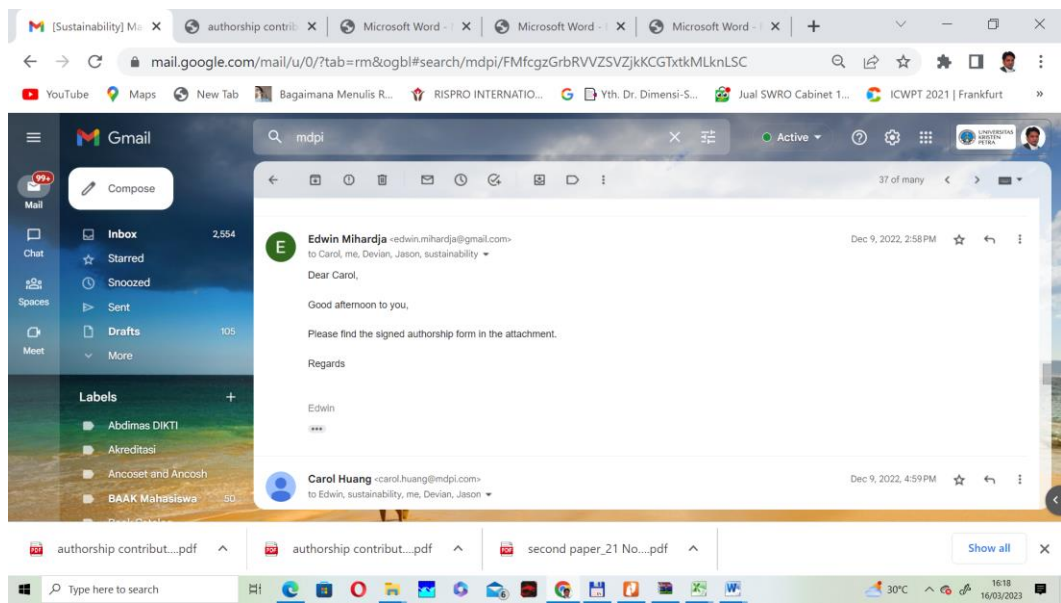




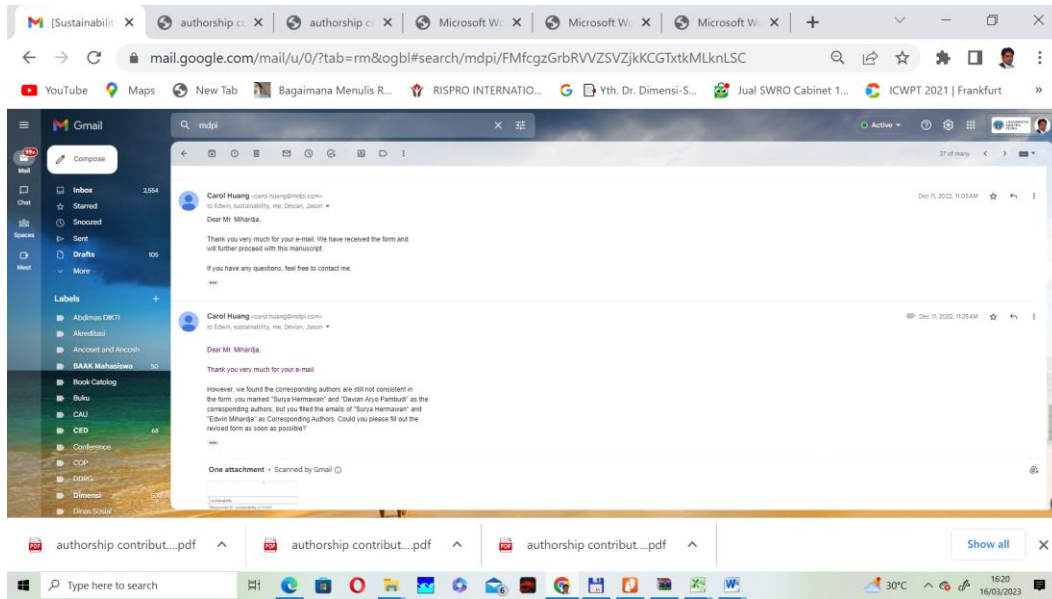


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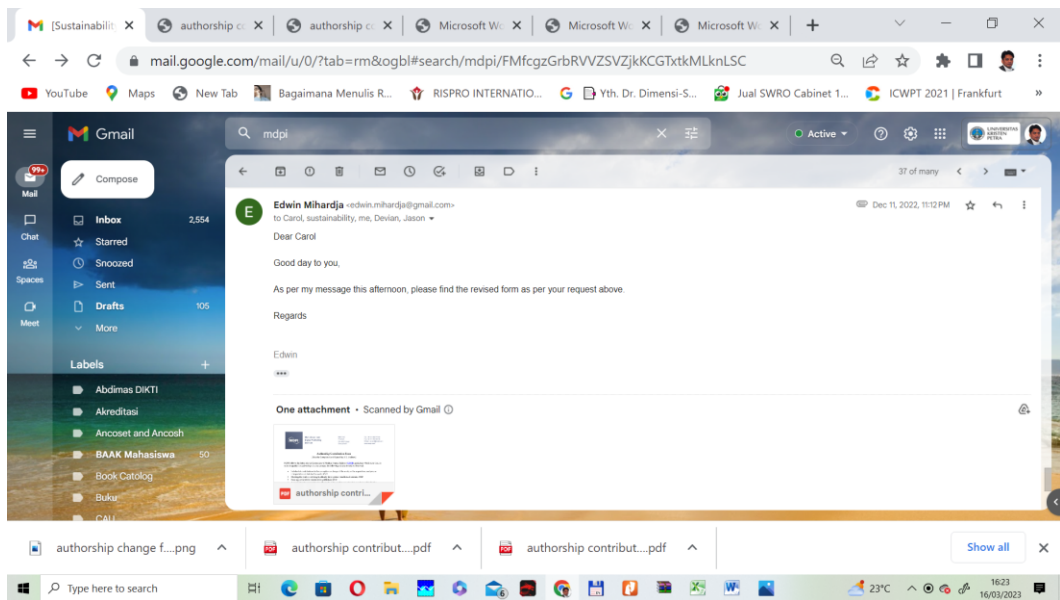
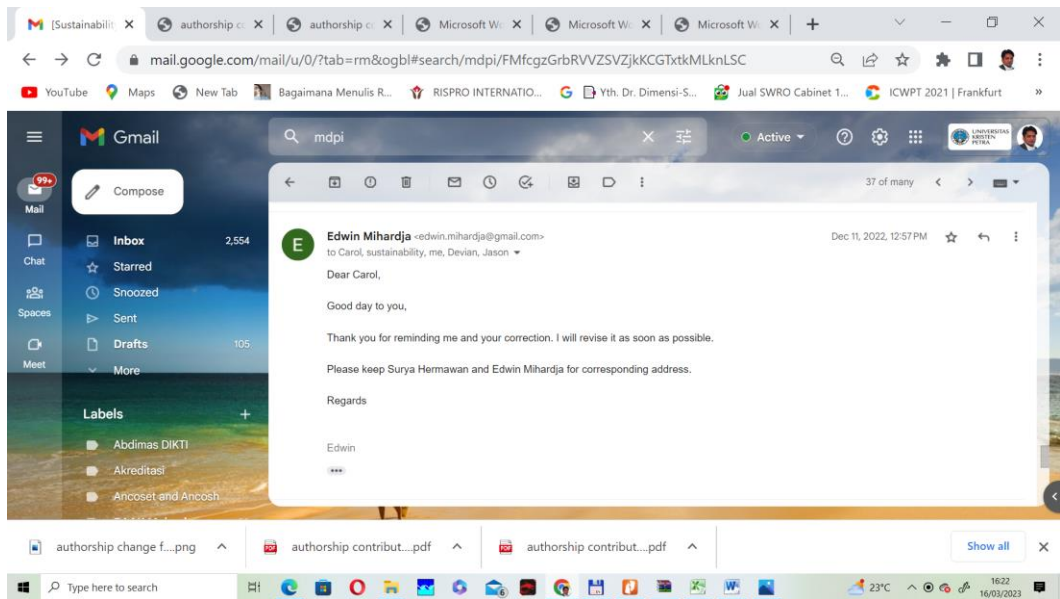




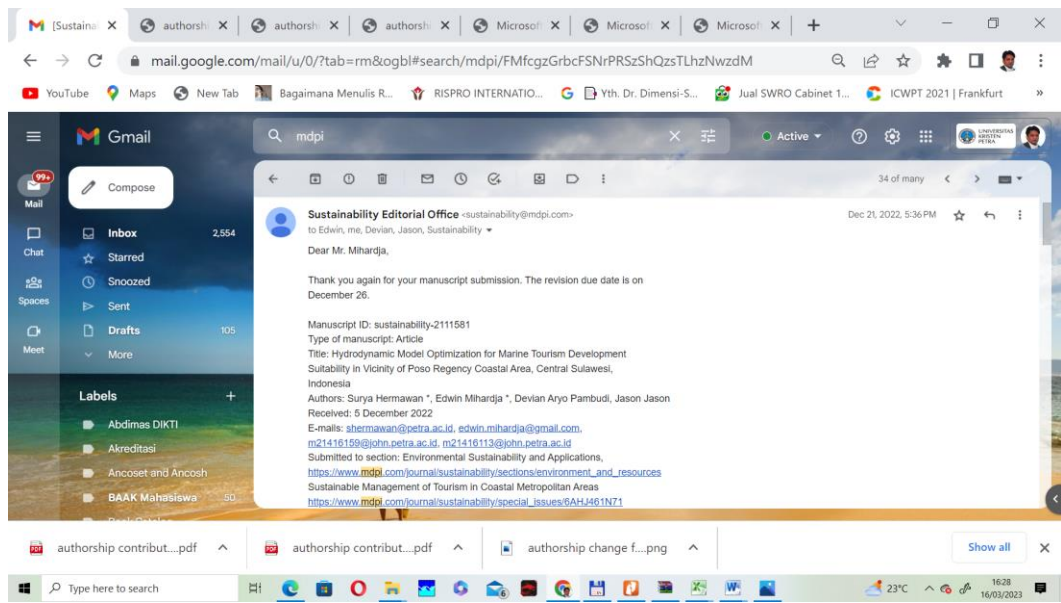
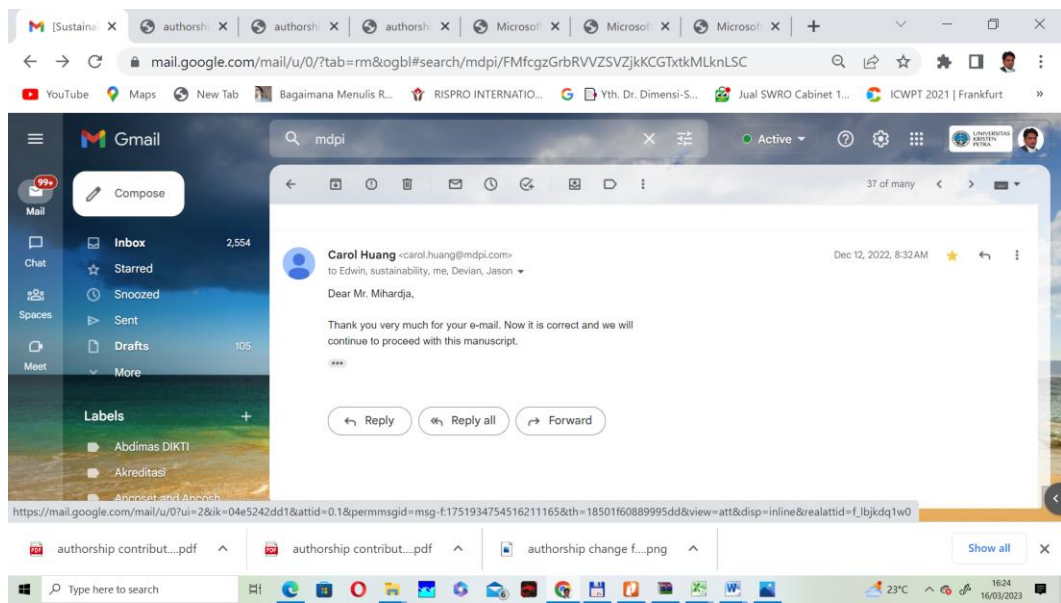
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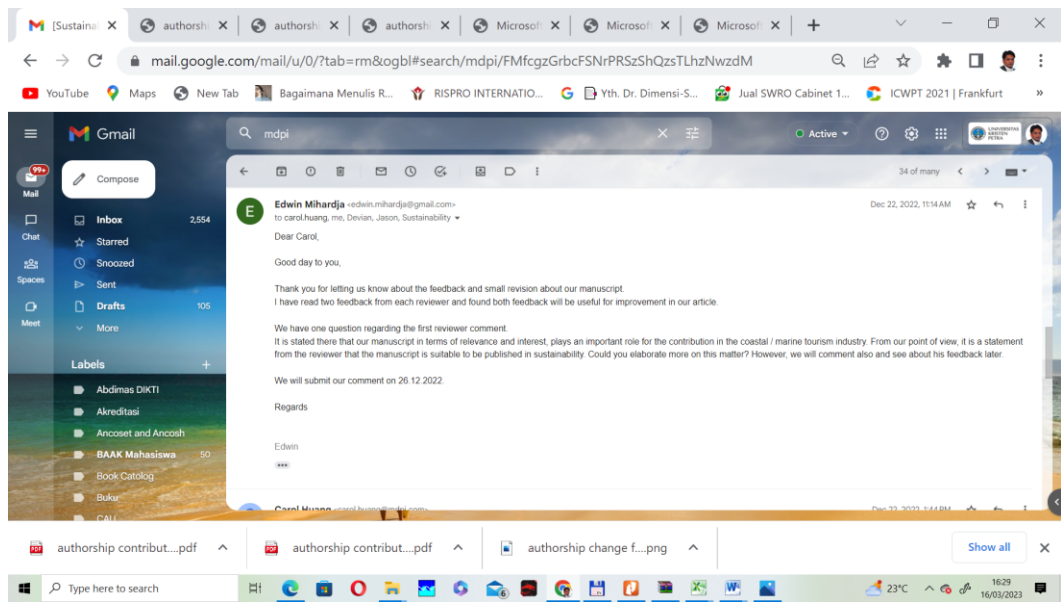
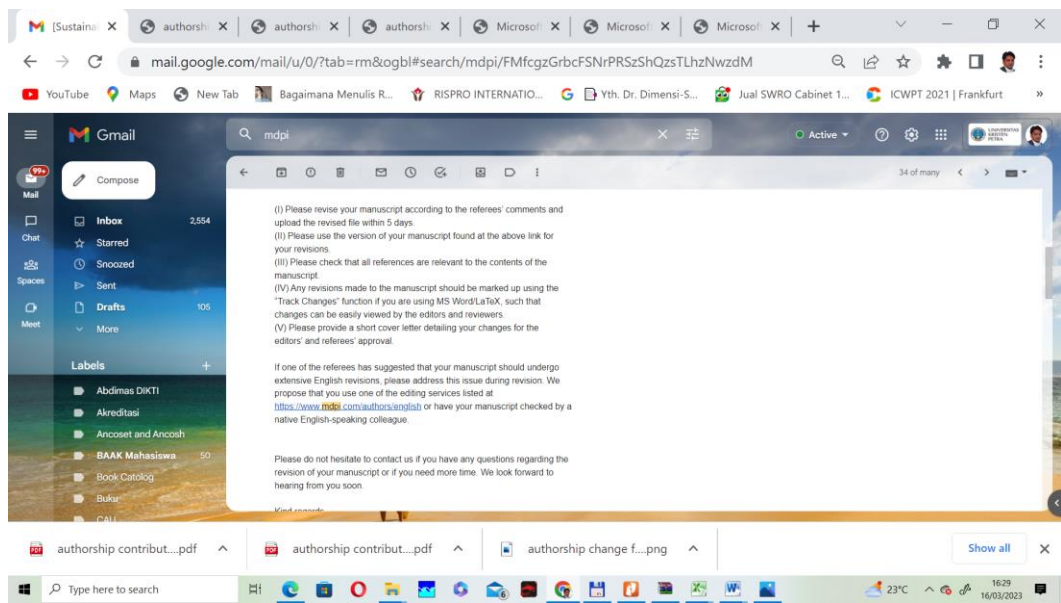


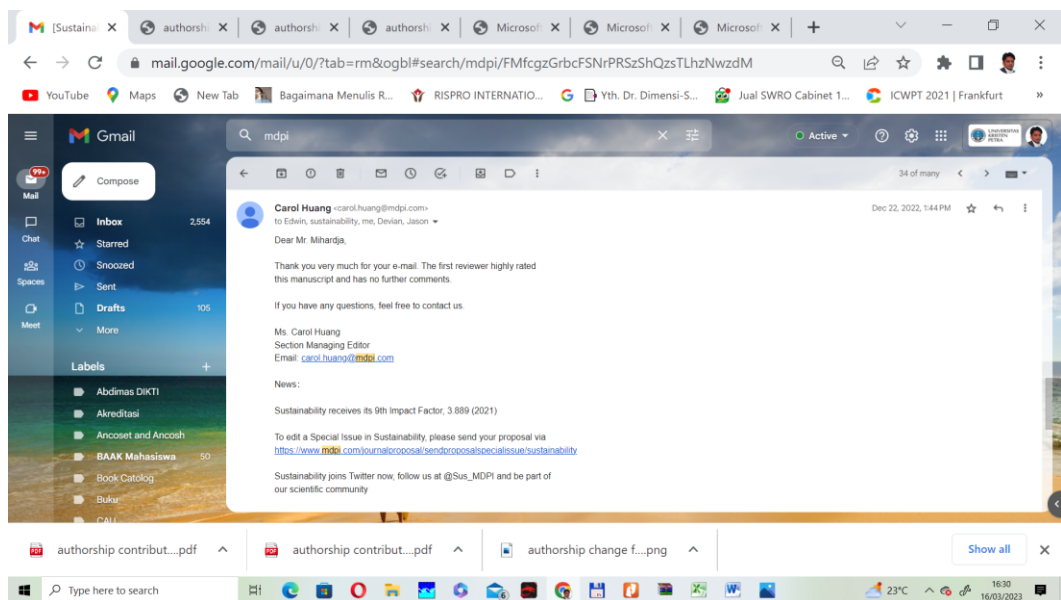
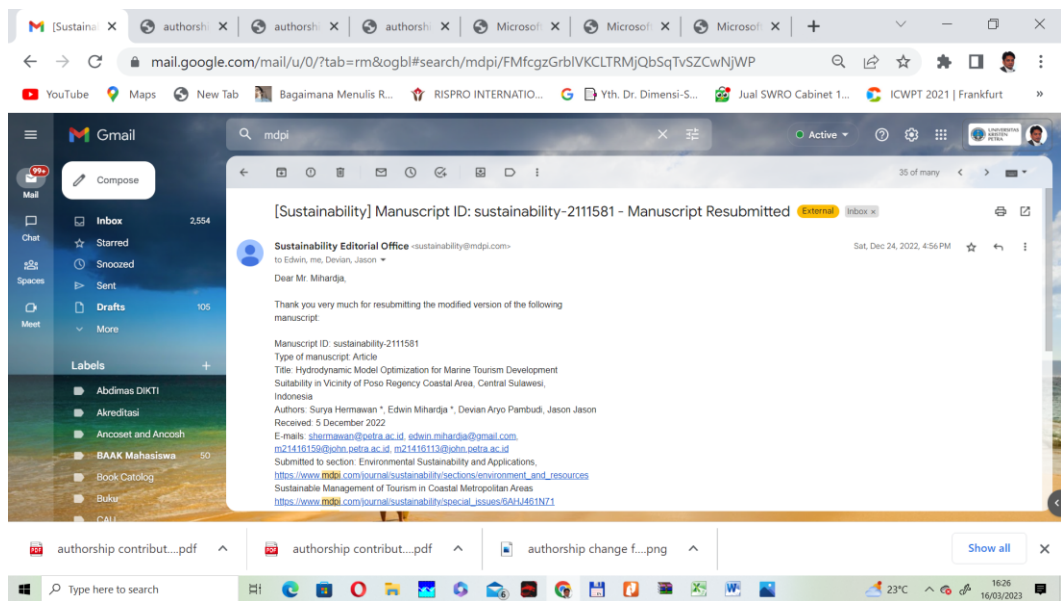
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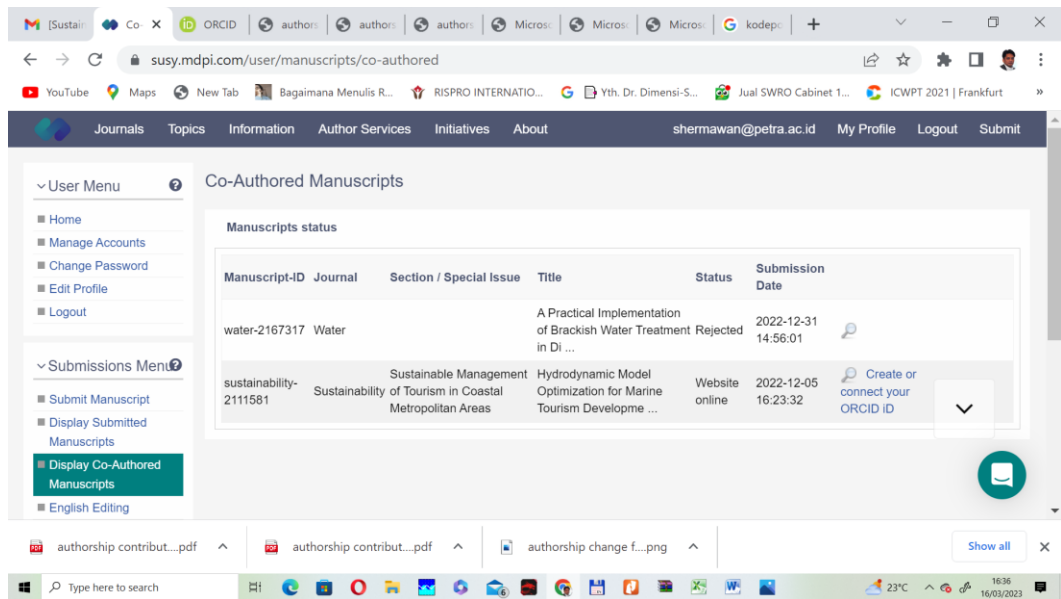
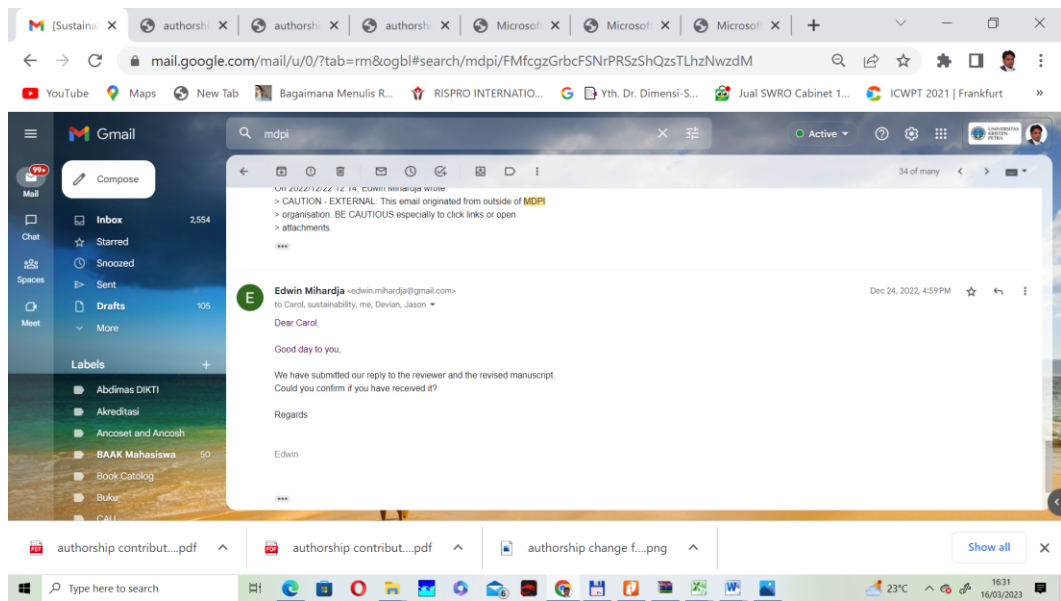


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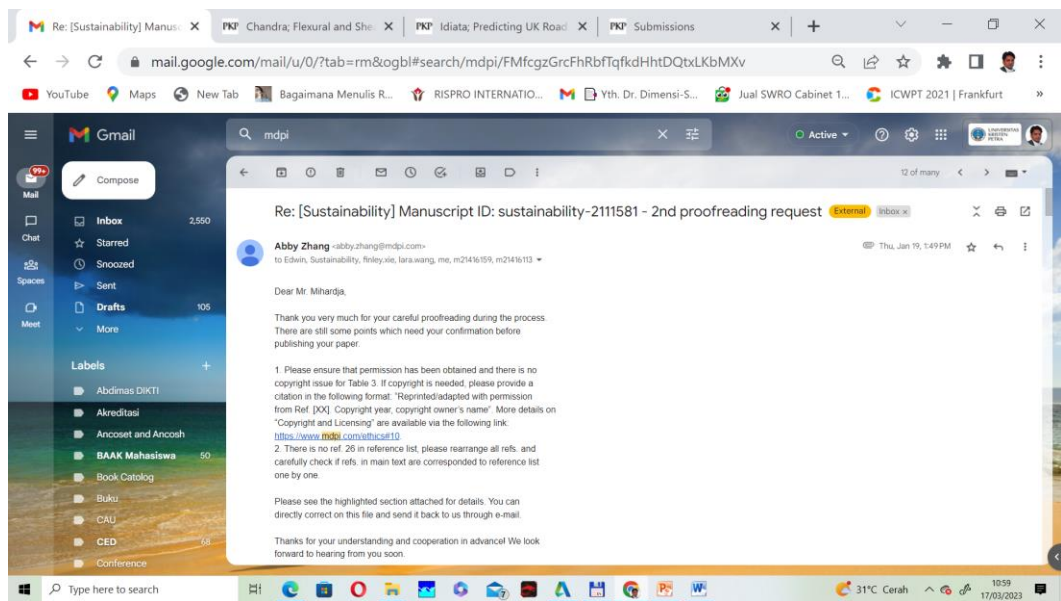
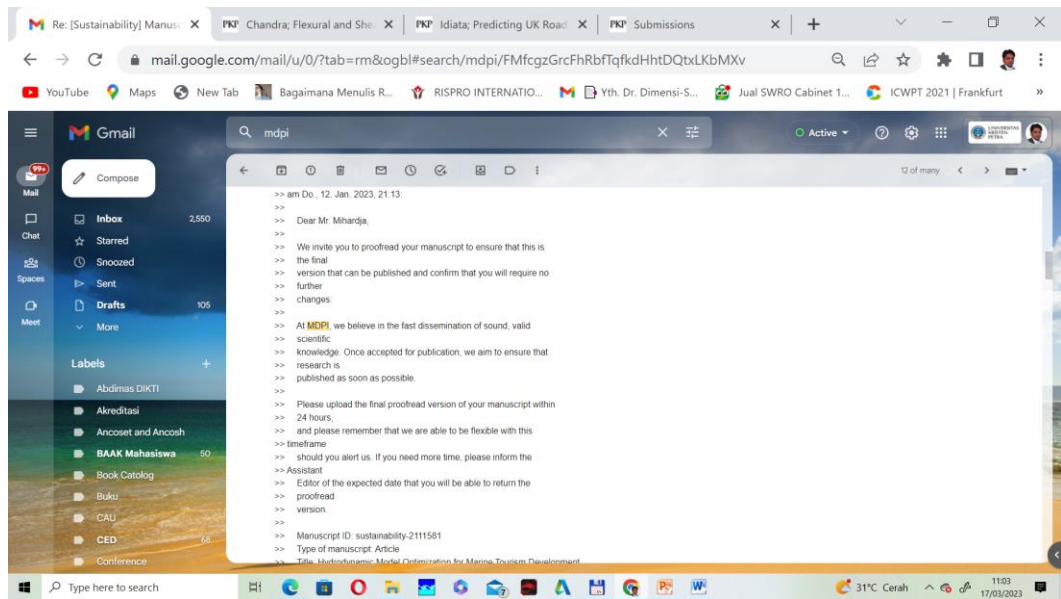


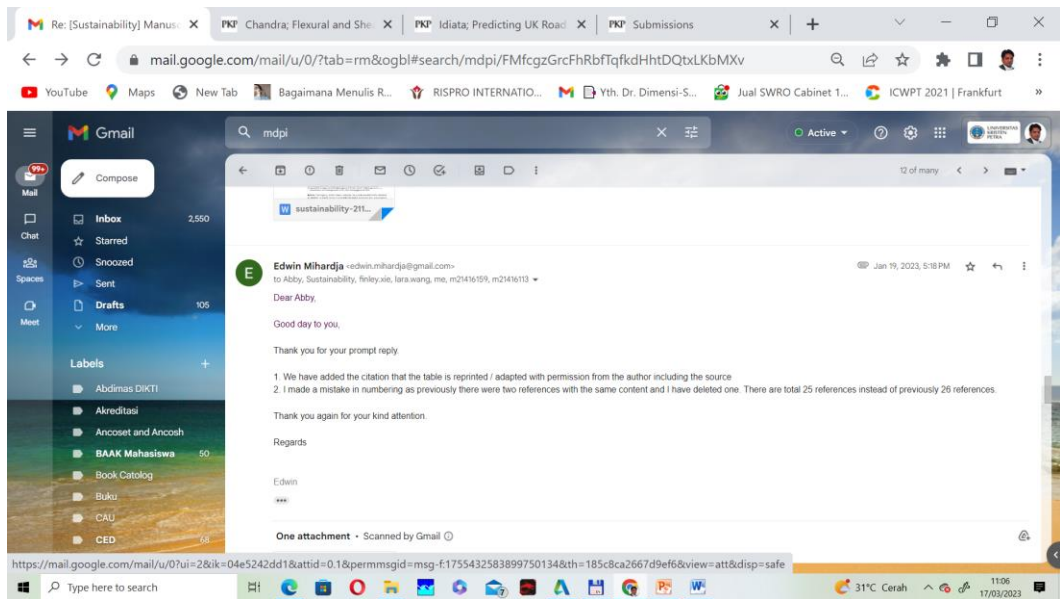
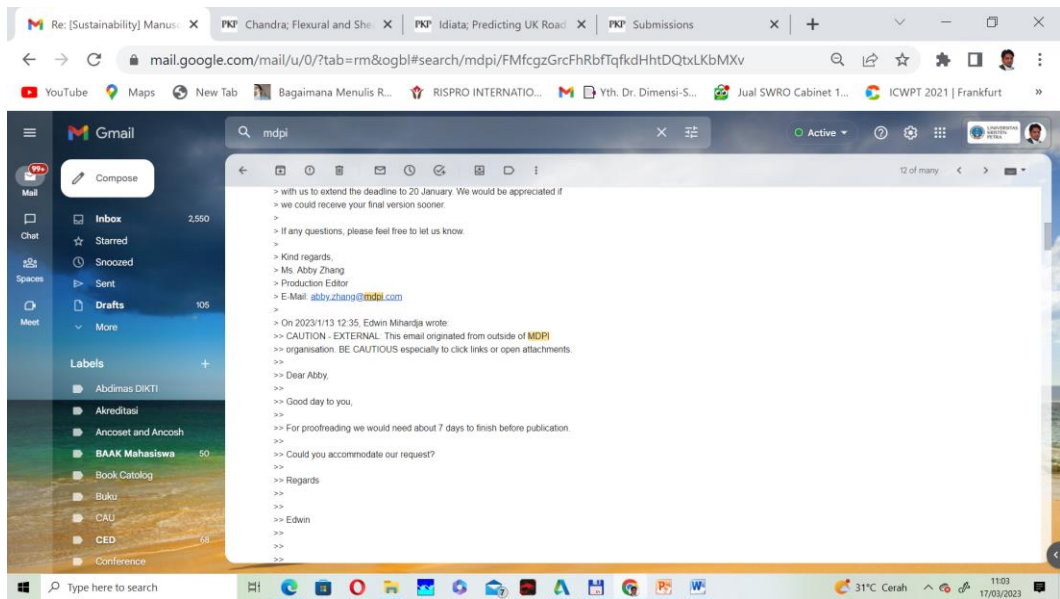


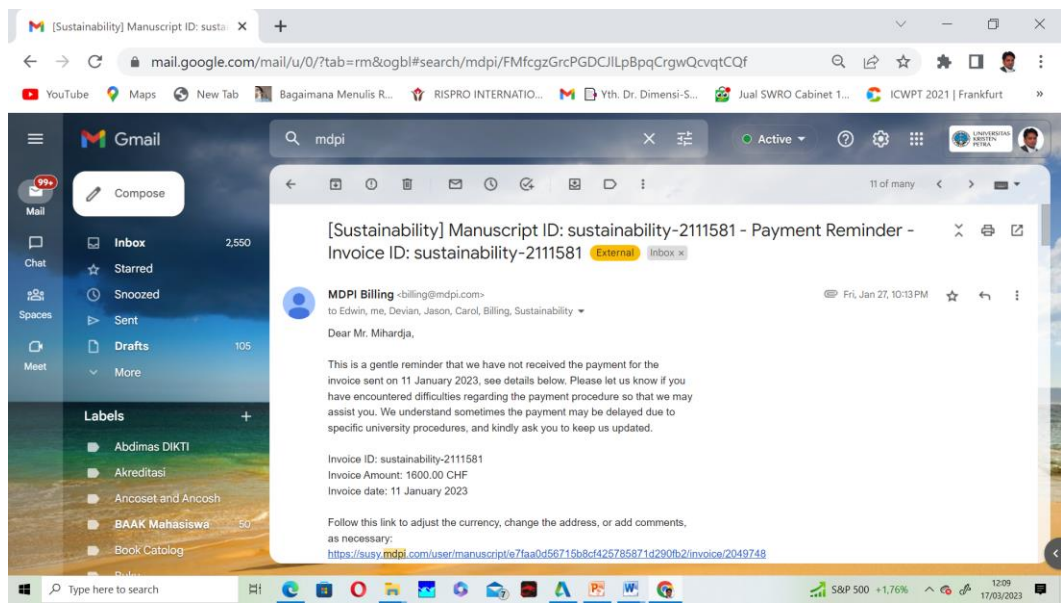


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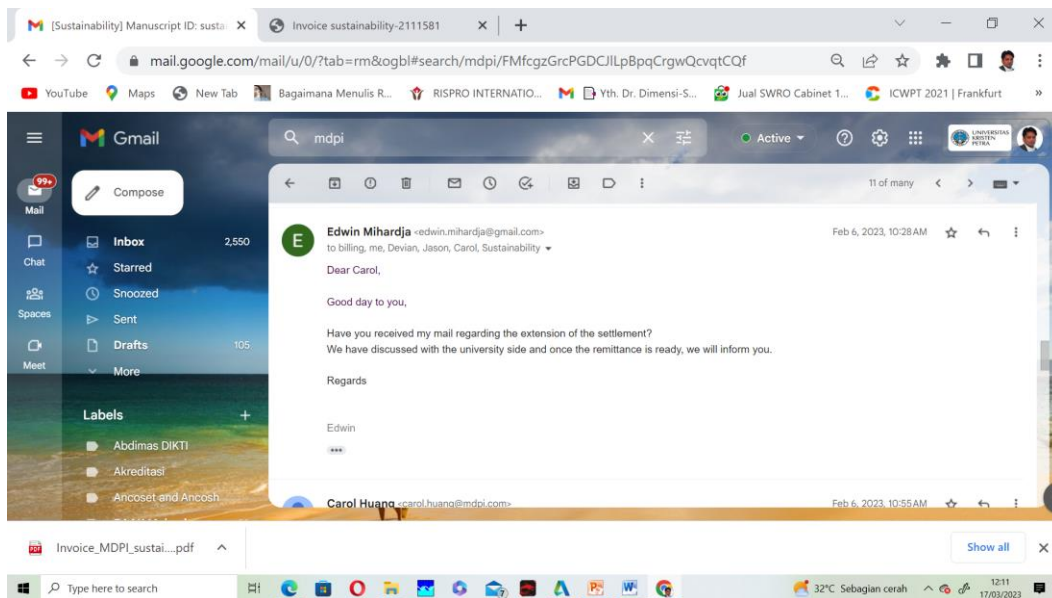
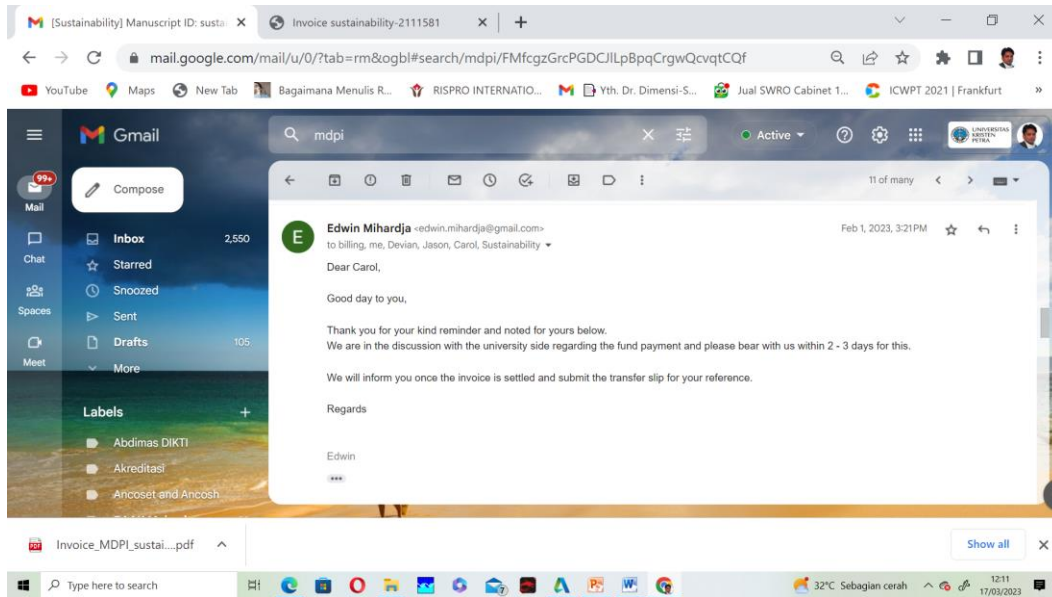
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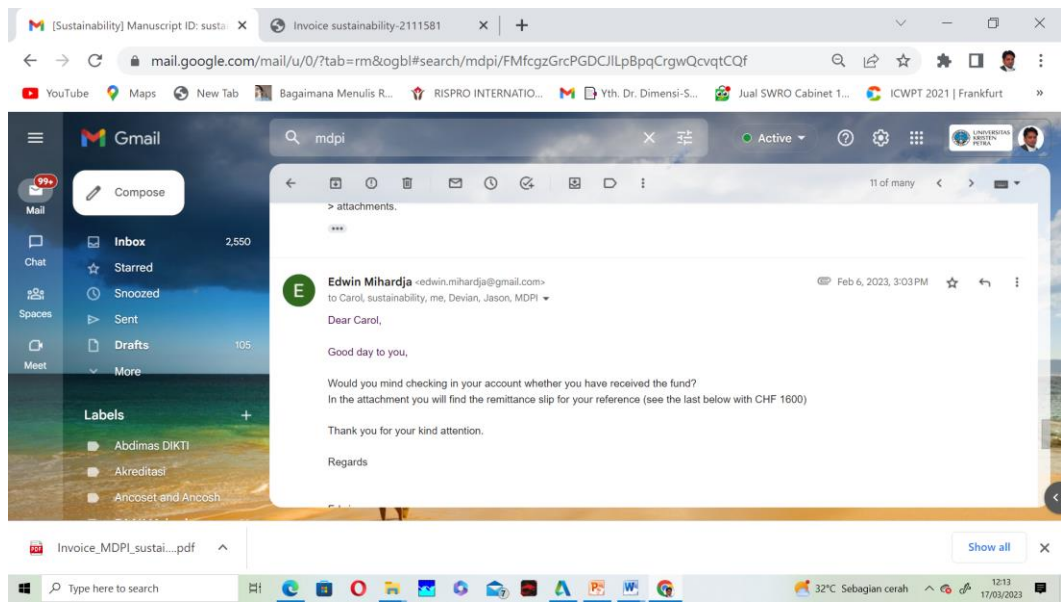
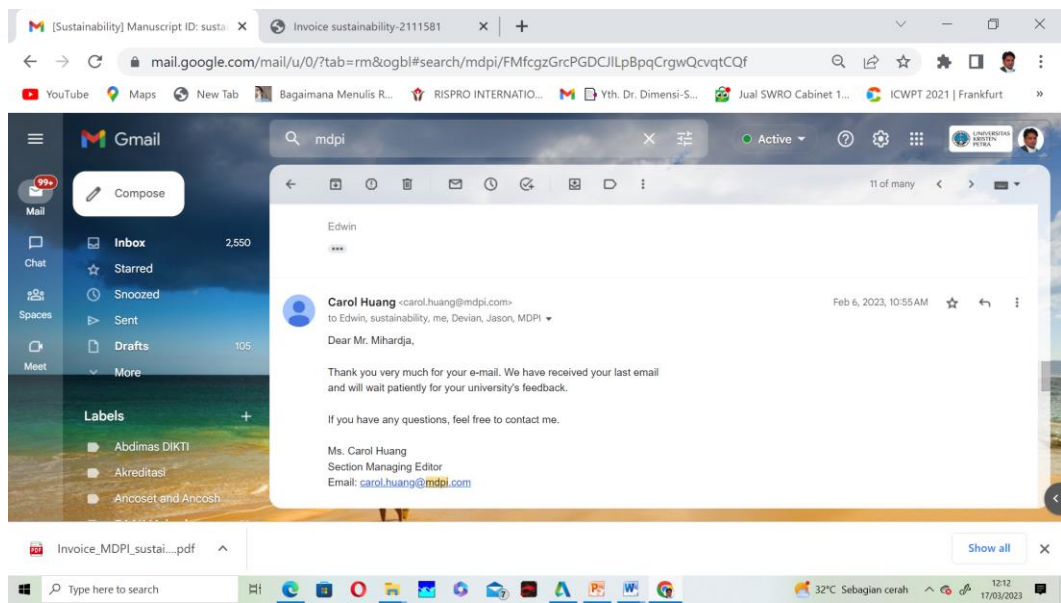




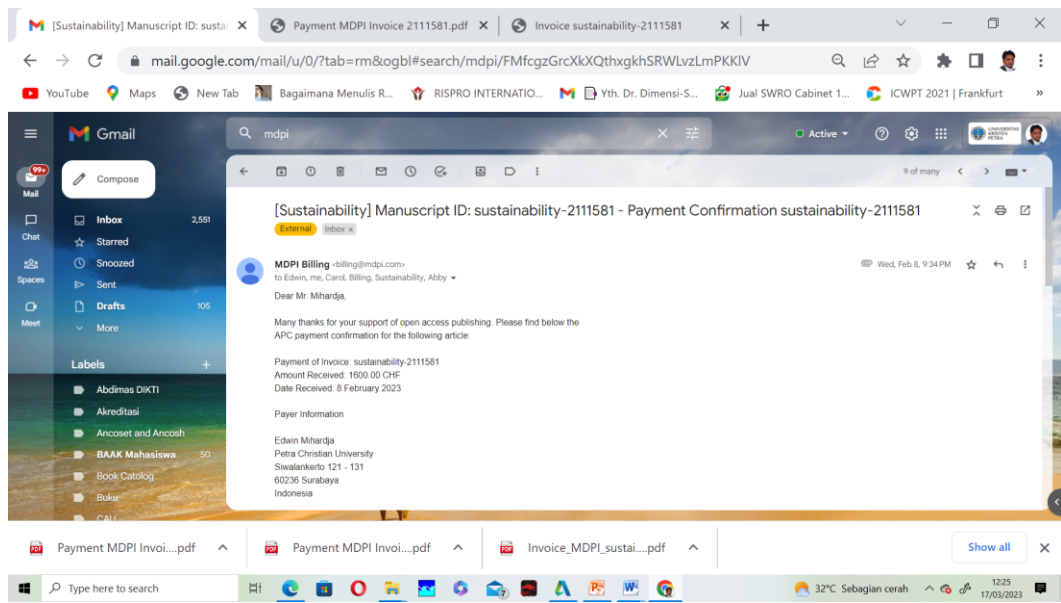
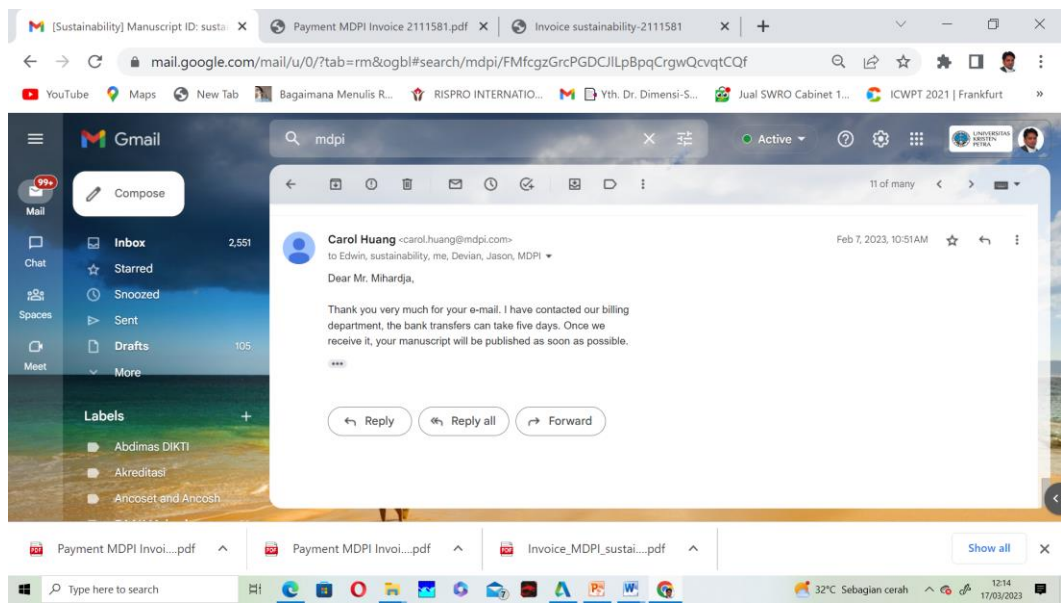


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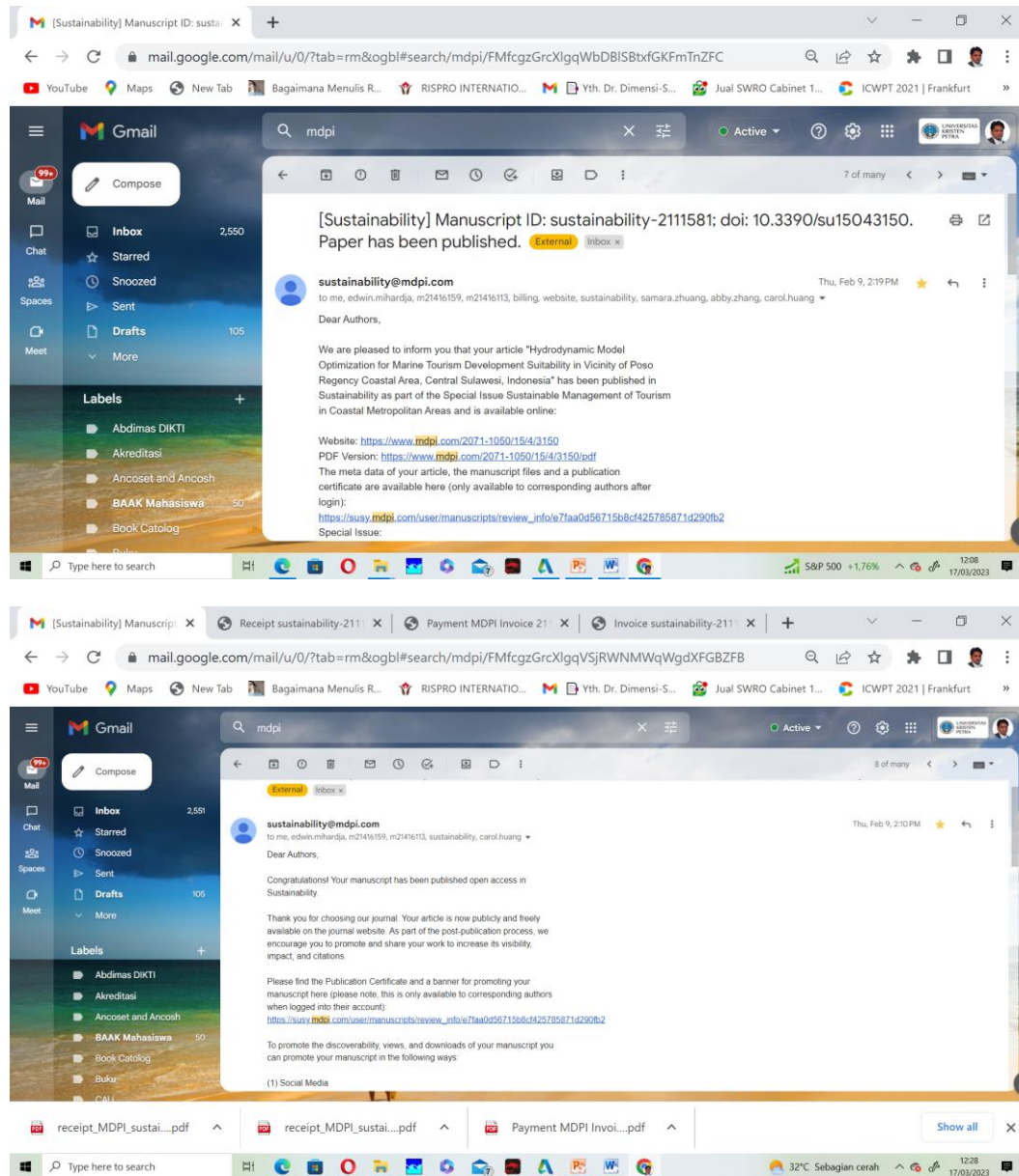


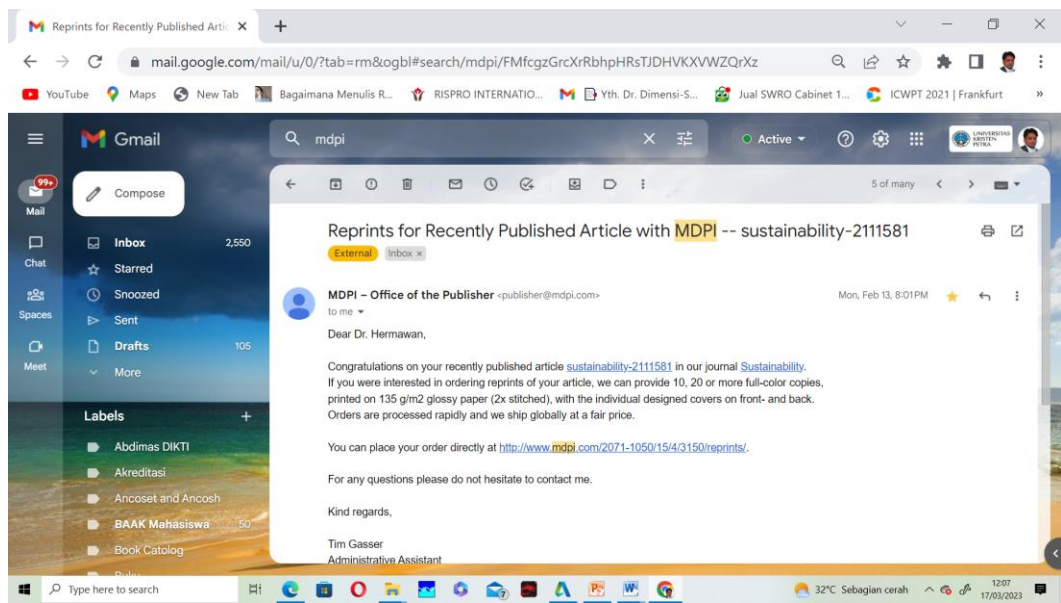


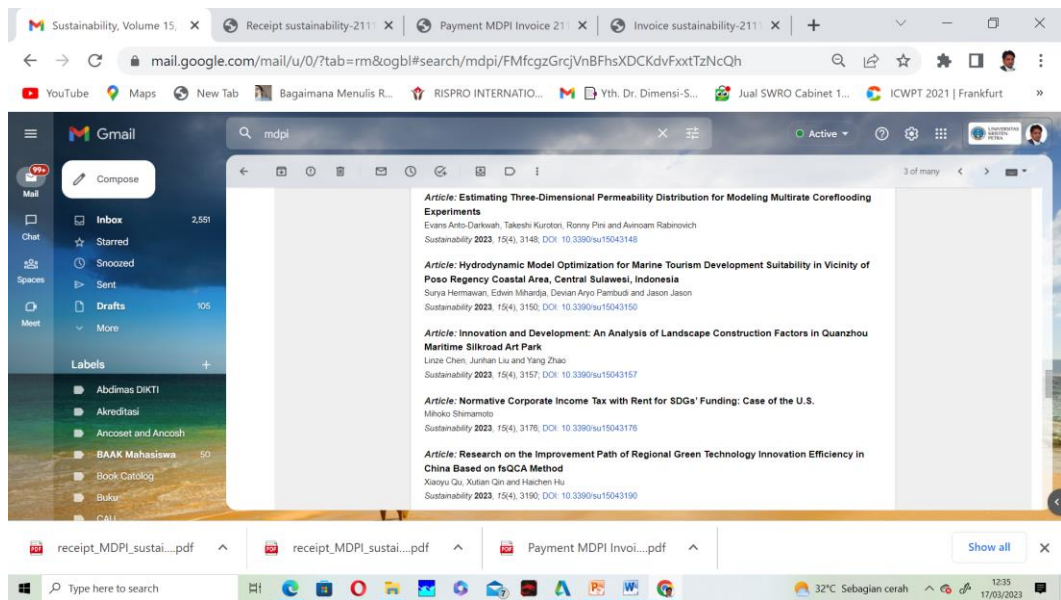
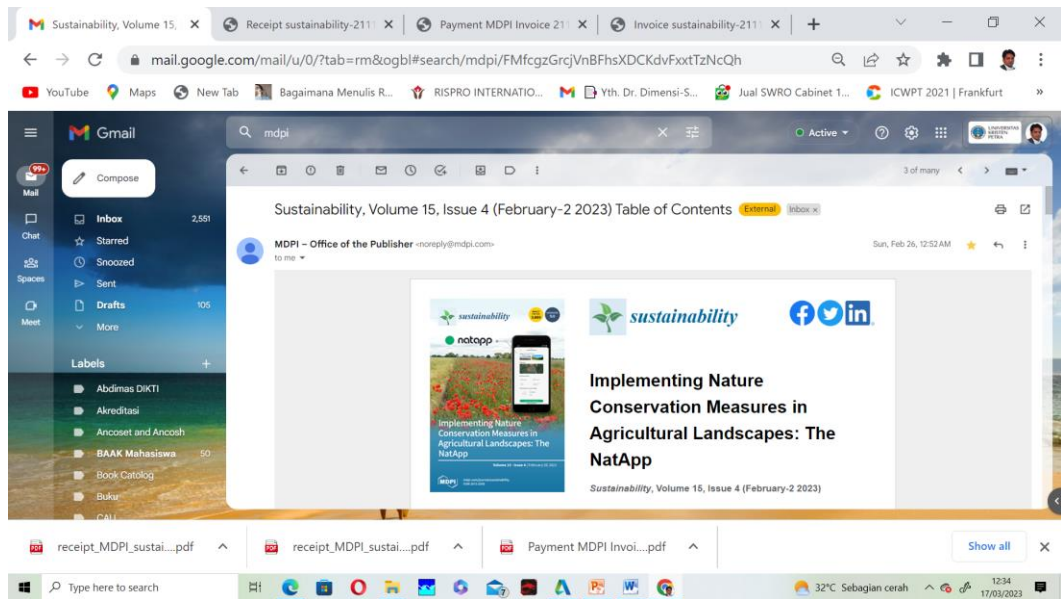
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Hydrodynamic Model Optimization for Marine Tourism Development Suitability in Vicinity of Poso Regency Coastal Area, Central Sulawesi, Indonesia

Surya Hermawan *, Edwin Mihardja *, Devian Aryo Pambudi and Jason Jason

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Abstract: Poso regency, Central Sulawesi, Indonesia, has a coastal area that has ~~marine tourism~~ the potential to be developed ~~for marine tourism~~. It is expected that marine tourism can bring socio-economic impact to the community. This research was conducted with the objective of assessing the suitability of the area to be developed as a marine and coastal tourism site to provide benefits to the coastal community. ~~Hydrodynamic~~ A hydrodynamic model ~~will be was~~ used in this research ~~as for~~ coastal area mapping. As an approach, Analysis Hierarchy Process (AHP) ~~is was~~ utilized, whose parameters consist of depth, coast type, coast width, brightness, current speed, water base materials, observation of dangerous biota, and availability of fresh water. Based on the overall mapping area of 98,644 ha, the research results show that the area that can be utilized is 7979 ha with a 'very ~~suitable~~ suitable' category, while there is ~~ana further~~ area of 1045 ha which can still be classified in the ~~appropriate~~ 'suitable' category.

Keywords: hydrodynamic model; marine and coastal tourism; Analysis Hierarchy Process (AHP)

Citation: Hermawan, S.; Mihardja, E.; Pambudi, D.; Jason, J. Hydrodynamic Model Optimization for Marine Tourism Development Suitability in Vicinity of Poso Regency Coastal Area, Central Sulawesi, Indonesia. *Sustainability* **2023**, *15*, x. <https://doi.org/10.3390/xxxxx>

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1. Introduction

Coastal areas are considered as essential from an environmental and economic standpoint [1]. These two standpoints have detrimental consequences to the coastal communities. Therefore, it is important to manage those environments' resources sustainably [2]. Typically, resources of a coastline destination play a significant role in luring investments and infrastructure related to tourism. This is because coastal areas typically have a variety of natural resources in addition to cultural treasures [3]. According to Bob et al. (2018), coastal and marine tourism (CMT), which is a component of the ocean economy, has enormous development potential that can support sustainability and the creation of jobs [4].

Coastal tourism is an activity that involves visitors, locals, and the places they want to go, especially the coastal environment and its natural and cultural elements. [5]. ~~Marine tourism~~ and coastal tourism are two of the oldest forms of travel, and ~~these environments are~~ highly sought-after

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destinations for tourists [6]. Therefore, **marine and** coastal tourism is one of the largest and fastest-growing divisions of the tourism business. According to projections, 8.6 million people would be employed by marine and coastal tourism by 2030. Hence, it makes up 26 percent of the entire global ocean economy [7]. Sustainable development is impacted by coastal and **marine** tourism in all its aspects. The natural ecosystems of coastal resorts are altered by poorly managed tourism activities in terms of their environmental impact. The demand for natural resources has grown dramatically because of widespread tourism. The coasts are overrun by mass tourism, which damages local ecosystems and has a negative impact on local species in coastal ~~ecosystem~~**ecosystems**. Additionally, induced land-use change contributes to coastal artificialization and transport-related air and noise pollution. Through the creation of negative externalities that are frequently uncompensated, this condition affects the welfare of residents and local communities [8].

Indonesia, as an **archipelagic** country with 17,499 islands and a total coast length of almost 81,000 km, as well as **being** the largest nation in the Indian Archipelago, is offering tremendous potential for coastal and marine tourism. The tourism industry has helped to enhance the country's overall Gross Domestic Product (**GDP**) **since** Indonesia is one of the most desirable tourism destinations ~~from for~~ tourists around the world [9]. Development of the tourism industry in Indonesia has been planned to lessen poverty and protect the environment and natural resources [10]. The main challenge for the coastal planner in designing the development **of** coastal tourism ~~at in~~ **remote areas** is a limited number of measurable data, along with the capacity building of the people.

Poso **Regency's** 4,013 km of coastline offers a lot of potential for marine ecotourism development (see Figure 1). However, the local coastal communities are not utilizing **it** optimally. If **the** natural resource potential is explored ~~to their~~ its full potential, it can help to bring positive socio-economic impact to local communities. Most of the coastal communities in ~~Indonesia~~**Indonesia's** coastal ~~region~~**regions** live in poverty, with a ~~total~~-per capita **income** below World Bank norms. Hence, the tourist industry is one of the key areas where it is expected to make a significant contribution to the efforts to improve the existing economy in coastal ~~community~~**communities**. It can be stated as **well that** coastal regions have a high economic value that includes both tangible and intangible economic benefits. Based on the tourist visitation report issued by Central Sulawesi Tourism Office in 2020, there ~~are increasing~~**were increases** in foreign tourist numbers in 2021 and 2022, with Poso regency ~~is being~~ one of **the** main ~~attraction~~**attractions** for foreign ~~tourist~~**tourists** besides Tojo Una-Una and Palu **Regency**. As tangible ~~benefit~~**benefits**, there is **a** potential increase in regional Gross Domestic Product (**GDP**) in Central Sulawesi province from USD **270,000** in 2022 to USD **521,000** in 2023. If the coastal area in Poso regency is further developed as **an area of** coastal ~~area~~-tourism, it will increase ~~Poso~~**Poso's** GDP contribution to the tourism sector in Central Sulawesi Province. The tourism sector itself has contributed ~~at on~~ average between **3- and** 3.5% to the total **provincial** GDP. Intangible benefits will be found in the infrastructure development for tourism and maintenance of the

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ecosystem in the tourism area. Hence, it can support the local economic growth in coastal areas [11].

Poso Regency (see Figure 1) was chosen as a ~~research~~-field for this research because it has a lot of natural resources. On the contrary side, these natural resources are not currently being utilized to their full potential by the coastal communities. Previous studies for developing tourism in Poso Regency ~~are were~~ mostly focused on land-based tourism. Balingki (2015) has proposed a strategy for development of coastal tourism in Lake Poso by analyzing internal and external factors, i.e., tourism potential, accessibility as internal factors, and government support as external factors [12]. ~~Further~~A further study ~~in on the~~ implementation of strategy development for coastal tourism in Lake Poso ~~has been was~~ conducted by Rembang et. al. (2017) to evaluate the effectiveness of ~~the~~ local government tourism office for supporting the development program [13]. Like the research above, a development strategy for tourism in Wera Saluopa waterfall ~~has been was~~ conducted by Abidjulu (2019) ~~to see a~~), ~~finding that in~~ combination with ~~the attraction object~~attractions, such as a cacao plantation, ~~it~~ is possible to bring added value [14].

As the first step in the feasibility study for developing ~~the~~ marine or coastal tourism area, an engineering approach ~~will be is~~ used in this ~~research~~ work. This research will be conducted by building a hydrodynamic model to gather information ~~such as water~~ level conditions, current characteristics, wind speed, and tides to determine the oceanographic conditions in the Poso Regency area. With the assistance of these data, it should be possible to decide what actions should be taken in the future to develop ~~the~~ Poso coastal area in terms of tourism development, marine culture, and other areas. It is expected that this research will ~~havemake a~~ significant contribution ~~on to~~ the community in and its ~~surroundings~~surroundings in Poso Regency, particularly to the community in ~~the~~ coastal area, by providing information, education, and applications for optimizing natural resources. Education to the community is needed to prepare ~~its~~ readiness ~~in for~~ foreign and domestic tourism development. Unfortunately, an unstable environment is still susceptible to violence. This poses one of the largest threats to Poso Regency's tourism industry [15].

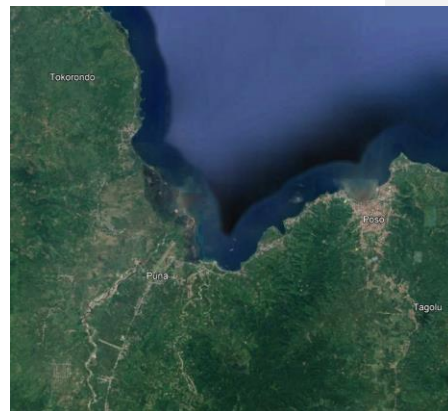
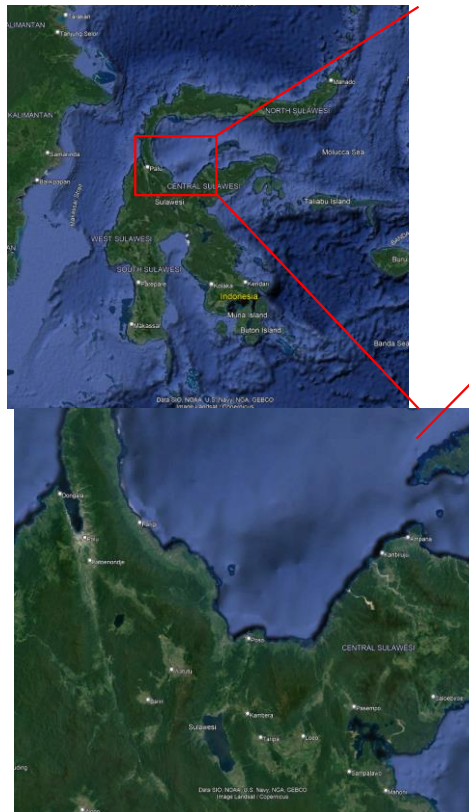


Figure 1. Research field area, coastal area in Poso **Regency** in Central Sulawesi, Indonesia.

2. Materials and Methods

To create this hydrodynamic model simulation, Poso Beach, which is in Poso **Regency**, Central Sulawesi, Indonesia, was utilized as the setting point. The model will bewas run for 2 weeks. As theThe first step, it starts with

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was preparing and determining observation points around the coastal area of Poso Regency. Secondly, the data needed for research ~~is~~ were prepared from the General Bathymetric Chart of the Ocean (GEBCO) for bathymetry data, Copernicus for wind data, and International Hydrographic Organization (IHO) for water level data. The hydrodynamic model ~~will~~ ~~bewas~~ then assessed for its validity and accuracy with Root Means Mean Square Error (RMSE) method. It ~~will bewas~~ compared also with the data on land, air, and sea observations from Copernicus. The study used wind data, which were collected from the last ten years, from 1 January 2011 to 31 March 2021. The gathered wind data were then processed to create a wind rose diagram (see Figure 2).

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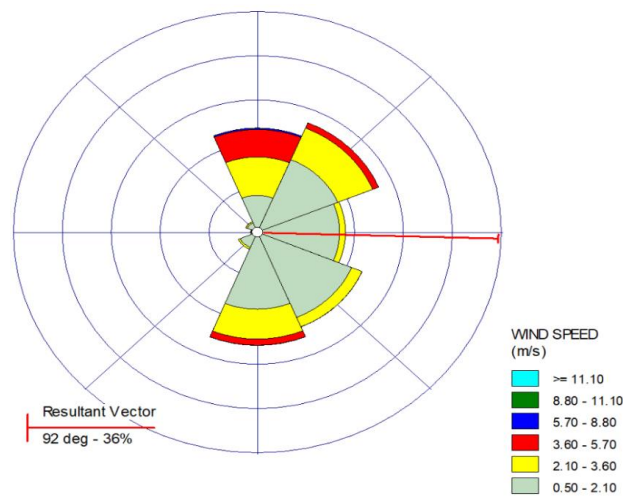


Figure 2. Wind Rose Diagram.

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2.1. Hydrodynamic Model Using Delft3D

The Delft3D model can simulate currents, waves, sediment movement, water quality, morphological development, and ecology in the modeled area, while simulating the original circumstances in rivers, estuaries, and coastal areas. In practice, this application can be coupled with ArcGIS 10.8 and needs several other supporting programs, such as MATLAB. The hydrodynamic modeling program ~~called~~ Delft3D uses numerical techniques to process input data. Astronomical equations (see equation) are used to drive the model by supplying details regarding its boundary conditions (the land border).

The general formula for the astronomical tide which ~~driven~~ drives the hydrodynamic numerical model is:

$$H(t) = A_0 + \sum_{i=1}^k A_i F_i \cos(\omega_i t + (V_0 + u_i) - G_i)$$

H(t) = Water level at time t

A₀ = Mean water level over a certain period

k = Number of relevant constituents

i = Index of a constituent

A = Local tidal amplitude of a constituent

F = Nodal amplitude factor

ω_i = Angular velocity

$(V_o + u)$ = Astronomical argument

G_i = Improved kappa number (=local phase lag)

The primary data are bathymetry data from GEBCO Bathymetry Data, or sounding data from Deeper Smart Sonar. This is to ensure the accuracy of the simulation results. It can serve as a basic reference to see the present and forecast the future dynamic movement of water.

The **Shallow Water Equation** (SWE) is calculated using the **Delft3D-Flow 4.04.02 software** in **Delft3D** with two different variables, namely the velocity and the height **variable**. These variables are then projected onto a line with two directions—horizontal and vertical—or what the **Delft3D-Flow** application refers to as a grid. The **Navier—Stokes** equation is used in the open source **Delft3D 4.04.02 software** system's calculations. The **Navier—Stokes** **Navier** formula **will be** described **as in the** following equation [16].

$$\frac{\partial \rho}{\partial t} + \frac{\partial(\rho u)}{\rho x} + \frac{\partial(\rho v)}{\rho y} + \frac{\partial(\rho w)}{\rho z} = 0$$

x, y, z = Coordinates

u, v, w = Speed components

ρ = Density

2.2. Root Mean Square Error (RMSE)

When evaluating the performance of models in studies like meteorology, air pollution, and climate research, the **Root Mean Square Error** (RMSE) approach is frequently employed as a standard statistical metric. Numerous researchers in geosciences employ the RMSE approach as a common metric to evaluate the model's level of error [17]. Consequently, using the RMSE approach, the hydrodynamic **model that results model's error** can be calculated using the RMSE formula.:

$$RMSE = \sqrt{\frac{\sum_{i=1}^N (\text{Predicted } i - \text{Actual } i)^2}{N}}$$

Predicted_i = Predicted value data

Actual_i = Actual simulation

N = Number of data

RMSE has been used as a benchmark for assessing **the** hydrodynamic **model model's** performance [18,19]. If the RMSE value is within or less than 0.1, the modeling has been done correctly and could be considered as accurate. On the other **sidehand**, if the RMSE value is more than 0.1, the required data collecting phase to support the simulation must be repeated.

The validated hydrodynamic model can be used as **a** supplement to the online collected **data as** well as **to be being** utilized for mapping the suitability of a coastal area. The suitability for tourism development is mapped with **ArcGIS** technology. Only **were the waterways surrounding the Poso Regency area used** for the mapping.

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Comment [M21]: Please state the version number of the software.

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2.3. Analysis Hierarchy Process (AHP)

The Analysis Hierarchy Process (AHP) approach can be used to process a suitability mapping from each of the above suitability parameters. According to Figure 3 [20], this strategy involves estimating values using an analytical framework. As illustrated in Figure 3, the suitability parameter data were divided into three categories: highly suitable, suitable, and unsuitable. Following reclassification, the data were compiled and once more evaluated against the preexisting parameters as shown in Figure 3, resulting in the creation of the suitability map's results [21].

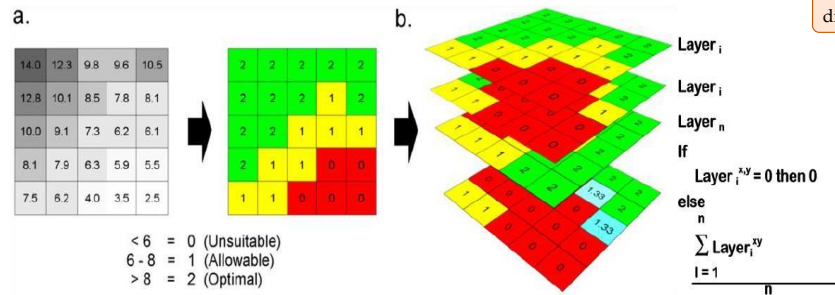


Figure 3. Value summation scheme: (a) Reclassification of Parameter Data (b) Estimation of Some Parameter Data for Final Results.

3. Results

3.1. Model Simulation Using Delft3D

A square grid and bathymetry data from GEBCO were used for the hydrodynamic model simulation. The results from several generated simulations with different grid sizes and Manning's roughness is shown in Table 1.

Table 1. Delft3D model simulation.

No.	Model	Grid (Meter)	Bathymetry	Manning's Roughness	Time Step (Minutes)	Simulation Duration (Days)	Desc.
1	A	200	GEBCO	0.05	60	365	Failed
2	B	1200	GEBCO	0.05	60	365	Failed
3	C	1600	GEBCO	0.05	30 60	30	Failed
4	D	5550	GEBCO	0.05	30 60	14	Successful
5	E	5550	GEBCO	0.05 0.033 0.025	5	14	Successful

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Comment [em26]: Figure 3 has been cited in numerical order and this is cited after Figure 2 which is rose wind diagram

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All model simulation experiments were successful with different ~~manning~~ Manning's roughness numbers in model E. Therefore, Model E is the model used for further research.

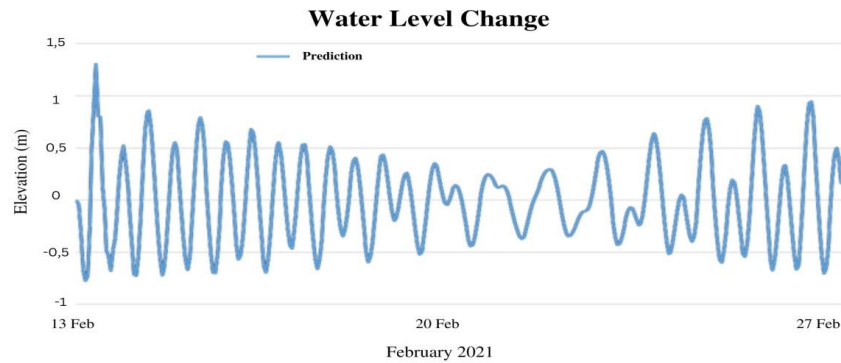


Figure 4. Hydrodynamics Model Results in the Form of Water Level Change Graph.

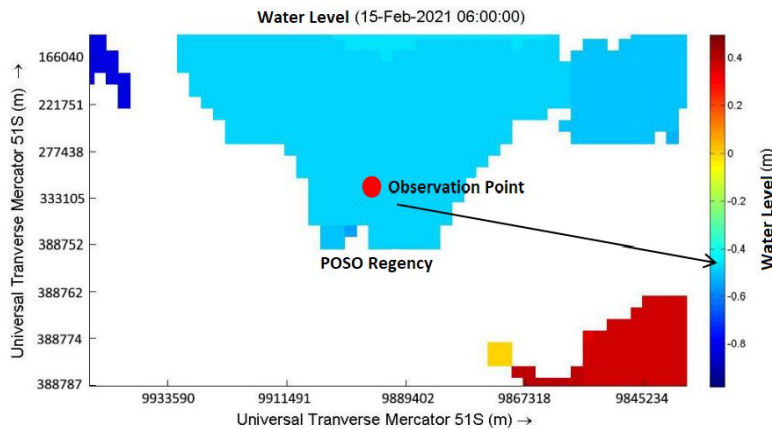


Figure 5. Dimensional Simulation Results of Water Level Change (Elevation).

3.2. Validation and Verification of Simulated Hydrodynamic Model

The RMSE approach ~~will be was~~ used to test and verify the model between the simulation results and the results of the measuring station (Delft Dashboard). ~~Water~~The water level elevation data from the model in Figure. 4 and Figure. 5 ~~will be~~ were used in the RMSE formula. The IHO monitoring station relates to the Poso station, which can be found in the Delft Dashboard program (see Tabel. 2).

Table 2. Root Mean Square Error Calculation Data Model E Manning's Roughness 0.05.

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Comment [M35]: Please use commas to separate thousands for numbers with five or more digits (not four digits) in the picture, e.g., "10000" should be "10,000".

POSO		Jumlah Data (n)=	360
Date and Time	Predicted (m)	Actual (m)	(Predicted - Actual)^2
2021-02-13 01:00:00,	-0,00660431	-0,266	0,067286124
2021-02-13 02:00:00,	-0,0402799	-0,42	0,144187354
2021-02-13 03:00:00,	-0,308369	-0,489	0,032627558
2021-02-13 04:00:00,	-0,667691	-0,446	0,049146899
2021-02-13 05:00:00,	-0,772871	-0,29	0,233164403
2021-02-13 06:00:00,	-0,727247	-0,051	0,457310005
2021-02-13 07:00:00,	-0,240389	0,221	0,212879809
2021-02-13 08:00:00,	0,439049	0,464	0,000622552
2021-02-13 09:00:00,	0,86659	0,623	0,059336088
2021-02-13 10:00:00,	1,30275	0,661	0,411843063
2021-02-13 11:00:00,	0,80441	0,57	0,054948048
2021-02-13 12:00:00,	0,796764	0,374	0,1787294
2021-02-13 13:00:00,	0,173357	0,17	1,17359E-05
2021-02-13 14:00:00,	-0,11178	-0,132	0,000408848
2021-02-27 19:00:00,	-0,127693	0,054	0,033012346
2021-02-27 20:00:00,	0,206054	0,22	0,000194491
2021-02-27 21:00:00,	0,430109	0,306	0,015403044
2021-02-27 22:00:00,	0,499308	0,285	0,045927919
2021-02-27 23:00:00,	0,401124	0,159	0,058624031
2021-02-28 00:00:00,	0,166415	-0,038	0,041785492
TOTAL (Σ)			12,249
The Root Mean Square Error (RMSE)			0,184

Furthermore, this model ~~will be was~~ used as supporting data for mapping the suitability of coastal area development in Poso **Regency** with the ArcGIS application.

3.3. Coastal Area Development Mapping with ArcGIS

The suitability mapping of coastal marine tourism in this study ~~will be was~~ based on the evaluation ~~in of~~ depth, brightness, slope, current speed, and wave height as criteria in **Table 3**.

Table 3. Marine Tourism Suitability Score Beach Category [22,23].
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Parameter	Unit	Very Suitable	Suitable	Unsuitable
Water depth	m	0–3	>3–6	>6–10
Type of coast		White sand	White sand with coral	Black sand, coral stiff
Wide of coast	m	>15	<10–15	3–9
Bed coast material		Sand	Sandy coral	Sandy mud
Current speed	m/s	0–0.17	0.17–0.34	0.34–0.51
Coastal slope	°	<10	10–25	>25–45
Water clarity	%	>10	>5–10	3–5
Coastal closing area		Coconut tree, open area	Scrubs , lowland, savanna	High scrubs

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Dangerous biota		No	Jellyfish, sea urchin	Nani's fur, stingray
Freshwater	Km	<0.5	>0.5–1	>1–2

Depth mapping is shown in Figure 6. There are more than 90% of areas at the area, about 88,780 ha which are remarked, was marked as unsuitable, especially around the center of the map. These areas are unsuitable because the depth is around 6 to 10 m, which is considered dangerous for tourism activity. However, it can be seen that areas around the coast are remarked marked as very suitable since these areas have 0 to 3 m depth. This is considered acceptable and safe for tourism activity.

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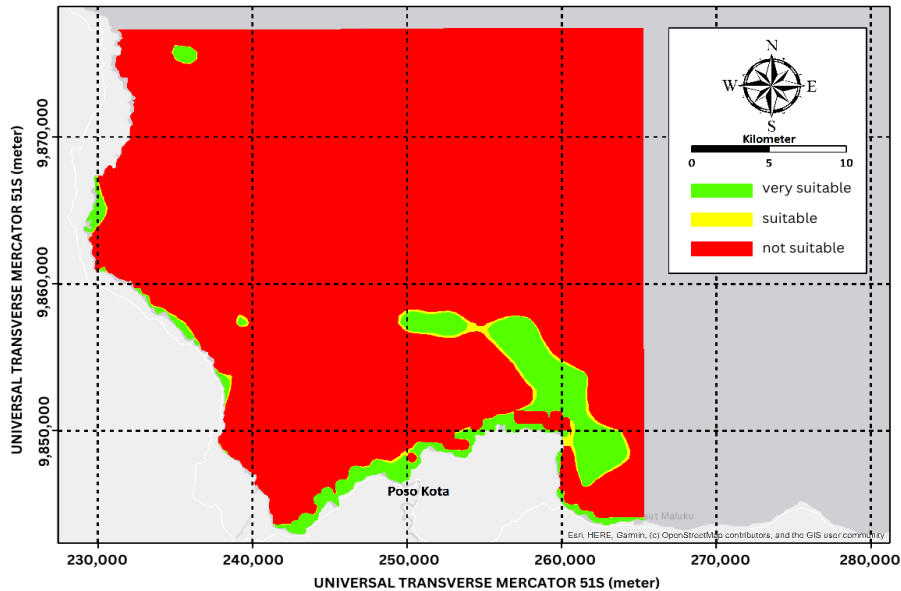


Figure 6. Beach Category for Marine Tourism Suitability Map Based on Depth.

Based on the current speed category, all areas on the suitability marking are marked green as shown in Figure 7 as very suitable for marine tourism. It can also be observed that the current speed in this area can be considered low, at about 0.17 m/s, which makes it suitable for tourism.

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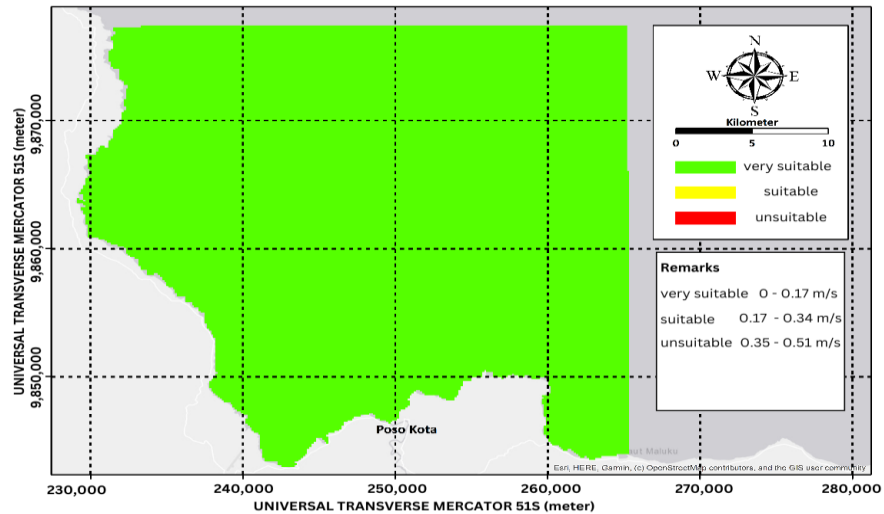


Figure 7. Coastal Area Category Marine Tourism Suitability Map Based on Current Speed.

As shown in Figure 8, about 70% of the mapped ~~areas with~~ area, about 69,050 ha ~~are remarked, was marked~~ as unsuitable with red color. It indicates ~~that these~~ those areas which have less than 5% water clarity ~~with~~ about 4952 ha, are both unpleasant and dangerous for marine tourism. There are only certain areas that are categorized as very suitable and suitable. These areas are shown in green color as very suitable category and yellow color as suitable category.

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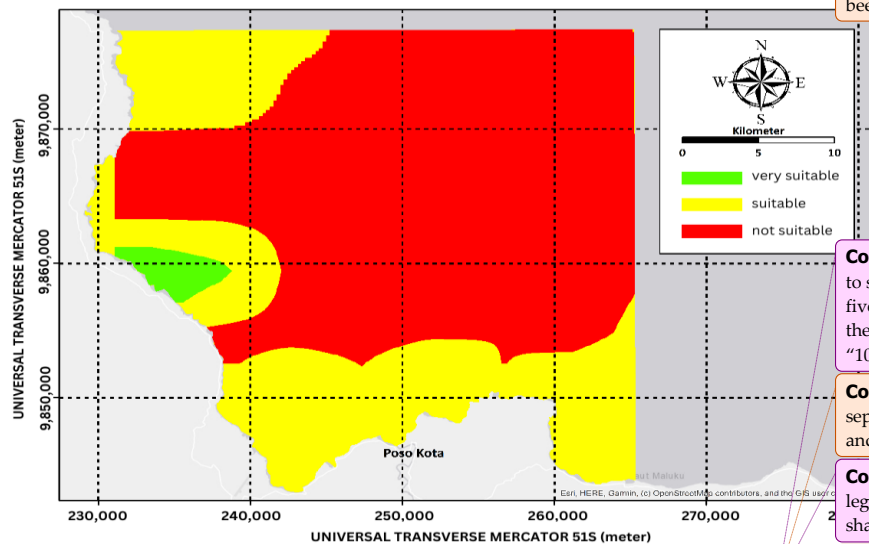


Figure 8. Beach Category Marine Tourism Suitability Map Based on Brightness.

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Based on slope category, as displayed in Figure 9, most of the mapped areas are marked as very suitable with less than 10° slopes. There are some small areas, at 2% of the total area—(1972 ha), with yellow color are considered as suitable. Like the slope category, it can be seen in Figure 10, all mapped areas are considered very suitable for marine tourism based on wave height.

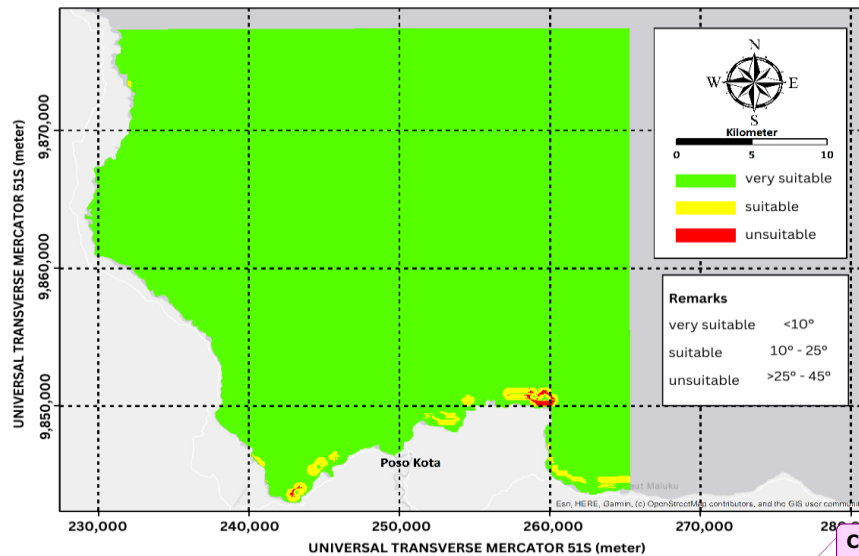


Figure 9. Beach Category Marine Tourism Suitability Map Based on Slope.

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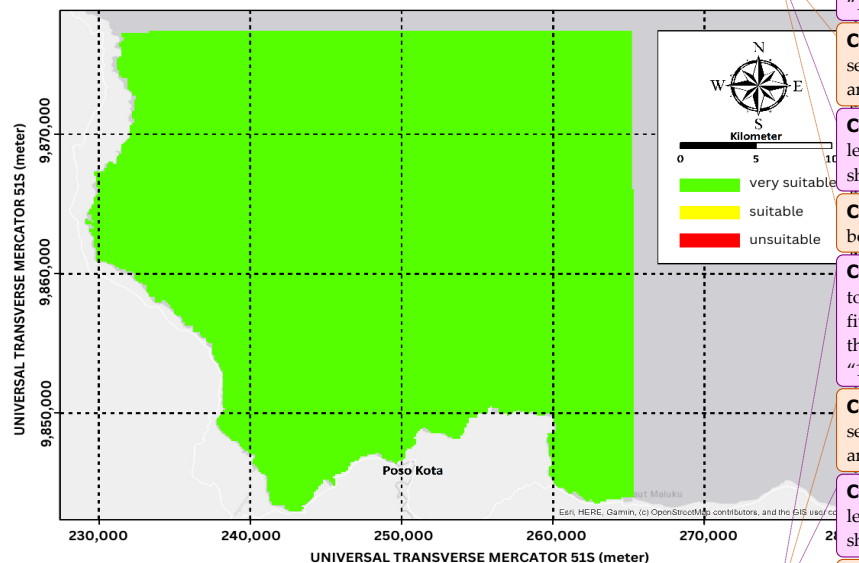


Figure 10. Beach Category Marine Tourism Suitability Map Based on Wave Height.

The overall results, by using the AHP approach and considering the depth, current speed, brightness, slope, and wave height factors, indicate that most of the coastal areas in Poso Regency are suitable for marine tourism. It can be seen from Figure 11 that those areas with (7979 ha) marked with green color are very suitable for marine tourism (in green color), while there are also 1045 ha area marked in a yellow color that can be considered as suitable as well. Some coastal areas, and most of the open water areas, in red color are marked as unsuitable for marine tourism because they have depth more than 10 m and low water clarity.

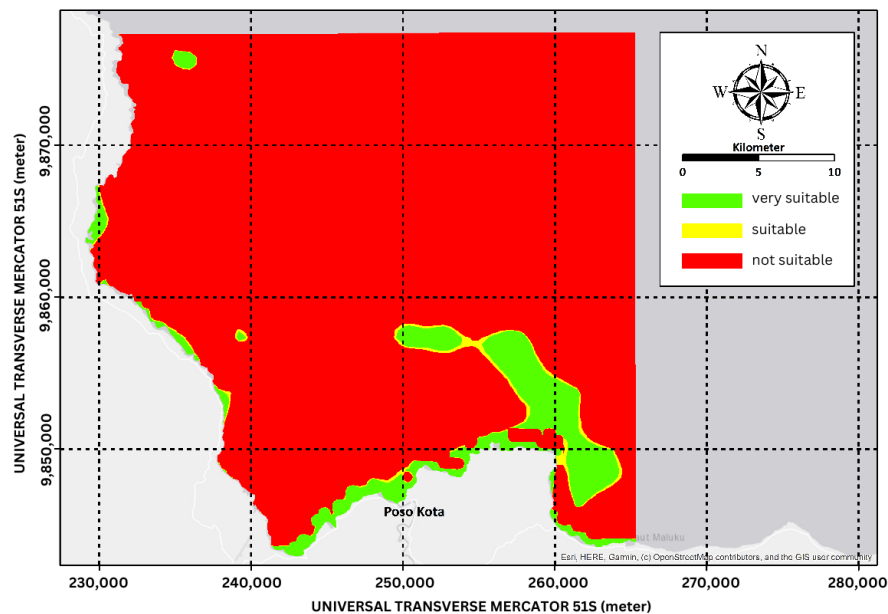


Figure 11. Result of Beach Maritime Tourism Suitability Map.

4. Discussion

Data simulations were run from 13 to 28 February 2021 for a period of 2 weeks. Model A simulations were run with a 200-m grid, Manning's roughness of 0.05, and a time step of 60 min. The simulation failed because the grid was unstable. In Model B, the grid was improved by increasing the grid size to 1200 m and orthogonalizing the grid. However, Model B still experienced errors. The grid was then improved again in Model C by increasing the grid size and using a time step of 5, 30, and 60 minutes. It turned out that Model C still has errors. The Manning's roughness cannot be increased because the largest Manning's roughness limit in the model is 0.05. Model D was created with 5550 m grid and 0.05 as the Manning's roughness value. It turned out to be successful with 3 different time steps.

Model E was created with the same grid as Model D, but with 3 different Manning's roughness values. With this modification based on the Model D, all parameters in Model E were successfully

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simulated. Model E₁ with a ~~manning~~Manning's roughness number of 0.05, has an RMSE value close to 0.1, namely 0.184. It can be concluded that ~~Model~~ E is accurate enough to describe the original condition of the waters in Poso ~~Regency~~. The simulated hydrodynamic data from ~~Model~~ E can be applied in Analysis Hierarchy Process (AHP) to determine the suitability of the areas which can be developed ~~asfor~~ marine tourism.

The AHP mapping result shows that Poso ~~regency~~ ~~Regency's~~ coastal ~~areas have~~ suitable depth for marine tourism activity with less than 3 m of depth. Compared to ~~the~~ Pantar Strait area, which has ~~a~~ depth of 1.1–2.6 m [24], Poso ~~regency~~ ~~Regency's~~ coastal areas are more suitable for swimming and bathing. Based on current speed, with ~~a~~ maximum current speed of 0.17 m/s, it is ~~marked~~ as very suitable [25]. In the water clarity category, the AHP mapping showed many varieties of ~~remarks~~marks along the ~~areas~~. Even though it shows lower water clarity compared to other coastal areas, it was still ~~remarked~~marked as very suitable. The coastal area in Poso ~~Regency~~ is considered as flat beach, which has ~~a slope of~~ less than ~~10° slopes~~10°. This will be ~~asan~~ advantage in the safety and convenience ~~factors~~ ~~if~~for marine tourism.

5. Conclusions

The results of the beach category marine tourism suitability map, based on the mapped region with a total area of 98,466 ha, ~~have~~ revealed that 7979 ha is 'very ~~suitable~~suitable', while 1045 ha is ~~suitable~~'suitable' for marine tourism development. However, ~~important information, such it is noted that mapping of dangerous animals cannot be acquired using internet stations. To meet all these requirements, either regional data provided by the local government or live data is needed. Only are four out of ten suitability factors—depth, brightness, slope, and current speed—included while in mapping the suitability of coastal marine tourism in this research.~~

From ~~the~~ engineering side, it is expected that this research will contribute to the development of coastal tourism by introducing an engineering method to ~~the~~ local government tourism office ~~on~~ how to conduct a feasibility study in determining a suitable coastal tourism area. The next step will be ~~focused~~ on the preparation of a tourism development plan and its supporting infrastructure based on this research ~~result~~. It is needed to also prepare the SOP for QHSE matter in the development plan to avoid any dangerous situation such as drowning hazard and determining "no ~~to go~~" ~~area~~areas. As ~~the~~ COVID 19 pandemic is still lurking, there must be ~~an~~ SOP which regulates the health regulation there, distance keeping, ~~masker~~ obligation ~~to wear a mask~~, etc.

Author Contributions: Conceptualization, S.H.; Methodology, D.A.P. and J.J.; Software, D.A.P. and J.J.; Validation, D.A.P. and J.J.; Formal analysis, D.A.P. and J.J.; Resources, S.H.; Writing—original draft, E.M.; Writing—review & editing, E.M.; Supervision, S.H. and E.M. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement:

Data Availability Statement:

Conflicts of Interest: The authors declare no conflict of interest.

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