Kepada Yth Ketua Editor Ju

Ketua Editor Jurnal Manajemen Hutan Tropika

Di –

Tempat

Salam Hormat

Bersama ini kami sampaikan bahwa artikel dengan judul "Penggunaan Lahan Skenario di Hutan Lindung Wosi Rendani (PFWR) Kabupaten Manokwari. Artikel ini belum pernah dipublikasikan dan tidak sedang dipublikasikan pada jurnal lain. Kami sangat berharap bisa dimuat di Jurnal Manajemen Hutan Tropika karena jika dimuat akan banyak disitasi oleh para peneliti dan pemerhati kehutanan danLingkungan terutama orang yang bergerak dalam

mitigasi bencana.

Untuk itu mohon arahan dan masukan demi perbaikan artikel. Penulis senantiasa menunggu dan akan memperbaiki sesuai dengan arahan editor dan reviewer sekiranya artikel kami belum lengkap. Demikian atas perhatian dan kerjasamanya disampaikan terima kasih.

Manokwari, 18-12-2015

Hormat Penulis

Mahmud, S. Hut., M. Sc

EVALUASI LEMBAR

Judul: Penggunaan Lahan Skenario di Hutan Lindung Wosi Rendani (PFWR) Kabupaten Manokwari
Komentar untuk penulis
1. Apakah judul kertas berguna dan tepat?
Saya akan merekomendasikan berubah menjadi sesuatu seperti "Penggunaan Tanah Skenario di Hutan Lindung Wosi
Rendani di Manokwari Kabupaten (Indonesia) "
2. Apakah uraian tentang metode yang memadai untuk replikasi oleh orang lain (jika tidak metode standar)?
Tidak, bab metode tidak memiliki deskripsi daerah penelitian dan metode-metode yang diterapkan. saat ini
hanya mencakup daftar data yang akan dikumpulkan (tapi tidak seberapa) dan beberapa perangkat lunak yang telah digunakan (tapi tidak
untuk apa).
3. Apakah semua tabel dan angka-angka jelas dan diperlukan?
Tidak, lihat komentar dalam dokumen.
4. Apakah diskusi yang memadai?
Hasil dan Pembahasan digabungkan dan tampaknya mencakup ringkasan dari keadaan saat sebuah
kawasan hutan lindung dan beberapa saran untuk penggunaan yang lebih berkelanjutan dan perlindungan hutan ini.

Sayangnya sangat sulit untuk memahami karena bahasa Inggris miskin.

5. Apakah ada publikasi penting pada topik yang penulis telah terjawab?

Seluruh literatur internasional tentang topik ini tampaknya hilang sebagai penulis mengutip hampir semata-mata

jurnal dan homepage yang sebagian besar ditulis dalam Bahasa Indonesia indonesia.

6. Apakah ada kesalahan jelas?

Bahasa dokumen tidak cukup dimengerti untuk mendeteksi kesalahan karena tidak mengandung kalimat lengkap.

7. Jika kertas dapat dipersingkat, dapat Anda merekomendasikan bagian mana (s) yang akan dihapus atau disingkat?

Hasil dan Pembahasan saat ini mencakup 14 halaman dan pasti akan perlu dipersingkat. Banyak Hasil diulang beberapa kali.

8. Dapatkah Anda mengomentari keaslian ilmiah dan kegunaan kertas?

Makalah ini tampaknya menjadi baik, ilmiah asli dan berguna karena berhubungan dengan deforestasi dalam

kawasan lindung dan saran tentang bagaimana menggunakan dan mengelola daerah-daerah yang lebih berkelanjutan. Banyak

kawasan lindung di seluruh dunia dan terutama dalam kesepakatan tropis dengan masalah yang sama dan setiap

penilaian seperti penelitian ini adalah karena membantu. Bahkan, jauh lebih karya seperti ini akan menjadi

dibutuhkan.

9. Apa rekomendasi Anda untuk kertas (penerimaan, modifikasi atau penolakan)?

• EVALUATION SHEET

Title: Land Use Scenario in Protected Forest Wosi Rendani (PFWR) Manokwari District Comments for the author

1. Is the title of the paper useful and appropriate?

I would recommend changing it into something like "Land Use Scenario in Protected Forest Wosi

Rendani in Manokwari District (Indonesia)"

2. Is the description of methods adequate for replication by others (if not a standard method)? No, the methods chapter lacks a description of the study area and any applied methods. It currently

only includes a list of data to be collected (but not how) and some software that has been used (but not

what for).

3. Are all the tables and figures self-explanatory and necessary?

No, see comments in the document.

4. Is the discussion adequate?

Results and Discussion are combined and seem to include a summary of the current state of a protected forest area and some suggestions for more sustainable use and protection of this forest

Unfortunately it is very hard to understand due to the poor English language.

5. Are there any important publications on the topic that the authors have missed?

The entire international literature about this topic seems to be missing as the authors cite almost solely

Indonesian journals and homepages that are mostly written in Bahasa Indonesia.

6. Are there any evident errors?

The language of the document is not understandable enough to detect errors as it does not contain any

complete sentence.

7. If the paper can be shortened, can you recommend which part(s) to be deleted or shortened?

Results and Discussion currently cover 14 pages and would definitely need to be shortened. Many

results are repeated several times.

8. Can you comment on the scientific originality and usefulness of the paper?

This paper seems to be both, scientifically original and useful as it deals with deforestation within

protected areas and suggestions about how to use and manage these areas more sustainably. Many

protected areas worldwide and especially in the tropics deal with the same problems and any assessment such as this study is therefore helpful. In fact, much more works like this would be

needed.

- 9. What is you recommendation for the paper (acceptance, modification or rejection)?
- In its current shape I am afraid that I have to recommend a rejection of the paper as it is absolutely

unreadable due to its bad language. However, it seems to deal with an interesting and very important

topic, so I would be delighted to see the paper published in a completely rewritten form later on. If the

English cannot be improved, it would be worth to publish the Paper in Bahasa Indonesia what might

even be more effective to reach the local authorities and decision makers.

Additional comments for the author

(You may continue on another sheet if necessary.)

The study really seems to be very interesting and important so please don't give up publishing it. I

would however recommend to publish it in Bahasa Indonesia as the English language seems to be the

main problem of the document and providing the results and suggestions in a local language might

provide a better chance to reach local decision makers. Good luck!

Dalam bentuk saat ini saya takut bahwa saya harus merekomendasikan penolakan kertas seperti itu benar-benar

terbaca karena bahasa yang buruk. Namun, tampaknya berurusan dengan menarik dan sangat penting

topik, jadi saya akan senang untuk melihat makalah yang diterbitkan dalam bentuk sepenuhnya ditulis ulang di kemudian hari. Jika

Inggris tidak dapat diperbaiki, itu akan menjadi layak untuk menerbitkan Kertas dalam Bahasa Indonesia apa yang mungkin

bahkan lebih efektif untuk mencapai otoritas lokal dan pengambil keputusan.

komentar tambahan untuk penulis

(Anda dapat melanjutkan lembar lain jika diperlukan.)

Studi ini benar-benar tampaknya sangat menarik dan penting jadi jangan menyerah mempublikasikannya. saya

Namun akan merekomendasikan untuk menerbitkannya dalam Bahasa Indonesia sebagai bahasa Inggris tampaknya menjadi

Masalah utama dari dokumen dan memberikan hasil dan saran dalam kekuatan bahasa lokal

memberikan kesempatan yang lebih baik untuk mencapai pengambil keputusan lokal. Semoga berhasil!

1 Land Use Scenario in Protected Forest Wosi Rendani (PFWR) in Manokwari District (Indonesia) 2 3 4 ABSTRACT 6 This study -aims to determine the land-use alternatives on consecutive Protected Forest Wosi Rendani (PFWR) including: 1. PFWR remain protected areas, although the total score of 130. This forest serves 7 to protect soil, water and -the danger defence of flooding and landslides. In this region there areis a 8 potential springs, caves, and waterfalls that can be developed -into eco-tourism and environmental 9 10 services. 2. Urban forest. With so many people migrate to more hot air, air quality decreases and environmental pollution increases, so the presence of the better urban forest environment and -add 11 12 catchment areas. 3. Community forest. In the region there are plants PFWR forestry, agriculture and fruit, which society can only take flowers, fruits and seeds their planted. d. Region of buffer-. Buffer 13 14 zone acts as a buffer to reduce the pressure of population on the area around the village area or areas of high interact with integrating conservation and economic interests of the surrounding community. 5. 15 16 Cultivation and settlement. There are three settlements in the region PFWR namely: Soribo, Kentestar and Ipingoisi, 4 settlements and ownership outside the region PFWR namely: Tanah Merah Indah, 17

Ajoi, Buton, Makobrimob as well as plots of land owned by the developers such as: bank Arfindo,

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21222324

Lumintu, Irman Jaya and Suntari.

Keywords: Policy, land use, scenario, protected forest, Manokwari

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Commented [K6]: if PFWR is a protected forest, then it would be protected entirely, so there would be no need to investigate remaining protected areas.

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Commented [K8]: 130 what? m²?km²?

Commented [K9]: either there are springs or there are no springs. the potential of springs is a bit week to highlight an area.

Commented [K10]: Why should people migrate to hot air?

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INTRODUCTION

Protected forest Wosi Rendani has benefication as the lungs of the city, as well as to maintain water supplies to meet the needs of water for the city of Manokwari, therefore, it is stated in Governor's decree No.118/GIB/1969 hydrological mentioned as a protected forest (MoF 2008). PFWR are merely the appointment by the Governor and the establishment of the Ministry of Forestry has not become a problem until now.

According to Ekawati *et al.* (2011), Protected forest has been concerned both at regional and international levels in view of the function of the protected forest is so big. However, in some areas there has been damaged, for example in West Java rate of destruction of 23.341 – 33.951 ha per year which led to the formation of critical land (Ekawati *et al.* 2010). In 1997 Protected forests in Manokwari also experienced shrinkage was 300.65 ha to 251.5 ha. The latest data according Forestry departement (2014) show protected forest Wosi Rendani rest of 88 ha, the area changed into residential, agricultural, and offices.

Determination of conservation in the province of West Papua province is difficult to materialize if the problems that exist in protected forests and conservation areas not addressed. Sinery *et al.*(2014) reported that issue of protected forest including: excavation, land grabbing, opening residential areas, land clearing by burning, shifting cultivation, the loss of a boundary, an enclave (settlements and land ownership), opening the area for roads, street paving, and soil erosion. Though protected areas serves to protect water and soil in the region as well as around it. Subarna, T (2010); Pitopang, R (2012) factors mentioned -that affect the community work the land in protected forest including community economic pressure, the motivation of people to have a minimum amount of land and forest security officers.

Reality shows that the government is less successful in managing a number of protected areas and conservation and not just because it is less or not available policies, but rather the inability to

Commented [K13]: irrelevant what happens in Java if your paper is about a forest in Manokwari.

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implement a number of policies in addition to the limitations and constraints of the field. Limitations include knowledge, scarcity of -information, personnel lack the skills and poor institutions to manage the area. Judgments in the protected forest management issues and conservation areas have not received a positive response from the public.

Protracted problems in PFWR government must be immediately established and use status. This study aims to determine the land use alternative of protected forest Wosi Rendani Expected from this study into consideration local and central government to immediately determine the status of the definitive order status becomes clearer and more focused management.

METHODS

Research has been conducted in the soil laboratory, planning and forest management laboratory, conservation and environmental laboratory and region Wosi Rendani Forest Preserve District Manokwari. Data needed include: land units the number of villages, community identity, the benefits of plants, the potential PFWR species of plants (trees, horticultural, MPTS) Materials used are PFWR maps, thematic maps, soil sample results of field surveys arc set of computers with GIS 3.3 software, microsoft office and QSB, GPS, soil test kit, field tools and stationery.

Data collected-, both primary and secondary data, are analyzed by using descriptive, quantitative and tabulation. Determination of the suitability of land for protected areas was based on the decision of the President No. 32 of 1990 on the management of protected areas, criteria and procedures for the establishment of protected areas and government regulation nu. 44 of 2004 on forest planning. Referral land conversion is based scoring result of each unit of land. Parameters considered land slope (weight 20), for the type of soil and erosion sensitivity (weight 15) and -rain intensity (weight 10). The result is a direction function of the area (spatial) ie a total score of >-175 into the area protected function, a total score of 125-175 into a buffer zone and a total of <125 into the area of cultivation and settlement.

Commented [K15]: what is a "land use status"?

Commented [K16]: Well, if it is a protected forest, there should not be any land-use, so it seems to be pointless to look for alternative lend-uses. Sadly it seems that even if the forest has the official status of being a protected forest, illegal deforestation leads to an immense loss within the official protected area. Therefore the aim should not be to look for land-use alternatives what would be illegal as well, but how to stop illegal deforestation within a protected forest.

Commented [K17]: First explain where you worked (description of study site: where is the forest locate, how big is it, which climate, which vegetation type etc.) and then you can add which labs you used if necessary. If you want to mention the labs, you would need to add which analyses you carried out there.

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RESULTS AND DISCUSSION

Government policies that do not favor the PFWR impact on deforestation and forest degradation. Policies- Esau Sesa -by opening of a new road at the beginning of 1990 in east PFWR, caused damage and a decrease in forest areas such as Table 1.

Natural potential PFWR natural potential areas such as: caves, springs, waterfalls, flora and fauna (Tables 2 and 3). Flora on PFWR including native and exotic (Table 3) there are also animals such as wild boar, possum, squirrels, bats, birds, reptiles, and insects. This cave is classified as very beautiful where the cave exit taps springs are utilized as a source of water. At the mouth of the cave installed four pipes, each two pipes to taps and other plumbing for local communities. Water discharge exploited for PDAM currently only 10 L/s when the entire water flow can reach 448 L/sec. This cave is shaped like an eye, with a width of cave 6 m, height of 3 m with long cave 500 m.

After entering the cave will be surprised by the size of the larger area, the width of 8m, height 6 m with the number on the wall above the cave stalagmite. In Goa too many drops of water from the top wall (stalagmite) and hardly stalactite, probably due to the rapid discharge of the cave. Droplets of water from the cave wall is what will add and maintain the flow of water from the cave. Regions that are in HLWR cave should remain protected so that springs out of the cave is not reduced. —There are three waterfalls nearby, width between 2 - 3m with and high waterfall 2 m. This waterfall is very crisp and clear making it suitable for bathing for tourists who visit. 3rd waterfall in the adjacent location of this future can be developed into objects and tourist attraction —on a limited basis. Objects and tourist attraction—development of protected forest waterfall Rendani suitable Wosi is Ecotourism, where the number of tourists—set timing, amount, and the visiting group is limited. —In the region there are three locations HLWR spring, so this is a material consideration HLWR appointment by decree of the Governor of West Irian Jaya Number: 118 / GIB / 1969 serves as a hydro-orologis, namely the

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99 prevention of erosion, regulating the water system and maintain soil fertility. According PDAM Kab. 100 Manokwari there are 12 locations springs are used as a source of water supply for the city of Manokwari, 3 of them in HLWR, such as springs Rendani 1, 2 Rendani springs and cold springs times. 101 Type of soil The type of soil is a red-yellow podzolic HLWR / ultisol. This soil type has 102 103 characteristics: highly leached soil, the parent material in the form of siliceous sedimentary rock, marl, sandstone, clay and stone. Podzolic soil / ultisol is soil with argillic horizon or kandik acidic with a 104 105 low base saturation. This land is generally grown from the old parent material, are found in areas with clay rock parent material. Ultisol land is a vast area in the world that still remains to be developed as an 106 107 agricultural area. Water in the soil is generally reasonably available because it is located in areas of high rainfall and a primitive peasant farming areas. PFWR society in the region even though the usual 108 109 practice shifting cultivation soil physical and chemical properties that are not good. According Harjowigeno (2010) ultisol soil type usually gives a good production in the first few years, for nutrients 110 in surface soils collected through biocycle process has not been exhausted. The use as forest soil 111 fertility can be maintained because the recycling process. Bases are leached into the underground part, 112 absorbed by the roots of forest plants and returned to the surface through autumn leaves. When forests 113 114 are cleared, then the annual crops or weeds are not able to recycle bases (nutrients) because the roots 115 are not deep.

Commented [K23]: autumn in the tropics...?

Topography Circumstances rather steep topography affects the amount of rainfall, air, temperature and wind speed. A striking difference in topography will result in differences in the amount of rainfall and generally a higher place much rain but the air temperature is lower, while the low places sometimes rain rather low and somewhat high relative temperature (Asdak C.204). Precipitation that falls on the area a bit steep to trigger erosion and landslide if an area is open both to agriculture and settlement. The

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rain that fell in open areas such as settlements and agriculture would easily water until the soil surface.

Energy rainwater will solve the larger soil aggregates / chunk of land.

Topography on the north side which has a steep slope (25-45%) after a 320 m (7-11 observation

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point) of the boundary markers HLWR. While classified as very steep (> 45%) after 500 m (the observation point 17-24) of the boundary markers. After the observation point to 24 obtained Soribo village. Topography in the middle which has a steep slope (25-45%) after 200 m (the observation point 4), temporarily classified as very steep (> 45%) after a 600 m (point of observation 20-22) of the boundary markers. To the south side only 10 observation points, given after the 10th entry point Mako Brimob region. The south side of the steep topography (25-45%) after a 1600 m (observation point 3-5) of the boundary markers PFWR (Sinery et all. 2014). So that the overall topography on Protected Forest Wosi, slope value of 21.19% was classified as grade 3 rather steep slope. Rainfall Rainfall is the input of water on Earth's surface. The distribution and intensity of rainfall effect on soil absorption. At the beginning of the rain, the water will be easily absorbed by the ground, but if the rain had saturated water will flow on the surface of the soil to the flat slope of a particular place. Is based on climate data from the central station Meteorological and Geophysical Institute of Meteorology station V region of class III Manokwari average rainfall for 20 years end the period 2003-2012 amounted to 46 259 mm. The highest rainfall in 2012 amounted to 3288 mm, while the lowest rainfall in 2003 amounted to 1 472 mm, the average rainfall of 2312.95 mm. The highest rainfall intensity in 1994 amounted to 17.97, its lowest in 2008 and 2010 at 7.2 while the average rainfall of 12.86. Precipitation that falls on the forest area different from the area awakened. Forest is one factor that plays an important role in the water cycle, namely precipitation returns to the air either an interception evaporation or transpiration. In addition to the forest of water that reached the land covered

by trees next rain water will be: Direct evaporated and reverted to the atmosphere, Interception

(restrained by a canopy which would then be evaporated into the atmosphere), Up to the ground either through droplets leaves or twigs (troughfall) and flows to ground through the trunk stream.

Perceptions and attitudes PFWR -an asset both by society and government. -Of the 36 -respondents who have a positive perception of the people interviewed (64.17%) in the management of local community-based and only a small portion neutral / not responding (10:56%) and negatively perceptions (25.27%). -Perceptions -respondents positively by 64.17% to local community-based management. This is due to the location of protected forests are located around residential communities and local entrants. Owners of customary rights protected forests damaged realized suppose landslides, it will cause damage to land, forests and the environment for the local community and surrounding areas. During this PFWR enormous benefits as a kitchen / living where they can be fished both agricultural crops and fruits. Thus the people consciously maintain and protect and to participate if the government held GNRHL / reforestation.

Only 10.56% of respondents expressed a neutral / not comment on local community-based management. The reason they do not provide an answer, may not understand the question in detail, education levels are low and do not care about PFWR. While the negative perceptions as much as 25.27% of the local community-based management. The group that disagrees especially those headmen, chiefs and educated society. They argued that there should be a protected forest land compensation to owners of customary rights / chiefs. Chiefs / customary rights owners feel marginalized by the presence of migrants from Java, Sulawesi, Ambon, Sumatra and Borneo.

Rules or regulations in this area PFWR for almost nothing, whereas in the letter of appointment by the governor of West Irian Jaya has made an announcement that it was announced that since the announcement was published, it should not be disturbed forest / prohibited from illegal logging or plantations and so on another. This –announcement may be only temporary, given the designation PFWR just not the determination by the Minister of Forestry. The announcement according community

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just the wind, this proved the existence of protected forest encroachment that began in the fall of 1998. Since -Sueharto president 1998 years -until here protected forest degradation and deforestation from the 300.60 ha become 88 ha.

Results of interviews with people, wanting not compensation customary rights to PFWR. The desire is not impossible given the extensive PFWR initially only the remaining 88 300.65 ha-ha, so that 212.65 hectares has been bought and sold by chiefs / owners of customary rights. Most masyarat / respondent refused if customary rights released voluntarily. At the beginning of the appointment as PFWR by the Governor of West Irian Jaya Papua was signed by both owners of customary rights / chieftain namely Jakop Mandacan and Jakonias Mandacan, they only finished SR/elementary school. Elementary school for their offspring it is still low and still traditional patterns of thinking, so suppose there is now a designation and determination PFWR there should be compensation. Therefore protected forests not only belong to the government but to all of society, including local communities and the owners of customary rights. Now onwards protected forests should be managed actively involve the community and do not give a compensation –customary rights. The public are invited to preserve, protect and maintain forests by planting forest trees and fruits that result they learned to owners of customary rights and their descendants.

Alternative land use PFWR Appropriation of land is an effort in planning the use of land in an area

that includes the zoning for the specialization of certain functions, for example functions of settlements, commerce, industry, protected –areas–, conservation areas–, fields, farms, plantations–, airports etc. Plan of land use is strongly associated with the potential to use the land supporting so that no disasters such as floods and landslides–. Five important alternative land use in PFWR namely–:

- 191 1. Protected forest
- 192 a. The springs

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PFWR potential in the region include: springs-, land-, environmental services and flora and fauna-. Although the results of field studies obtained a total score of 130 should be a buffer zone-, but refers to the early establishment of protected forests as protected forest Rendani Wosi hydro - orologis by decree of the Governor of Irian Jaya Barat dated August 15, 1969 Number: 118 / GIB / 1969. As early history determination, Manokwari city hit by drought, while in the area there are four springs as -shown Table 2.

b. Ecotourism and Environmental Services

Environmental services is a natural product of the total area of protected forest as beautiful panorama, clear water, cool air, fresh and clean. In PFWR has potential environmental services / ecotourism such as waterfalls, ponds, springs, and caves. Customary rights owners and their families are invited to promote a clear and perceived by the entire community. The promotion involves: object tourist attraction, available facilities, accessibility and information other tourist objects adjacent to the location (Ngadiono, 2004).

a. Waterfall

The owner and his family were invited to manage the waterfall that starts from the planning, the use of up to scrutiny. Management falls under the authority of the tourism department—in Manokwari district. Currently there are only waterfall in the area Prafi which is located quite far, while in the city there is a waterfall of course there must be better promotion through written media, print, radio, television and the tourism bureaus.

b. Pond

Natural pools in the city are only found in PFWR. Currently the pool is only used by the local community to swim and wash clothes. There is an appeal and had no boxes for swimming and wash clothing in order to pay modest. However, if it is well managed with the involvement of the

customary communities -visitors / more and more tourists visit that will add to the welfare of the community and local government revenue.

218 c. Cave

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Caves— can be made ecotourism. Ecotourism is a form of tourism very closely with conservation principles. Thus ecotourism extremely precise and efficient in maintaining the integrity and authenticity of the ecosystem in the area pristine. Even with ecotourism nature conservation can be improved because of the pressure and the demands of nature lovers. If the cave and waterfall has been known and in demand, the local community will be busy to provide a parking area, a variety of food, crafts, a tour guide, traditional—and no less important visitors coming be charged. Because visitors will be interested in the care and services that are still natural. Thus the local community will be economic empowered and increased_(Ekawati et al.2011; Kitamura 2013) Similiarly, (Yeni I et al. 2007) increased income—, economic growth community sustainable.

- **2.Urban Forest** In accordance with Regulation Nu.47 of 1997 years -on the national spatial plan then
- 230 PFWR can be specified as a town forest with consideration:
- 1. In the region there PFWR residential areas, including: the village Ipingoisi, Kentestar and Soribo and
 - outside the area of the village such as: Tanah merah indah, Ajoi, Buton and Mako Brimob region.
- 233 2. In the protected forest area there are many multi-layered structure and stratified (Table 3). Dahlan (2004) –the city built the structure of the forest stand should be a multi-layered and stratified
- vertically or horizontally as well as natural forests.
- 3. The forest is located within the city / around town and just 5 km from the district capital and
- 237 provincial cities.
- 4. PFWR formed from a compact plant communities at a waterhole, shaped path or a combination of
- compact shape and form lines.

5. Type in PFWR plant is endemic, introduce and exotic types like: Pometia sp, Intsia sp, Octomeles sumatrana, Dixoxylum sp, Pimeliodendron, Pterygota sp, sp Elaeocarpus, Palaquium sp, Spatudera, Celtis sp, Evodia sp., Tectona grandis, Cananga sp, Albizia falcataria and Calyandra sp.

6. In addition to the forest plant species have been and continue to be developed -of fruits in accordance with the plan of the head of the Forest departement district Manokwari. Manokwari as a city of education and fruits will be realized if all elements of society to support and PFWR besides there forestry crops of fruit, so that future abundant fruits Manokwari.

Referring to the Regulation Nu. 63 of -2002 years urban forest -aims include improving and maintaining the microclimate and aesthetic value, absorb water, creating balance and harmony of the physical environment of the city and supporting biodiversity. It is possible once PFWR as urban forests, because Maenokwari as the capital of the province of West Papua, many people coming to Manokwari as well as from Java, Sulawesi, Kalimantan and even of Sumatra.

With PFWR maketh the urban forest, Manokwari climate becomes cooler, high carbon sequestration and air quality remains good. Manokwari society exodus to make forested land to be reduced, because the government and many people who build houses, offices, factories, businesses, markets etc. Thus still have a forest in the city will add to the beauty of the city of Manokwari, water catchment areas and biodiversity.

Starting -in 2002 until 2013 the city of Manokwari often flooded and the largest in 2012. The views emerging from the rainfall and the opening PFWR. Since the year 2013 until now flood-stricken areas on the wane, because of the strict prohibition of felling trees and building on PFWR. Protection Forest Wosi Rendani which has a total score of 130 and 210 m sea above level have a very high threat in case of rain. Moreover, if the forest is cut down and used as settlements, of course, there will be runoff, soil removal, and increased water discharge at 3 rivers in PFWR. For that to PFWR made

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Commented [K31]: if you merge endemic and introduced plants this list makes no sense.

Commented [K32]: most of them are not identified to species level, so how could they possibly be endemic unless you would have an endemic genus?

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urban forest, then that should be water flowing on the surface of the soil, the water will seep into the soil, the soil remains in place and the water discharge is relatively stable so that no flooding.

 3. Community Forest Forestry development paradigm has now changed from wood to ecosystemoriented outcomes that emphasize community-based forest management (Devi I.N. et all._2010;
Nughoho -2011). This approach has put the community to manage and maintain the existence of the
forest. Hansen (2011) that strengthening local communities rights is part of reform -forest management
policy. Similiarly, Larson (2010)_said that recognition of indigenous peoples may be implicated in
strengthen local community rights. Strong capacity (Anderson et al, 2013-; Kitamura et all.2013)_is one
of important indicators in achieving sustainable forest governance. -With accommodate community
activities in the forest, planting crops such as multi-use (MPTS), the better the local economy.
Community forest is state forest utilization primarily intended to deceive the local community through
the optimal use of forest resources, equitable and sustainable while maintaining the sustainability and
environmental functions of forests (Regulation No: P.37 /ministry of forestry-II / 2007). From the
above purposes allows PFWR be a community forest, given that there are many types of forestry
(endemic and exotic), fruits and medicinal plants Table 3.

According to Sinery et al._(2015), medicinal plants used by the local community as much as 20 types PFWR to treat 21 types of diseases. Diseases that can be treated include: sugar, ulcers, high blood pressure, pneumonia, malaria, warts, kidneys, low blood, rheumatism, gout, cancer, blurry eyes, itchy pig, an arrow wound, discard the dirty substance, diarrhea, issued Blood dead, spine, kidney stones, strengthen stamina and strengthen hip. Various types of plants such as Table 3, some have grown and others grow wildly. Since PFWR be designated protected areas, have been planted various types of stands introductions such as Tectona grandis, Cananga sp, Albizia falcataria and Calyandra sp etc. Horticultural cultivation, non-timber forest products and multi-purpose tree species -haves been and continues to be developed (Table 3). In 2012 the Department of Forestry Manokwari district provide

free fruit species grafting, which is expected to rapidly plant fruit, sweetness and quickly sold on the market.

Communities inhabiting in villages PFWR such as Ipingoisi, Kentestar and Soribo village and out area such as Tanah merah indah, Ajoi, Buton village and Makobrimob areas. This society can only take non-timber forest products such as fruits, flowers, rattan, bamboo, honey, sap and fungi. With only take non-timber forest products of forest preservation and the environment will be maintained.

4. Regions of buffer The results of field studies PFWR obtained a total score of 130 should be as a buffer zone. Buffer zone acts as a buffer to reduce the population pressure on the area around the village areas or areas of high interact with integrating conservation and –economic interests of the surrounding community.

The total score of 130 (Table 4) then actually PFWR not as protected forest but the forest that serves as a buffer / limited production forest. The function of the buffer zone can be realized optimally with the management of environmental services, and the economic value of land conservation community, through the rehabilitation of degraded land in a system of community forestry, community forests or agricultural forestry. Model of development and management based on ecological, economic and social culture around the area of the buffer zone in the form of the division into zones. Forests sustainable its life support (buffer) then its role becomes critical when the environment changes starting from shifting and friction between species in the forest community (Sinery, et all. 2015).

The buffer zones -very important role for the preservation of nature reserves and conservation areas. -As a buffer to reduce the population pressure on the area around the village areas or areas of high interaction by integrating conservation and economic interests of the surrounding community. PFWR buffer zone function can be optimally realized through the management of environmental services, and the economic value of land conservation community, through the rehabilitation of degraded land in the system of community forestry, community forests or agricultural forestry. Model

development and management based on ecological, economic and social culture around the area in the form of a buffer zone division into zones.

Zoning in PFWR later divided into three, namely-: green lane, interaction lanes and cultivation

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area. The composition of plant species that are developed in each track adapted to the distance from the boundary, zoning, and land so as not to impact on the region. Development of food crops, vegetables, fruits, medicines and timber in agricultural forestry systems have economic value and ecologically integrated manner to preserve the genetic resources of plants and wildlife and the conservation of land and water. -Cahyana GH (2011) show forests very important role in human and animal life that -can be understood from the hydrological cycle. The essence is to guard the equilibrium -human life -forests and other living things are also influenced by the creature abiotic. Functions that can be achieved if the forest is maintained continuity. Another fact, according to The World Bank, 900 million people in 100 countries face the problem of desertification (forest desertification) caused by complex interactions among physical factors, biological, political, social, cultural and economic factors with a loss of US \$ 42.3 billion per year. Allegedly, in 2025 later desertification will be felt by 1.8 billion people. Because since 1960 more than 1/5 of tropical forests disappear and the rate of loss of tropical forests in the 1970s amounted to 11.3 million ha/years increased to 15.4 million ha/years in the 1980. In Indonesia, according to the International Union for Natural Conservation (IUCN), the destruction of forests in Indonesia reached 2.4 million ha / year and now lived 70 million hectares, or only 50% of it. 5. Cultivation and settlements Regulation -nu. 24 of 1992 on Spatial planning stated that in general the use of land is divided into two, cultivated area and non-farming-, PFWR villages in the area are listed in Table 5. At the pace of population growth in the city of Manokwari impact on the emergence of new settlements

included in PFWR. This settlement originated the opening of a new road east Esau Sesa Forest

Preserve Wosi Rendani, because long road must pass through the airport Rendani. There are three

settlements in the region such PFWR: Soribo, Kentestar and Ipingoisi. 4 settlements and land ownership outside the region PFWR namely: Tanah merah indah, Ajoi village and Makobrimob areas as well as plots of land owned by developers such as: bank Arfindo, Lumintu, Irma Jaya and Suntari.

Surprisingly settlements and land ownership has been certified. Thus, it means the local government seemed to favor the shift PFWR be a settlement. By him that because of land ownership that have been certified so hard to be returned to forest conservation. Whereas change land use decreased land cover will be their implications to carbon dioxide emissions—climate change and biodiversity (Basyuni M.et all.2015; Prasetyo L B, 2013). Similiarly land use change from natural forest to agricultural are proved to have detrimental effect on ecosystem function of dung beetles especially dung burial activity (Shahabudin, 2011).

PFWR area has been used for farming, shifting cultivation and settlement. Types of crops grown include: jackfruit, olive, durian, mango, duku, bananas, serei, corn, chili, tomatoes, melinjo, breadfruit, sweet potato, cassava, banana, peanut, turmeric, ginger and others (table 3). PFWR to serve as the cultivation and settlement is the most bitter land use, given the problems of this land is sour reaction, high Al content so that it becomes toxic plants and cause fixation P, and low nutrient content. -If it PFWR changed into cultivation area necessary measures to reduce the acidity of soil liming, fertilizer to increase the content of nutrient elements.

According to Nusan S. et al. (2012) shortage of one nutrient elements will lead to growth and development are not normal, the impact on the decrease of production and quality results. Proper management by applying soil and water conservation technologies, such as terracing, alley cropping, making of mounds, -compost, agricultural forestry, circle of crops etc. According Asyerem, F et al (2012) Compost use other than as a nutrient for plants can also increase resistance to pathogens. Compost is also a good substrate for a number of microorganisms growth biological agents so that the application of compost into the soil can reduce plant pathogen attack. Settlement also includes offices

Commented [K34]: always use/add scientific names in international publications. Several of the names are not even English but Indonesian names that will provide no information to most international readers.

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are included in Protected Forest Area Wosi Rendani approximately 86 houses or buildings, with details as follows: Around the time of the Cold to the gas station as much as 38 home / building. About the location of the gas station to the river Rendani as much as 33 home / building. Rendani about new roads as much as 4 houses / buildings around the road Makobrimob as much as 11 home / building.

Residential areas and garden area - the new garden growing in line with the increase in population in the city of Manokwari. From the results of the inventory and identification of boundaries on the ground around a new path mostly residential community already has a certificate or proof of land ownership, this is incompatible with the function Protected Forest Wosi Rendani. To anticipate the development of settlement and clearing gardens by the public or by a person who is not responsible, so as not to enter the region need delineated, reconstruction coordinate and coordination between relevant agencies. Involve leaders - community leaders or heads - chieftain related directly with forest protected Wosi Rendani. In order for the future of protected forests remain sustainable, it is necessary to the determination of the area by the Ministry of Forestry and Agriculture, so that it gets stronger legal certainty and clear presence.

Besides PFWR as agricultural land, settlements are another problem that the loss of boundary markers. Number of boundary markers as many as 150 pieces are entirely composed of the outer limits of 11 pieces -and enclave boundaries as much as 32 pieces. Many were lost due to boundary markers land evictions and land clearing for human settlements in the location of new roads, the complex Makobrimob and land plots. This is due to the settlement and the opening of agricultural lands by communities around forest areas are presented in Table 6.

Clearing and shifting cultivation by burning Papuan society has become a habit in the open area of new land by way of clear-cutting and then burned. Burn shifting cultivation with potentially damaging forests and fields of research Ernawati (1996) on the Mansinam island intensity of deforestation and land gained by 7.47% (25.75 ha). Getting damaged due to forest lands that have been opened are left

alone without any effort to conserve the soil. Fallow land (break) for 3-10 years until the land to grow shrubs. The cropping pattern thus not only destroy the forest, but also has threatened Forest Preserve. Clearing of forests and uncontrolled land have caused damage to soil, water or air. Damage suffered on the ground where erosion occurs in the form of a setback properties such as chemical and physical soil nutrient losses, increasing the density and soil penetration resistance, decreasing soil infiltration capacity and ability to hold water. In 1991 there were 400,000 hectares of critical land caused by shifting cultivation (Department of Forestry, 2009)

Conclusion

The most important land use scenarios on PFWR row, including: 1. PFWR remain protected forests, although the total score of 130. This forest serves to protect the soil, water and the danger of flooding and landslides. In this area there are potential springs, caves and waterfalls that can be developed into eco-tourism and environmental services. 2. Forest city. With so many people migrating into more hot air, decreases air quality and environmental pollution, so that the urban forest environment is getting better and add water catchment areas. 3. Community forest. In the region there are plants PFWR forestry, agriculture and fruit, which society can only take flowers, fruits and seeds that they planted. 4. Regions buffer. Buffer zone acts as a buffer to reduce the population pressure on the area around the village areas or areas of high interact with integrating conservation and economic interests of the surrounding community. 5. Cultivation and settlements. There are three settlements in the region such PFWR: Soribo, Kentestar and Ipingoisi, 4 settlements and holdings outside the region PFWR like: village of Tanah merah indah, Ajoi, Buton, Makobrimob area as well as plots of land owned by developers such as: bank Arfindo, Lumintu, Irma Jaya and Suntari.

Suggestion

Local and central government immediately establish the definitive status of the PFWR so that management is more clear and focused.

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Table 1. Deforestation and degradation PFWR

Years	good(ha)	Damaged	Description
		(ha)	
1969	331,780		In the map results are not reflected boundaries
			Residential areas-, gardens etc.
1991	321,28	10,50	Based on the report on the activities of the minutes of the forest community garden
2003	255,04	76,74	Based on land cover maps overlaid with a map of the results of 2003 year
2008	88,19	243,59	Based on the results of bounds by the
			Department of Forestry orientation Manokwari
			District in 2008
2014	86,24	245,54	Based on field data obtained by the research

Source: MoF 2014

Table 2. Potential sources of water on PFWR

Elevation	Debit utilized	Debit	Debit utilized	Debit not
	PDAM	available	people (L/det)	utilized (L/det)
	(L/det)	(L/det)		
7	30	206	-	176
46	10	15	-	5
74	10	448	3	435
8	-	96	11	85
	50	765	14	701
	7 46 74	PDAM (L/det) 7 30 46 10 74 10 8 -	PDAM available (L/det) 7 30 206 46 10 15 74 10 448 8 - 96	PDAM (L/det) available (L/det) people (L/det) 7 30 206 - 46 10 15 - 74 10 448 3 8 - 96 11

Source: PDAM, 2013

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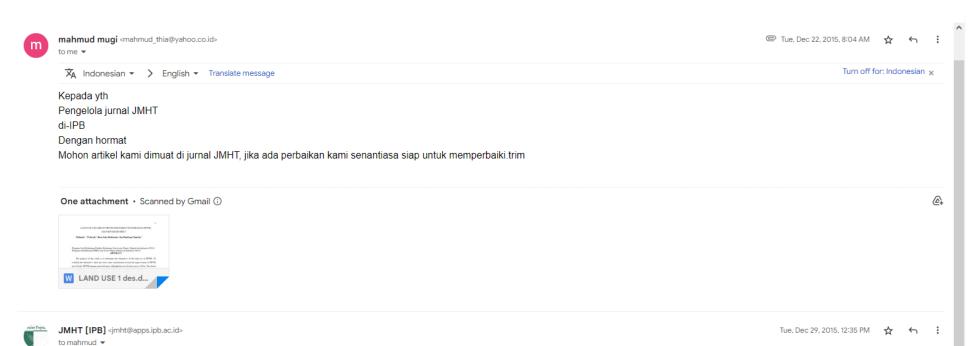
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Species introduce & exotic fruit trees introduce & exotic fruit fr								Commented IV201
Pometia sp. Initials sp. Octomeles Sackfruit Imperota cylindrica, Piper susmatrana, Disvasyulm sp, Durian, Sp. Pisidum guajawa, Pimeliodendron sp, Dukti Pimeliodendron sp, Pimeli	Specsies			medicir	nal plants		 	Commented [K39]: are you sure that you species or just native species???
Pometia sp. Intsia sp. Octomeles Jackfruit, Imperato cylindrica, Piper authority Susmarrana, Olive authority Susmarrana, Susmarrana, Olive authority Susmarrana, Susmarr		introduce & exotic	Fruit trees	medien	iai piaino		 	
Susmatrana, Olive, Dixxoylum sp, Durlan, Pimeliodendron sp, Pombledendron sp, Eleocarpus sp, Delku, Petrygota sp, Pollaquium sp, Serei, Polaquium sp, Corm, Spatudera sp, Chili, -Celtis sp, Foldonium sp, Serei, Fotodis sp, Melinjo, Tectona grandis, Cananga sp, Albizio folcotario-dea Cassava, Colyandro sp Banana, Eleocarpus sp, Sweet potato, Albizio folcotario-dea Cassava, Colyandro sp Banana, Eleocarpus sp, Sweet potato, Albizio folcotario-dea Cassava, Septica, Ficus nodoso, Luncasia amora, Alstonia scholaris, Endospermum moluccanum Diverses: Sinery, et al. 2015 Commented [K41]: use scientific namulation in the forest Protected		Intsia sp,Octomeles	Jackfruit,	-Impera	ta cylindrica,	Piper		
Di-xoxylum sp, Pimellodendron sp, Eleocorpus sp, Bananas, Eleocorpus sp, Serei, Photos scandes, Fhotos scandes, Photos scandes, Photos scandes, Adenanthera pavonia, Photos scandes, Adenanthera pavonia, Morinda citrifolia, Oricchiderubescens, Catlyandro sp, Albizia folcataria-den Cassava, Calyandro sp Banana, Septica, Ficus septica, Ficus nodoso, Lunasia amara, Alstonia scholaris, Endospermum moluccanum			Olive,					
Pterygota sp, Elaeocarpus sp, Bananas, Feticulatus, Archagelesia flava, dianela ensifolia, Fhotos scandes, Spatudera sp, Corn., Adenathera pavonia, Molinja, Breadfruit, Cananga sp, Evodia sp, Tectona grandis, Breadfruit, Cananga sp, Albizia falcataria-dian Cassava, Sweet potato, Albizia falcataria-dian Cassava, Evolias sp, Albizia falcataria-dian Cassava, Calyandra sp Banana, Septica, Ficus nodosa, Lunosia amara, Alstonia scholaris, Endospermum moluccanum Commented [K41]: use scientific namoluccanum Commented [K42]: many of them are even invasive, so they should also be list column. The same is true for the fruit trouble almothesis of the same is true for th		Di-xoxylum sp,		sp,Psidi	um guajawa,			species level you carriot know if it is ende
Elaeocorpus sp, Elaeocorpus sp, Poloquium sp, Serei, Flotos scandes, Poloquium sp, Corn. Chili, Adenather pavonia, Celtis sp, Evodia sp., Evodia sp., Evodia sp., Evodia sp., Evodia sp., Evodia sp., Melinjo, Tomatoes, Albizia folcatorio-den Cassava, Incorapus fadopter, Flus Banana, Lunasia amora, Alstonia scholaris, Endospermum moluccanum Calyandra sp		Pimeliodendron sp,		Glocidiu	ım sp, Philani	us		
Serei, Poloquium sp, Poloquium sp, Spatudera sp, Corn, Adenanthera pavonia, Adenanthera pavonia, Adenanthera pavonia, Adenanthera pavonia, Molinjo, Oriochiderubescens, Callaphilum inophilum, Cananga sp, Albizia falcataria-dea Cassava, Sweet potato, Albizia falcataria-dea Cassava, Septica, Ficus nodosa, Lunasia amara, Alstonia scholaris, Endospermum moluccanum		Pterygota sp,		reticula	tus, Archagel	esia		
Soptuders sp, Spatuders sp, Celtis sp, Evodia sp, Tectona grandis, Cananga sp, Ablisia folicatoria-dan Calssava, Ablisia folicatoria-dan Calssava, Calyandra sp Banana, Calssava, Banana, Calyandra sp Banana, Calssava, Banana, Calssava, Banana, Calssava, Banana, Septica, Ficus nodoso, Lunasia amero, Alstonia scholaris, Endospermum moluccanum Commented [K41]: use scientific nar even invasive, so they should also be list column. The same is true for the fruit tri Commented [K43]: The scoring syste anywhere in the text so that the table al much sense. Commented [K43]: The scoring syste anywhere in the text so that the table al much sense. Commented [K44]: with the table al much sense. Commented [K44]: Might be nicer to map showing the protected are and the Commented [K44]: Might be nicer to map showing the protected are and the Commented [K44]: Might be nicer to map showing the protected are and the Commented [K44]: Might be nicer to map showing the protected are and the Commented [K44]: Might be nicer to map showing the protected are and the Commented [K44]: Might be nicer to map showing the protected are and the Commented [K44]: Might be nicer to map showing the protected are and the Commented [K44]: Might be nicer to map showing the protected are and the Commented [K42]: Might be nicer to map showing the protected are and the Commented [K42]: Might be nicer to map showing the protected are and the Commented [K42]: Might be nicer to map showing the protected are and the Commented [K42]: Might be nicer to map showing the protected are and the Commented [K42]: Might be nicer to map showing the protected are and the Commented [K42]: Might be nicer to map showing the pro		Elaeocarpus sp,		flava, d	ianela ensifol	ia,		
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Location	Between pal Nu.	mi <u>s</u> sing	good	Description
	s/d Nu.			
The new road Wosi Rendani	HL/26 s/d HL/54 and HL/55 s/d HL/58	29	20	Land eviction
Makobrimob	HL/59 s/d HL/62	-	4	Land eviction
Kali Dingin Western Forest	HL/63 s/d HL/84	4	22	Eviction Ground
Protected	HL/1 s/d HL/25	21	25	Revoked
Arround Rendani	HL/85 s/d HL/119	-	35	
Total		54	96	

Source: Forestry Departement, 2014

Commented [K45]: unclear what information is provided in this table. If it is about forest boundaries better replace it by a map.

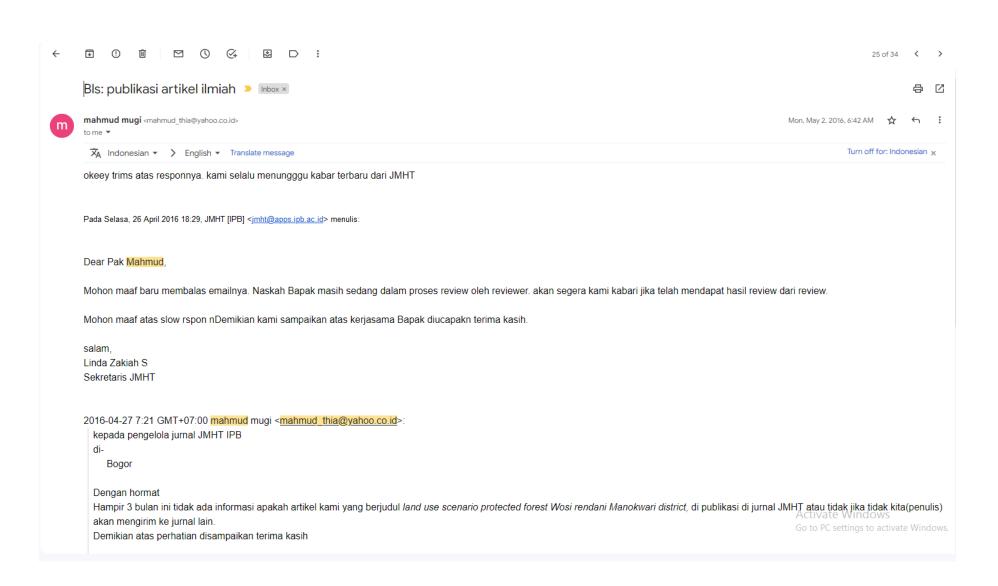


Dear Bpk Mahmud

Mohon maaf baru membalas email Bapak. Terima kasih atas perbaikannya naskah Bapak sedang diperiksa di meja editor. Selain itu kami meminta rekomendasi reviewer 3 dari dalam negeri dan 3 dari luar negeri.

Demikian kami sampaikan atas kerjasama Bapak diucapkan terima kasih.

Salam, Linda Zakiah Sekretaris JMHT

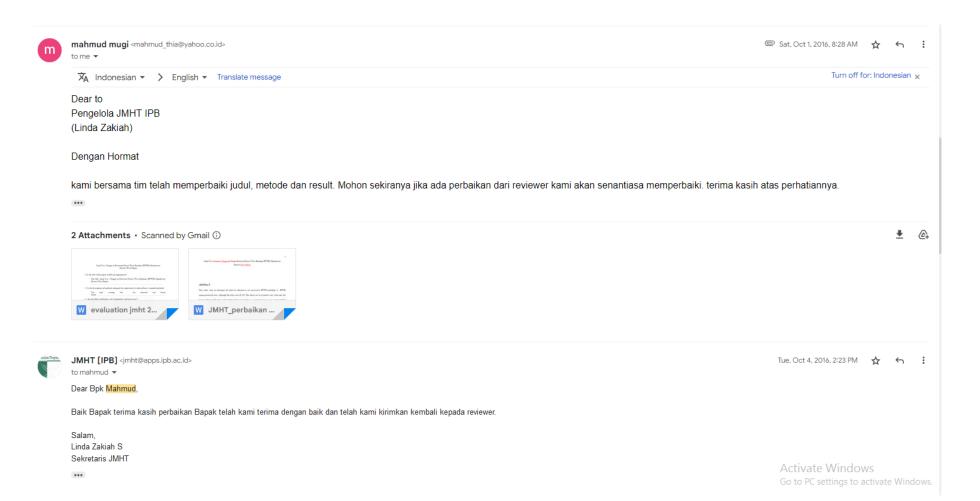




♣

tel.: +62-822-9936-4486 fax: +62-251-8621244







♣ ②

Dear Bpk Mahmud,

Berikut terlampir hasil review dari reviewer 2, Mohon perbaikan dapat digabungkan dengan hasil review 1 yang telah bapak lakukan koreksian pada tanggal 1 Oktober.

Demikian kami sampaikan atas kerjasama Bapak diucapakn terima kasih.

Salam. Linda Zakiah S Sekretaris JMHT

3 Attachments • Scanned by Gmail ①



JMHT [IPB] <jmht@apps.ipb.ac.id>

JMHT_Land_use_I...

to mahmud 🔻

Dear Pak Mahmud,

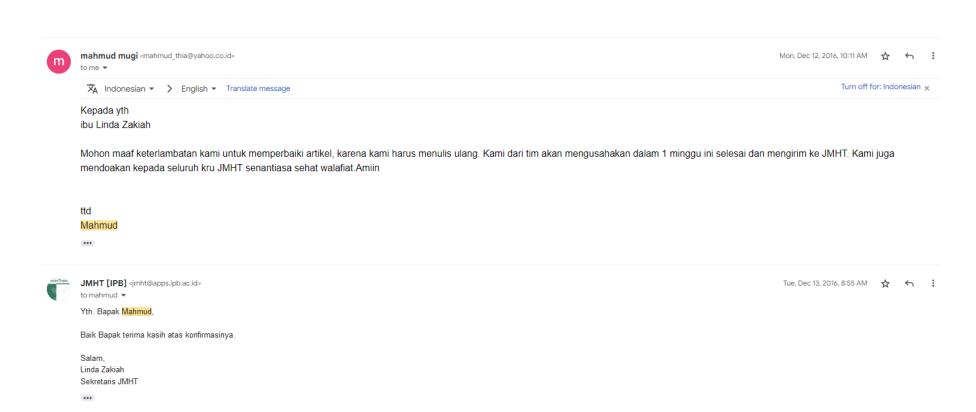
Apakabar? semoga sehat selalu. Kami Ingin menanyakan, apakah perbaikan Bapak telah Bapak terima, dan perbaiki kembali? Kami menunggu perbaikan Bapak yang telah bapak perbaiki yang telah disatukan dengan perbaikan yang sebelumya.

Demikian kami sampaikan atas kerjasama Bapak kami ucapkan terima kasih.

Salam. Linda Zakiah S Sekretaris JMHT

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Dear Bapak Mahmud,

Terima kasih atas perbakan artikelnya akan kami tindaklanjuti.

Demikian kami ucapkan atas kerjasama Bapak diucapakn terima kasih.

Salam, Linda Zakiah S Sekretariat JMHT

JURNAL MANAJEMEN HUTAN TROPIKA

Department of Forest Manajemen, Faculty of Forestry, Bogor Agricultural University Academic Ring Road, Campus IPB Dramaga, PO Box 168, Bogor 16680

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