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[IJG] Submission Acknowledgement

1 message

Dr. Eko Haryono, M.Si. <e.haryono@ugm.ac.id> Mon, Jun 24, 2019 at 10:42 PM
To: Abdul Malik <abdulmalik@unm.ac.id>

Dear Abdul Malik,

Thank you for submitting the manuscript, "Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia" to Indonesian Journal of Geography. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Manuscript URL: https://jurnal.ugm.ac.id/ijg/author/submission/46989
Username: abdulmalik-geounm

If you have any questions, please contact me. Thank you for considering this journal for publishing your work.

Best wishes,
Dr. Eko Haryono, M.Si.
Indonesian Journal of Geography

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Abdul Malik <abdulmalik@unm.ac.id>

[IJG] Editor Decision: Revision Required

4 messages

Eko Haryono <e.haryono@ugm.ac.id> Mon, Mar 23, 2020 at 11:19 AM
To: Abdul Malik <abdulmalik@unm.ac.id>
Cc: Uca Sideng <ucasideng@unm.ac.id>, Jaelani Jaelani <jaylani193@gmail.com>

Dear Abdul Malik,

After considering reviewer's comments (see the attachment in your OJS account), We have reached the decision to Accept your manuscript with revision regarding your submission to Indonesian Journal of Geography, "Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia".

You should improve the quality of your manuscript by revising your manuscript according to the reviewer's comments. Please carefully respond to reviewer's comments when submitting the revision and please clearly indicate the changes that you made (or highlight them) to address the reviewer's comments. Or, you can directly reply to reviewer's comments in the comments box written by the reviewer. You should also use the template attached below. We will not process any revised paper without a specific response to each reviewer's comments
Please also cite at least one publication from IJG.

Once again, thank you for submitting your manuscript to the Indonesian Journal of Geography and I look forward to receiving your revision no later than 30 days from now. If you failed to meet the deadline, we may have to consider your paper rejected.

NB: Please use the follow the guideline in the attached template for your revision.

Best wishes,
Dr. Eko Haryono
Editor in Chief
Indonesian Journal of Geography,
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Abdul Malik <abdulmalik@unm.ac.id> Thu, Mar 26, 2020 at 12:18 PM
To: Eko Haryono <e.haryono@ugm.ac.id>
Cc: ucasideng@unm.ac.id, Jaylani193 <jaylani193@gmail.com>

Dear
Dr. Eko Haryono
Editor in Chief
Indonesian Journal of Geography,
Faculty of Geography, Universitas Gadjah Mada, Yogyakarta

Thanks for your email that inform about review results of the manuscript. We will revise the manuscript and give responses to each reviewer comments and suggestions, and send back the revision version no later than 30 days from your email dated.

Best regards,
Abdul Malik
Corresponding author

[Quoted text hidden]

--
Abdul Malik, Ph.D.

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Abdul Malik <abdulmalik@unm.ac.id> Sat, Apr 25, 2020 at 3:30 AM
To: Eko Haryono <e.haryono@ugm.ac.id>

Dear Editor of UGJ

We apologize for failing to meet the deadline for submitting the revision version of our manuscript after the review process due to something unintentional.
If possible we would like to ask extension time around one week from 23 April for revising and resubmitting the manuscript.

Best regards,
Abdul Malik
(Corresponding author)

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On Mon, Mar 23, 2020 at 11:19 AM Eko Haryono <e.haryono@ugm.ac.id> wrote:
[Quoted text hidden]

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Abdul Malik <abdulmalik@unm.ac.id> Thu, Apr 30, 2020 at 1:17 AM
To: Eko Haryono <e.haryono@ugm.ac.id>
Cc: ucasideng@unm.ac.id, Jaylani193 <jaylani193@gmail.com>

Dear Dr. Eko Haryono
Editor in Chief of IJG

We have re-submitted in our OJS account the revised of the manuscript with the title "Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia" in two files/versions (in "Track Changes" version for indicating the changes that we made and "Accept All Changes" version) and also a specific response to each comment and suggestions of the reviewer in a separate file.
We also cited one of the publications from IJG (Sukarna and Syahid, 2015, The Indonesian Journal of Geography, 47(2), 160-170) in the revised manuscript.

Best regards,
Abdul Malik
Corresponding author

On Mon, Mar 23, 2020 at 11:19 AM Eko Haryono <e.haryono@ugm.ac.id> wrote:
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#46989 Summary

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Country	Indonesia
Competing interests CI POLICY	–
Bio Statement	–

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Competing interests CI POLICY	–
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Country	Indonesia
Competing interests CI POLICY	–
Bio Statement	–

Title and Abstract

Title	Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia

Abstract

One of the essential services provided by mangroves is carbon sequestration, and therefore climate change mitigation. While previous assessments of mangrove carbon stocks and sequestrations have focused on the estuarine and deltaic mangrove setting, there are still limited studies carried out at small island mangroves. The study aims to assess mangrove biomass carbon stocks in Pannikiang, a small island in South Sulawesi, Indonesia, which occupies 91.64 ha of species-rich pristine mangrove forests. A field-based data collection survey was performed using a circular plot approach, while above-ground tree carbon (AGC) and below-ground root carbon (BGC) stocks were estimated using available species-specific allometric equations. The mean AGC and BGC were 5.34 ± 0.17 and 1.68 ± 0.04 Mg C ha^{-1}, respectively. *Bruguiera gymnorrhiza* mangrove species stored the greatest of carbon stocks, followed by *Scyphiphora hydrophyllacea*. Carbon stocks obtained from small island mangroves in this study were lower than stocks assessed from other mangrove locations across Indonesia and Southeast Asia. However, historical rates of deforestation in Pannikiang Island may generate emissions to approximately 82.17 Mg CO_2-eq. Findings from this study will be beneficial in providing baseline data for policy decision-making on climate change mitigation in the region, specifically for improved land use management via a low carbon development agenda.

Indexing

Academic discipline and sub-disciplines	—
Subject classification	—
Keywords	Mangrove; biomass carbon stock; climate change; South Sulawesi
Geo-spatial coverage	—
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the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia; Research Center of Universitas Negeri Makassar; Department of Geography Universitas Negeri Makassar; Government of South Sulawesi; Government of Barru Regency

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REVISION PROCEDURES

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Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia

Abdul Malik[1*], Uca Sideng[1], and Jaelani[2]

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Abstract One of the essential services provided by mangroves is carbon sequestration, and therefore, climate change mitigation. While previous assessments of mangrove carbon stocks and sequestrations was have focused on the estuarine and deltaic mangrove setting, there are still limited studies carried out at small island mangroves. Thes study aims to assess mangrove biomass carbon stocks at in Pannikiang, a small island in South Sulawesi, of Indonesia, which occupies 9091.36 64 ha of species-rich pristine mangrove forests. A field-based data collection survey was performed by using a circular plot approach, while above-ground tree carbon (AGC) and below-ground root carbon (BGC) stocks were estimated by using available species-specific allometric equations. The mean of AGC and BGC were were 5.34 ± 0.17 and 1.68 ± 0.04 Mg C ha^{-1}, respectively. *Bruguiera gymnorrhiza* mangrove species stored the greatest of carbon stocks, and followed by *Scyphiphora hydrophyllacea*. Carbon stocks obtained from small island mangroves in this study are were lower than stocks assessed from other mangrove locations across Indonesia and Southeast Asia countiesSoutheast Asia. However, historical rates of deforestation in Pannikiang Island may generate emissions to approximately 103 82.17 Mg CO_2-eq. Findings from this study will be useful beneficial to in providingde baseline data for policy decision-making in on climate change mitigation in the region, specifically for improved land use management via a low carbon development agenda.

Keywords: biomass carbon stock; climate change; South Sulawesi

1. Introduction

Climate change is amongst the most challenges challenging in this century, and the increase of greenhouse gasses (GHGs), mainly from carbon dioxide (CO_2) emissions to the

atmosphere, are the primary cause of climate change (Bindu et al., 2018). Climate change mitigation is not only an ~~conducted by~~ effort~~s~~ to reduce the level of CO_2 emissions but also ~~needs to be~~ balance~~d~~ with managing ecosystem services as carbon sinks (Wahyudi et al., 2017).

Mangroves are one of the most important coastal ecosystems in tropical and subtropical regions (Giri et al., 2011). They play an essential role in climate change mitigation by sequestrating~~sequestrate~~ CO_2 from the atmosphere via photosynthesis and carbon (C) from the ocean (Howard et al., 2014). Mangroves are among the most massive forest carbon sinks per hectare than other tropical forests (Donato et al., 2011; Alongi et al., 2014). However, they are particularly vulnerable to detach CO_2 and other GHGs to the atmospheres that could impact global climate change if disturbed, as a result of logging and conversion to other land use such as agricultural land and aquaculture ponds (Murdiyarso et al., 2015; Sukarna and Syahid, 2015). Both Friess (2016) and Murdiyarso et al. (2015) noted the continuous global demands for mangrove commodities and land-use change activities resulted in the increasing degradation and deforestation in recent decades.

Since 1980, almost half of the ~~world's~~ global ~~total~~ mangrove forest~~s~~ ~~has~~ have disappeared (FAO, 2007), and Southeast Asia was the highest loser region (Richards and Friess, 2016). The loss of mangroves has resulted in carbon emissions into the atmosphere of about 0.08-0.48 Pg CO_2 yr^{-1} or 10% of the total global CO_2 emissions of the world (Donato et al., 2011; Murdiyarso et al., 2015). In particular, Indonesia, ~~with~~ which has the most significant percentage of mangrove~~s~~ in the world (22%), has lost about 40% of its mangroves (FAO, 2007) and resulting in a 20% carbon emissions increase due to land-use change (Murdiyarso et al., 2015).

The coastal area of South Sulawesi ~~province~~ is an important area for mangrove blue carbon storage in Indonesia (Cameron et al., 2019; Malik et al., 2020). Mangroves are found in the coastal area of Makassar city and regencies of Maros, Pangkep, Barru, Pinrang, East Luwu, Luwu, Bone, Sinjai, Takalar, Jeneponto, Bantaeng, and Bulukumba (Bakosurtanal, 2009). In the 1950s, South Sulawesi mangrove~~-~~ covered ~~an~~ area of approximately 100,000 hectares (Giesen et al., 1991), which decreased ~~approximately~~ around 89.6% to 10,412 hectares by 2017 (Susanto et al., 2018; Rahadian et al., 2019). The main driver of mangrove

deforestation is ~~the~~ conversion ~~of forest~~ to aquaculture pond~~s~~ (Malik et al., 2017; 2020; ~~Suharti et al., 2016~~Jalil et al., 2020), with annual deforestation rates between one and five percent ~~1-5%~~ during ~~the period~~ 1979 - 2012 (Malik et al., 2017). If ~~the~~ current trends continue, local mangroves could be lost in the next 20-150 years (Malik et al., 2017), and the carbon stocks stored in these areas will become a source of significant carbon emissions.

While ~~the majority of~~most previous mangrove carbon studies focused on the estuarine and deltaic mangrove setting, there is still a lack of studies conducted at small island mangroves. Pannikiang Island is one of the small island mangrove hotspots in South Sulawesi. Mangroves occupied about ~~almost 100% (90~~91.~~36~~ 64 ha~~)~~ of the total area of the island (~~94~~96.~~68~~ 88 ha) in 2018. However, mangroves have disappeared by ~~four hectares~~3.19 ha since ~~1998~~ 1997 due to conversion into aquaculture ponds and settlements (~~Qamal~~Jaelani et al., ~~2019~~2021).

Although the historical rate of mangrove deforestation has occurred on a small scale during the period ~~1998~~1997-2018, it is critical to investigate the current carbon stock and carbon emissions from the mangrove deforested on this island. Therefore, this study's~~e~~ objectives ~~of this study~~ are to assess spatial variation by comparing carbon stocks between Pannikiang Island study sites and are to estimate carbon emissions generated by deforestation in this region between ~~1998~~ 1997 and 2018. Our findings contribute to providing baseline data for policy decision-making in climate change mitigation and land use management.

2. Methods

Study Area

The research was carried out in the mangrove area of Pannikiang Island, Barru Regency. This island is located within the latitude of 4°20'16.80" - 4°21'50.63" and longitude of 119°35'28.38" - 119°36'18.66" (Figure 1), about 108 km from the capital of South Sulawesi, Makassar City, and 15 km from the center of Barru Regency.

Pannikiang island was selected ~~because this island is~~as ~~considering~~ considered as one of the potential carbon sequestration projects based on the extent of the mangrove cover area. The ~~Mangrove~~ mangrove area ~~was~~ is dominated by *Rhizophora stylosa* (Suwardi et al., 2014)

and habitat for many faunae, mainly for thousands of bats (Dinas Pariwisata Kabupaten Barru, 2017). About 55 households occupy this island, and most of the head households work~~ing~~ as fishermen.


Study Area
Pannikiang Island
N
Plot 2
Plot 1
Plot 3
Plot 4
Plot 5
Plot 6
Plot 8
Plot 7
Google Earth
Image © 2019 TerraMetrics
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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1 km

97

Figure 1. Pannikiang Island, Barru Regency, South Sulawesi, and plot locations

Data Collection

Data on biomass carbon stocks were collected in April 2019. We implemented a circular plot approach by ~~adopted~~ adopting a sampling protocol developed by Kauffman and Donato (2012) to measure above-ground tree biomass (AGB) and below-ground root

biomass (BGB) stocks at the eight plots selected (Figure 1). For each plot, we established five circular subplots with a radius of 7 m and 25 m distance to each subplot center (Figure 2) using a measuring tape and . We marked the position by using the Global Positioning System/GPS. In additionW, we also identified the species name and recorded the number of individuals of species of all mangrove trees using a tally counter. Finally, wWe measured stem diameter at breast height (DBH) 1.3 m above the ground or 30 cm above the highest prop root for *Rhizophora* sp. using a measuring tape and tree heights using a clinometer (Malik et al., 20152019; 2020).

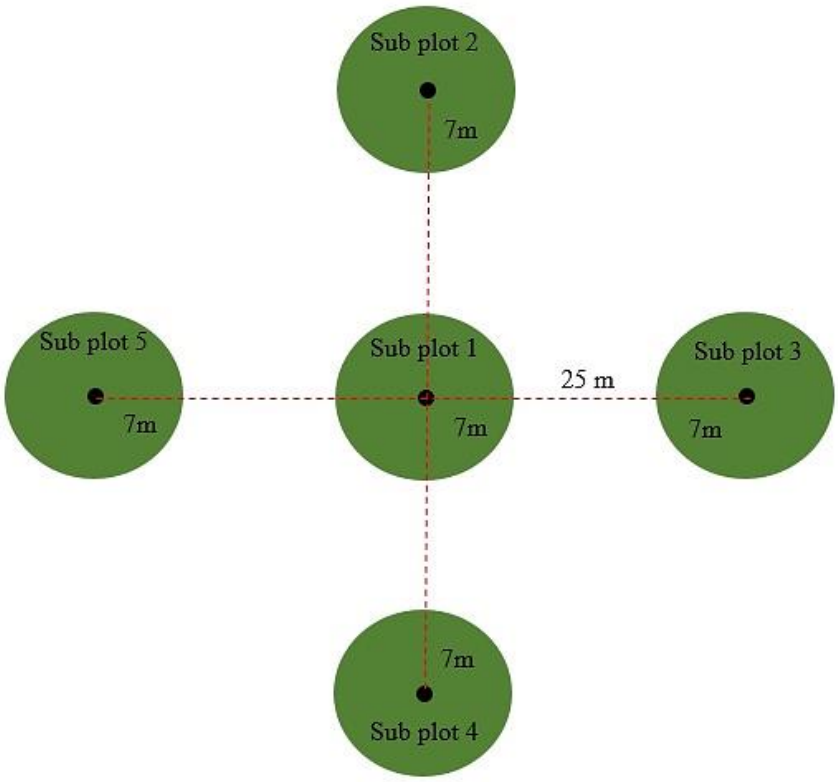


Figure 2. Plot layout for biomass carbon stock assessment (adopted from Kauffman and Donato, 2012).

Data Analysis

The sSpecies density, individual (ind.) tree basal area,, and the total of tree basal area were calculated using by equations 1 - 3:

$$D = \frac{ni}{A} \quad (1); \quad ba_i = (\frac{1}{2}DBH)^2\pi \quad (2); \quad BA = \Sigma\, ba_i \quad (3)$$

where:

D: density of species *i* (individualind./ m^{2-2}). ba_i: individual ind. tree basal area (m^2 ha^{-1}). BA: total tree basal area per hectare (m^2 ha^{-1}). ni: number of standing species *i*. A: total area of the sample subplots per plot (769.3 m^2). DBH: diameter at breast height (cm).

To calculate the AGB and BGB stocks of mangrove in this study, we used allometric equations 4 and 5 that were developed by Komiyama et al. (2005):

$$AGB = 0.251*\rho*DBH^{2.46} \quad (4)$$

$$BGB = 0.199*\rho^{0.899}*DBH^{2.22} \quad (5)$$

where, AGB and BGB: above- and below-ground biomass on mangrove tree and root (kg). ρ: species-specific wood density (see Table 1).

Table 1. Wood density of mangroves

No	Species	Wood density (g cm^{-3})
1	*Bruguiera cylindrica*	0.72
2	*Bruguiera gymnorrhiza (Bg)*	0.81
3	*Ceriops decandra*	0.87
4	*Ceriops tagal*	0.85
5	*Hibiscuse tiliaceocus*	0.57
6	*Rhizophora apiculata*	0.87
7	*Rhizophora stylosa*	0.84
8	*Rhizophora mucronata*	0.83
9	*Sonneratia alba*	0.47
10	*Scyphiphora hydrophyllacea*	0.69
11	*Xylocarpus granatum*	0.61
12	*Xylocarpus mollucensis*	0.65

Source: Kauffman and Donato (2012); Howard et al. (2014).

Furthermore, to estimate the Above-ground tree carbon (AGC) and Below-ground root carbon (BGC) stocks, we used equations 6 and 7 (Kauffman and Donato, 2012; Howard et al., 2014):

$$AGC = AGB \times 0.48 \quad (6)$$

BGC = BGB × 0.39 (7)

where, AGC tree and BGC root: above- and below-ground carbon on mangrove tree and root (kg C m^2). 0.48 and 0.39: carbon conversion factor for AGB and BGB.

Moreover, to calculate the loss of AGC and BGC stocks, we multiplied the mean value of AGC and BGC stocks by the historical rate of mangrove deforestation during the period 19981997-2018 (four 3.19 ha) as reported byectares, QamalJaelani et al., 2019(2021), while to calculate carbon emissions, we multiplied the loss value of AGC and BGC stocks by the ratio of molecular weights between carbon dioxide (44) and carbon (12) (Kauffman and Donato, 2012).

3. Results and Discussion

Species Composition composition of mangrove

A total of mangrove tree (392 trees) was identified in this study. Twelve mangrove species were recorded include *Bruguiera cylindrical* (Bc), *Bruguiera gymnorrhiza* (Bg), *Ceriops decandra* (Cd), *Ceriops tagal* (Ct), *Hibiscuse tiliaceocus* (Ht), *Rhizophora apiculate* (Ra), *Rhizophora mucronata* (Rm), *Rhizophora stylosa* (Rs), *Sonneratia alba* (Sa), *Scyphiphora hydrophyllacea* (Sh), *Xylocarpus granatum* (Xg), and *Xylocarpus mollucensis* (Xm).

The number of mangrove species in this study area was higher than in the similar areas in of South Sulawesi, such in as in Takalar Regency (10 species) (Malik et al., 2015) and Pangkep Regency (11 species) (Jalil et al. 2020), but lower than in Sinjai Regency (15 species) as reported by Suharti et al. (2016).

Rs was the dominating species (162 trees) and found in all plots, and followed by *Bg* (70 trees). Malik et al. (2015) reported that the dominance of *Rhizophora* sp. in South Sulawesi is similar to other areas in Indonesia and Southeast Asia, such as in Segara Anakan Lagoon of in Central Java and, Matang in Malaysia, and the Indian Sundarban Delta. Duke et al. (1998) stated the dominance of *Rhizophora* sp. in Indonesia and other Southeast Asia countries is influenced by physical, environmental, and climate factors, such as soil characteristics, moderately high and well good rainfall distributioned, and the suitable temperature range that suitable for the species growths.

~~The p~~Plot 1 was registered as the ~~most~~ largest number of the tree (97 trees)~~. , resulted in t~~The mean value of the tree density ~~of this plot~~ (0.03 ± 0.012 ind. m^{-2}) is higher compared to other plots. The mean value of tree DBH and height were 11.05 ± 1.54 cm and 7.23 ± 0.74 m, respectively, whereas the mean stand basal area was 2.27 ± 0.55 m^2 ha^{-1}. Although *Rs* was dominating ~~at~~ in all plots, *Bg* and *Sh* have higher tree DBH than other species.

Biomass carbon stocks of mangrove

The mean concentration of AGC and BGC stocks at eight plots was 5.34 ± 0.17 Mg C ha^{-1} and 1.68 ± 0.04 Mg C ha^{-1}, respectively. The ~~largest~~ greatest ~~value of~~ AGC and BGC stocks ~~was~~ were found at plot 8 (23.60 ± 1.42 Mg C ha^{-1} and 6.86 ± 0.37 Mg C ha^{-1}), whereas the lowest figure was at plot 1 (0.21 ± 0.02 Mg C ha^{-1} and 0.09 ± 0.01 Mg C ha^{-1}) (Figure 3).

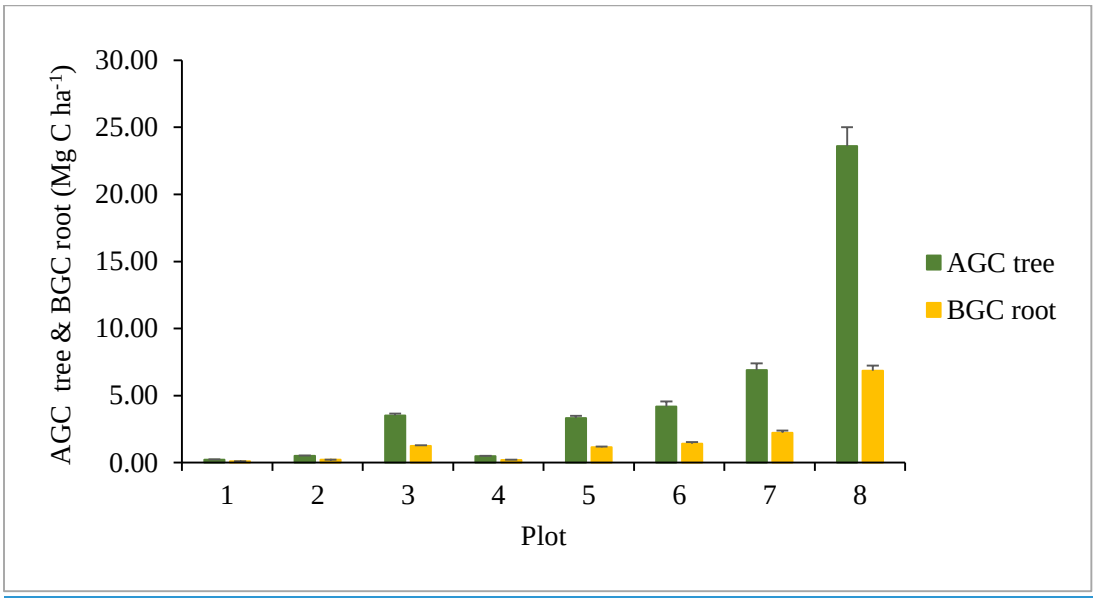
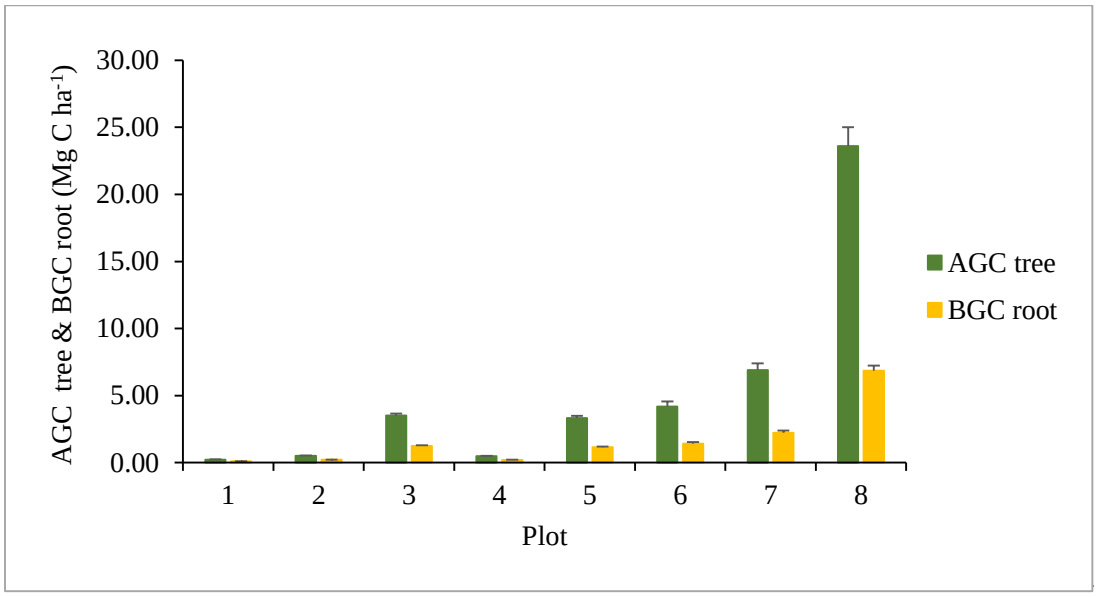


Figure 3. AGC and BGC stocks for each plot include the standard error of the mean

Considering the total area of mangroves (91.64 ha) in 2018 ~~(90.36 ha) as reported by (Qamal~~ Jaelani et al., ~~(2019~~2021), the total of AGC and BGC stocks were ~~482~~489.3~~52~~ Mg C and ~~151~~153.~~80~~ 95 Mg C~~,~~ respectively. However, the mean value of AGC and BGC stocks were much lower compared to other places in Indonesia, such as in Bunaken, North Sulawesi (69.2 Mg C ha^{-1} and 14.9 Mg C ha^{-1}), Kubu Raya, West Kalimantan (134.8 Mg C ha^{-1} and 14.3 Mg C ha^{-1}), Sembilang, South Sumatra (300.5 Mg C ha^{-1} and 27.2 Mg C ha^{-1}), and

Timika, Papua (323.6 Mg C ha^{-1} and 43.6 Mg C ha^{-1}) as reported by Murdiyarso et al. (2015), and also to other places in Southeast Asia ~~countries~~, such as in Palawan, Philippine 263.8 Mg C ha^{-1} and 92.3 Mg C ha^{-1} as reported by Abino et al. (2014), and in Mekong Delta, Vietnam 61.4 Mg C ha^{-1} and 8.7 Mg C ha^{-1} as ~~reported~~stated by Nam et al. (2016). Low AGC and BGC stocks are likely due to the smaller size ~~of~~ tree diameter (most of the tree diameter below 15 cm) compared to those places. Besides, this may be influenced by the high salinity that~~, which is~~ characteristic of the waters of small islands compared to the mainland estuary system. Therefore, it can affect mangrove growth.

Although *Rs* is the dominant species in this area, *Bg* represented the greatest AGC and BGC stocks (16.07 ± 1.64 Mg C ha^{-1} and 4.54 ± 0.43 Mg C ha^{-1}), followed by *Sh* (6.18 ± 0.71 Mg C ha^{-1} and 1.90 ± 0.20 Mg C ha^{-1}) (Figure 4). It is influenced by the larger tree diameter of this species compared to the other species.



~~Figure 3. AGC and BGC stocks for each plot include the standard error of the mean~~

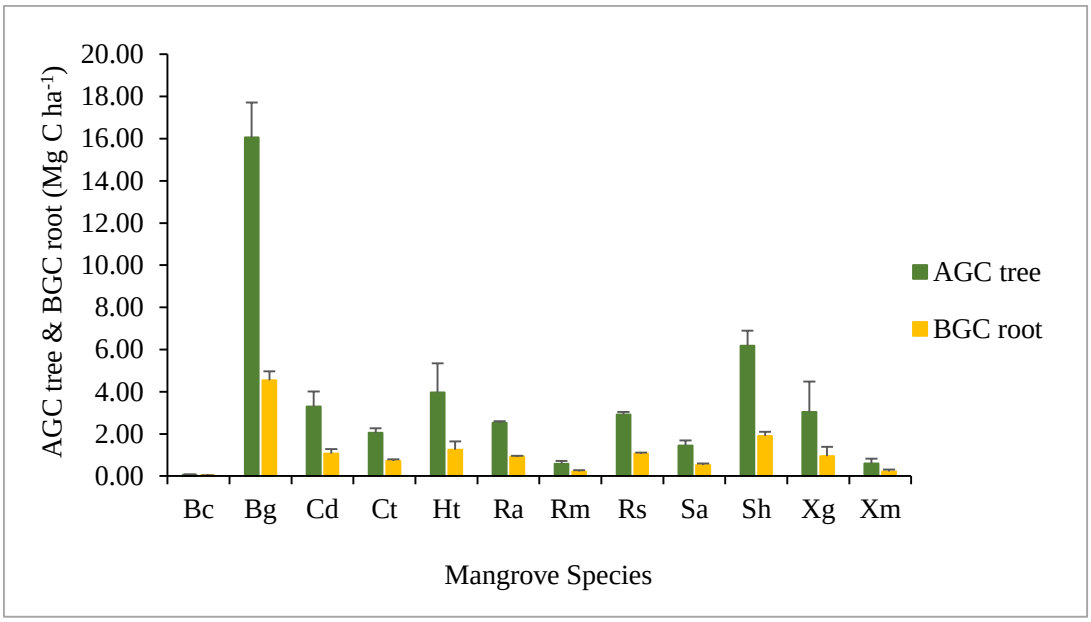
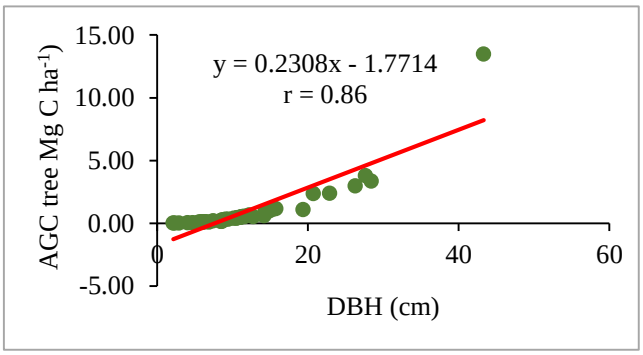


Figure 4. AGC and BGC stocks of mangrove species include the standard error of the mean.

~~Although *Rs* is dominance species in this area, *Bg* represented the greatest AGC and BGC stocks (16.07 ± 1.64 Mg C ha^{-1} and 4.54 ± 0.43 Mg C ha^{-1}), followed by *Sh* (6.18 ± 0.71 Mg C ha^{-1} and 1.90 ± 0.20 Mg C ha^{-1}) (Figure 4). This is influenced by the larger tree diameter of this species compared to the other species.~~

The relationship between DBH and above-below ground carbon stocks is presented in Figure 5. The increased value of tree DBH influenced the trend concentration of AGC and BGC stocks. Plotted in linear regression showed that the correlation coefficient (r) between DBH and AGC and BGC stocks were 0.86 and 0.89, respectively. This finding confirms a study from Alavaisha and Mangora (2016) that noted DBH mangrove trees' ~~the~~ significant effect ~~value of mangrove tree DBH has a significant effect~~ on the AGC stock concentration ~~of AGC stock~~. The value of BGC stock is positively correlated with the tree diameter. Hence, if the tree diameter is large, the BGC stock is large as well (Perera and Amarasinghe, 2014).



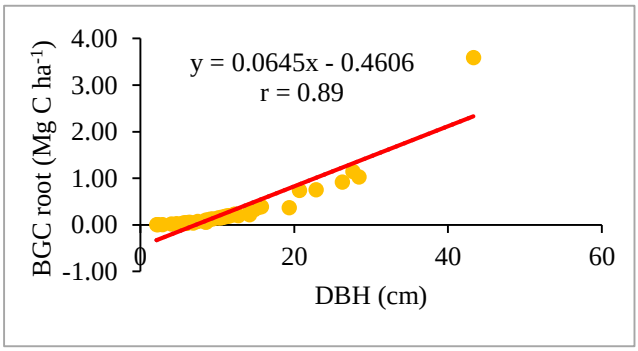


Figure 5. Relationship between DBH and AGC~~ and~~ BGC stocks

Furthermore, considering the conversion of mangrove areas to aquaculture ponds and settlements that reach ~~four hectares~~3.19 ha during the period ~~1998~~ 1997 – 2018 (~~Qamal~~Jaelani et al., ~~2019~~2021), the loss of AGC and BGC stocks ~~were~~ was ~~21.36~~17.03 Mg C and ~~6~~5.~~72~~ 36 Mg C, respectively, or it causes the carbon emissions of ~~103~~ 82.17 Mg CO_2-eq or ~~5.15~~3.91 Mg CO_2-eq per year into the atmosphere. ~~This~~ It suggests that if deforestation is halted and mangrove is restored, historical emissions from the past ~~20~~ 21 years can be effectively offset over the same period (~~5~~4.76% each year over ~~20~~ 21 years).

4. Conclusion

This study has demonstrated the biomass carbon stocks in Pannikiang Island, Barru Regency, South Sulawesi, Indonesia. The mean value of AGC and BGC stocks is 5.34 ± 0.17 Mg C ha^{-1} and 1.68 ± 0.04 Mg C ha^{-1}, respectively. Although *Rs* is the ~~dominance~~ dominant species, *Bruguiera gymnorrhiza* was the highest AGC and BGC stocks (16.07 ± 1.64 Mg C ha^{-1} and 4.54 ± 0.43 Mg C ha^{-1}), followed by *Scyphiphora hydrophyllacea* (6.18 ± 0.71 Mg C ha^{-1} and 1.90 ± 0.20 Mg C ha^{-1}). Tree DBH has a significant effect on the value of the AGC and BGC stocks. The mean value of AGC and BGC stocks is much lower than ~~in~~ other places in Indonesia and Southeast Asia ~~counties~~ due to the lower ~~in~~ tree diameter. However, ~~the~~ mangrove clearing ~~of mangroves~~ for different land uses ~~has~~ has resulted in carbon emissions of ~~103~~ 82.17 Mg CO_2-eq in the last two decades. Therefore, preventing mangroves from ~~the further~~ conversion ~~of mangrove areas~~ to other land uses and conservinge intact mangroves are ~~important~~ essential actions to reduce CO_2 emissions and help mitigate climate change.

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Supplementary Materials

Table S1. Species composition of mangrove in Pannikiang Island South Sulawesi

Plot	Species	n	D (ind. m^{-2})	DBH (cm)	H (m)	BA (m^2 ha^{-1})
1 (4°20'23,73"S - 119°36'9,96"E)	Bc	4	0.01	2.87	2.75	0.09
	Bg	8	0.01	4.02	2.75	0.18
	Rm	8	0.01	2.11	1.88	0.05
	Rs	53	0.07	2.28	3.41	0.08
	Sa	24	0.03	8.44	5.54	2.01
Subtotal		97	0.13	-	-	-
Mean ± SE			0.03 ± 0.012	3.94 ± 1.17	3.27 ± 0.62	0.48 ± 0.38
2 (4°20'23,54"S - 119°36'9,06"E)	Bc	4	0.01	4.70	8.00	0.34
	Bg	10	0.01	6.05	4.50	0.58
	Rm	4	0.01	5.57	9.75	0.34
	Rs	12	0.02	7.43	10.00	0.74
	Sa	21	0.03	6.85	6.24	0.52
Subtotal		51	0.07	-	-	-
Mean ± SE			0.01 ± 0.004	6.12 ± 0.48	7.70 ± 1.05	0.50 ± 0.08
3 (4°20'32.58"S - 119°35'59.29"E)	Bg	13	0.02	14.80	7.23	2.24
	Ra	10	0.01	11.08	7.10	12.60
	Rm	4	0.01	11.07	7.75	1.26
	Rs	32	0.04	11.16	7.31	1.28
	Sa	4	0.01	19.35	8.00	4.28
Subtotal		63	0.08	-	-	-
Mean ± SE			0.02 ± 0.007	13.49 ± 1.63	7.48 ± 0.17	4.33 ± 2.14
4 (4°20'36.53"S - 119°36'0.41"E)	Bg	22	0.03	6.46	4.32	0.45
	Ra	7	0.01	5.82	4.00	0.37
	Rs	16	0.02	6.27	4.31	0.42
	Sa	9	0.01	8.56	4.67	1.27
Subtotal		54	0.07	-	-	-
Mean ± SE			0.02 ± 0.004	6.78 ± 0.61	4.32 ± 0.14	0.63 ± 0.21

5 (4°21'17.2"S - 119°35'56.5"E)	Bg	6	0.01	10.46	8.17	1.25
	Ct	4	0.01	15.37	9.25	2.58
	Ra	9	0.01	12.28	8.44	1.63
	Rs	16	0.02	15.72	9.38	2.93
Subtotal		35	0.05	-	-	-
Mean ± SE			0.01 ± 0.003	13.46 ± 1.26	8.81 ± 0.30	2.10 ± 0.39
6 (4°21'15.6"S - 119°35'55.4"E)	Bg	6	0.01	11.57	9.00	1.51
	Cd	1	0.001	20.70	11.00	4.37
	Ct	2	0.00	9.39	8.00	0.91
	Ra	6	0.01	11.46	10.17	2.03
	Rs	17	0.02	10.55	9.24	1.22
Subtotal		32	0.04	-	-	-
Mean ± SE			0.01 ± 0.004	12.74 ± 2.03	9.48 ± 0.51	2.01 ± 0.62
7 (4°21'38.25"S - 119°35'37.39"E)	Bg	4	0.01	10.75	4.38	1.31
	Ht	5	0.01	28.41	7.62	10.53
	Ra	2	0.003	9.08	9.35	0.93
	Rs	3	0.004	8.70	7.97	0.85
	Sh	5	0.01	22.87	9.88	6.65
	Xg	1	0.001	6.05	4.30	0.37
	Xm	1	0.001	5.41	4.40	0.30
Subtotal		21	0.03	-	-	-
Mean ± SE			0.004 ± 0.001	13.04 ± 3.38	6.84 ± 0.92	2.99 ± 1.51
8 (4°21'43.60"S - 119°35'37.24"E)	Bg	1	0.001	43.31	12.50	19.14
	Cd	1	0.001	14.33	9.00	2.10
	Ct	1	0.001	12.10	8.00	1.49
	Ht	2	0.003	14.17	8.90	2.06
	Ra	10	0.01	10.13	7.08	1.11
	Rs	13	0.02	8.50	7.23	0.75
	Sh	8	0.01	27.64	11.81	9.07
	Xg	2	0.003	26.27	13.40	8.66
	Xm	1	0.001	12.74	11.80	1.66
Subtotal		39	0.05	-	-	-
Mean ± SE			0.01 ± 0.002	18.80 ± 3.80	9.97 ± 0.81	5.12 ± 2.05
Total		392	-	-	-	-
Grand Mean ± SE			0.01 ± 0.002	11.05 ± 1.54	7.23 ± 0.74	2.27 ± 0.55

389 Bc: *Bruguiera cylindrica*. Bg: *Bruguiera gymnorrhiza*. Cd: *Ceriops decandra*. Ct: *Ceriops*
390 *tagal*. Ht: *Hibiscuse tiliaceocus*. Ra: *Rhizophora apiculate*. Rm: *Rhizophora mucronata*. Rs:
391 *Rhizophora stylosa*. Sa: *Sonneratia alba*. Sh: *Scyphiphora hydrophyllacea*. Xg: *Xylocarpus*
392 *granatum*. Xm: *Xylocarpus mollucensis*. n: individual number of species *i*. D: density of

393 species *i*. DBH: diameter of breast height. H: height. BA: basal area. SE: the standard error
394 of the mean.
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401 Table S2. Biomass carbon stocks of mangroves for each plot in Pannikiang Island South
402 Sulawesi

Plot	AGB (Mg ha^{-1})	BGB (Mg ha^{-1})	AGC (Mg C ha^{-1})	BGC (Mg C ha^{-1})
1	0.44 ± 0.05	0.24 ± 0.03	0.21 ± 0.02	0.09 ± 0.01
2	1.07 ± 0.05	0.56 ± 0.02	0.51 ± 0.02	0.22 ± 0.01
3	7.33 ± 0.27	3.19 ± 0.11	3.52 ± 0.13	1.24 ± 0.04
4	1.03 ± 0.02	0.53 ± 0.01	0.49 ± 0.01	0.21 ± 0.003
5	6.92 ± 0.38	2.95 ± 0.15	3.32 ± 0.18	1.15 ± 0.06
6	8.73 ± 0.79	3.65 ± 0.30	4.19 ± 0.38	1.42 ± 0.12
7	14.38 ± 1.04	5.72 ± 0.39	6.90 ± 0.50	2.23 ± 0.15
8	49.17 ± 2.96	17.60 ± 0.96	23.60 ± 1.42	6.86 ± 0.37
Grand Mean ± SE	11.13 ± 0.35	4.31 ± 0.11	5.34 ± 0.17	1.68 ± 0.04
Max	49.17 ± 2.96	17.60 ± 0.96	23.60 ± 1.42	6.86 ± 0.37
Min	0.44 ± 0.05	0.24 ± 0.03	0.21 ± 0.02	0.09 ± 0.01

403 AGB tree: above-ground tree biomass. BGB: below-ground root biomass. AGC tree: above-
404 ground tree carbon. BGC tree: below-ground tree carbon. SE: the standard error of the mean.
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Table S3. Biomass carbon stocks of mangrove species in Pannikiang Island South Sulawesi

Species	AGC (Mg C ha^{-1})	BGC (Mg C ha^{-1})
Bc	0.07 ± 0.02	0.03 ± 0.01
Bg	16.07 ± 1.64	4.54 ± 0.43
Cd	3.31 ± 0.70	1.07 ± 0.21
Ct	2.05 ± 0.23	0.72 ± 0.07
Ht	3.97 ± 1.38	1.24 ± 0.40
Ra	2.53 ± 0.08	0.93 ± 0.03
Rm	0.58 ± 0.15	0.22 ± 0.05
Rs	2.92 ± 0.13	1.07 ± 0.04
Sa	1.45 ± 0.24	0.52 ± 0.08
Sh	6.18 ± 0.71	1.90 ± 0.20
Xg	3.05 ± 1.44	0.95 ± 0.44
Xm	0.60 ± 0.23	0.22 ± 0.08
Grand Mean ± SE	3.56 ± 0.17	1.12 ± 0.05
Max	16.07 ± 1.64	4.54 ± 0.43
Min	0.07 ± 0.02	0.03 ± 0.01

Bc: *Bruguiera cylindrica*. Bg: *Bruguiera gymnorrhiza*. Cd: *Ceriops decandra*. Ct: *Ceriops tagal*. Ht: *Hibiscuse tiliaceocus*. Ra: *Rhizophora apiculate*. Rm: *Rhizophora mucronata*. Rs: *Rhizophora stylosa*. Sa: *Sonneratia alba*. Sh: *Scyphiphora hydrophyllacea*. Xg: *Xylocarpus granatum*. Xm: *Xylocarpus mollucensis*. AGC: above-ground tree carbon. BGC: below-ground root carbon. SE: the standard error of the mean.

To the Reviewer A,

We would like to sincerely thank and appreciate for the highly constructive critics of this manuscript. We have implemented all these suggestions in the revised version.

Here is the detail of the revisions in the manuscript and our responses to the reviewers' comments:

General comments of the reviewer A:

- The study by Malik et al biomass carbon stocks in small island mangrove setting of Pannikiang, South Sulawesi. Findings from this study are important to evaluate impacts of land use management in mangrove and their implication to blue carbon dynamic. Overall, the paper provides multiple dataset of forest structure and biomass carbon stocks despite some other data such as deforestation rates may be need to be further elaborated, and the writing style of the manuscript should be improved by providing accurate citation and consistent order of the logic between research objectives-results-discussion.

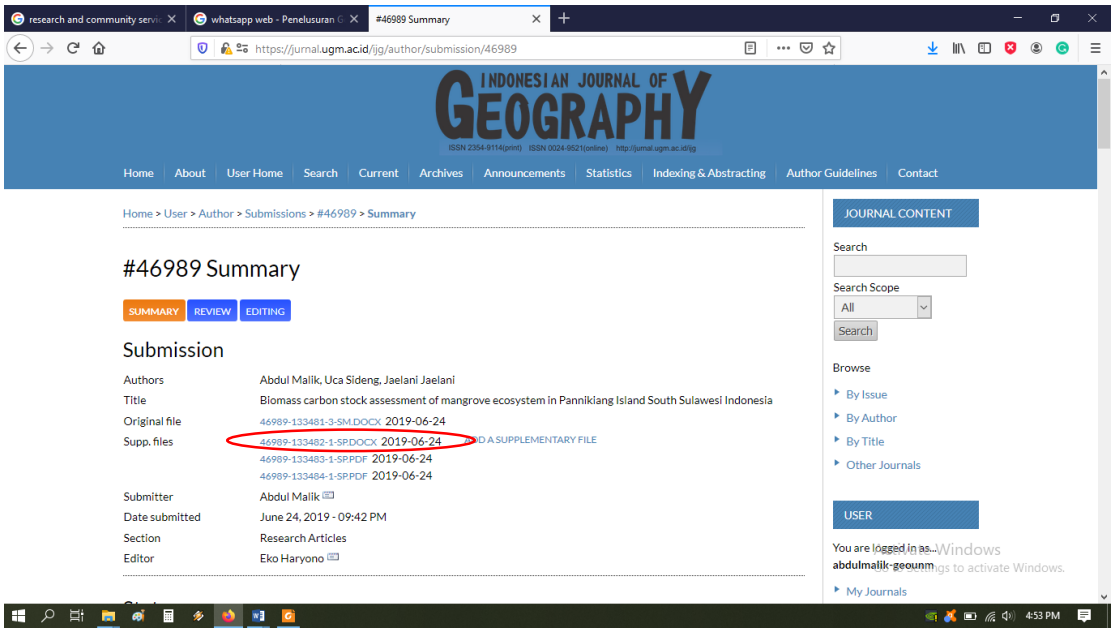
  Authors response:

  Thanks for the comments and suggestions. We have revised accordingly.

- "I would suggest providing further raw dataset obtained from this study in the supplementary information or via digital data repository platforms such as Mendeley Data and Figshare. Such of these data will provide a better understanding for the readers and also be useful for future meta-analysis based study on this topic".

  Authors response:

  Thanks for the suggestions. We have provided the raw dataset in the supplementary file section when submission of this manuscript in advance (see pic below). We have little edited and also put the supplementary information at the end of the revised manuscript (see lines 331-367).



Minor comments of the reviewer A:

- Abstract revision suggestion:

  One of the essential ecosystem services provided by mangrove is carbon sequestration and therefore, climate change mitigation. While previous assessment of mangrove carbon stocks and sequestration was focused on the estuarine and deltaic mangrove settings, there are still limited studies carried out at small island mangrove. This study aims to assess mangrove biomass carbon stocks at Pannikiang, a small island in South Sulawesi of Indonesia which occupies XX ha of species-rich pristine mangrove forests. Field based data collection survey was performed by using circular plot approach, while above-ground tree carbon stocks (AGC) and below-ground root (BGC) was estimated by using available species-specific allometric equation. The means of AGC and BGC were 5.34 ± 0.17 and 1.68 ± 0.04 Mg C ha^{-1}, respectively. *Bruguiera gymnorrhiza* mangrove species stores the greatest carbon stocks and followed by *Scyphiphora hydrophyllacea*. Carbon stocks obtained from small island mangrove in this study are XX lower than than stocks assessed from other mangrove locations across Indonesia and Southeast Asia counties. However, historical rates of deforestation in Pannikiang may generated emissions approximately 170 Mg CO_2-eq. Findings from this study will be useful to provide baseline data for policy decision-making in climate change mitigation in the region, specifically for improved land use management via low carbon development agenda.

  Keywords: biomass carbon stock; climate change; South Sulawesi

  Keyword must be an important word that is not mentioned in the title.

  Authors response:

  Thanks for the revision suggestion of the abstract and keywords. We have revised accordingly (see lines 12-27).

- Introduction section

  “I would suggest improving the intro text and other sections by using accurate citation and having more straightforward paragraph”.

  Authors response:

  Thanks for the suggestions, we have improved the introduction text and other sections by using accurate citation and having more straightforward paragraph.

  “In the last paragraph of the intro, I would suggest to elaborate the data analysis driven objective, such as ‘to assess spatial variation by comparing carbon stocks between XX study sites’ and ‘to estimate carbon emissions generated by deforestation in the region of XX between XXX and XXX”

  Authors response:

  Thanks, we have revised by elaborate the data analysis driven objective as your suggestion (see lines 72-75).

- Method section

  Line 120: it seems that Equation 2 only covers single tree basal area. Need further description on how to calculate basal area at plot level.

  Authors response:

  Thanks for your suggestions, we have revised by add equation for calculating basal area at plot level and its description (see lines 108-114).

  Line 141: it seems the authors don't need this equation and reference. It is clear that carbon stocks are derived from total AGC or BGC (Mg C) per plot area (ha).

  Authors response:

  Thanks for the suggestion, we have deleted the equation and reference.

  Line 143: no need to re-describe total plot area here as it has been provided above.

  Response:

  Correct! We have deleted it.

- Results section:

  Line 155: no need to provide source of data here. It is clear that this section is used for presenting this study results.

  Authors response:

  Thanks for the suggestion, we have deleted the source of data.

  Lines 159-164: why Rhizophora spp. is the most dominant species in the study site and Indonesia tropical region in general? See Norm Duke 1998 paper.

  Authors response:

  Thanks for the comment. We have added information about why Rhizophora spp. is the most dominant species in the study site and Indonesia tropical region in general by refer to Duke et al. (1998) (see lines 150-153) and put the paper in the list of references (see lines 256-257).

  Line 171: make sure using IPCC unit for carbon stocks. If it is carbon stocks, please use Mg C ha^{-1} for example. In this paragraph, the used unit is Mg ha^{-1}, but starting from line 180 the authors used Mg C ha^{-1}. If the paper is framed to discuss blue carbon related topic, no need to present biomass stocks, just straight forward to biomass carbon stocks instead.

Authors response:

Thanks for the suggestion, we have deleted the result and discussion about biomass stocks and just straight forward to biomass carbon stocks as related to the topic.

Line 192: any other reason than this DBH? For example, hydrogeomorphic setting? Where small island mangrove may be characterized by high salinity and therefore limiting forest growth even though they have similar age with those in the mainland estuarine system.

Authors response:

Thanks for the comments, we have added it accordingly (see lines 174-176).

Lines 222-227: the approach for this back in envelope calculation needs to be described in the method section.

Authors response:

Thanks for the suggestion, we have described the calculation of carbon emissions in the method section (see lines 130-134).

INDONESIAN JOURNAL OF GEOGRAPHY
ISSN 2354-9114(print) ISSN 0024-9521(online) http://jurnal.ugm.ac.id/ijg

#46989 Review

SUMMARY REVIEW EDITING

Submission

Authors	Abdul Malik, Uca Sideng, Jaelani Jaelani
Title	Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia
Section	Research Articles
Editor	Eko Haryono

Peer Review

Round 1

Review Version	46989-133485-1-RV.DOCX 2019-06-24
Initiated	2020-03-03
Last modified	2020-03-23
Uploaded file	Reviewer A 46989-164262-1-RV.DOCX 2020-03-19

Editor Decision

Decision	Accept Submission 2022-03-08
Notify Editor	Editor/Author Email Record 2022-03-08
Editor Version	None
Author Version	46989-168241-1-ED.DOCX 2020-04-29 DELETE 46989-168241-2-ED.DOCX 2020-04-29 DELETE 46989-168241-3-ED.DOCX 2020-04-29 DELETE 46989-168241-4-ED.DOCX 2021-12-29 DELETE 46989-168241-5-ED.JPG 2021-12-29 DELETE
Upload Author Version	Choose File No file chosen Upload

Accredited Journal, Based on Decree of the Minister of Research, Technology and Higher Education, Republic of Indonesia Number 30/E/KPT/2018, Vol 50 No 1 the Year 2018 - Vol 54 No 2 the Year 2022

ISSN 2354-9114 (online), ISSN 0024-9521 (print)

00635439 IJG STATISTIC

REVISION PROCEDURES

REVIEWER PROCEDURES

JOURNAL RANK

Scimago journal rank :

SUGGESTED TOOLS

- Mendeley
- Zotero
- Grammarly

PROOFREADING

Good LINGUA

NOTIFICATIONS

- View (2 new)
- Manage

AUTHOR

Submissions

- Active (0)
- Archive (2)
- New Submission

INFORMATION

- For Readers
- For Authors
- For Librarians

ISSN

ISSN (PRINT) BARCODE

9 770024 952005

ISSN (ONLINE) BARCODE

KEYWORDS

Coastal GIS Gender Geographical Information System Indonesia Interpolation Nigeria Remote Sensing Remote sensing Spatial articulation Spatial physical changes Urbanization conservation flood flood disaster land cover risk assessment spatial autocorrelation sustainability urban growth water quality

UNM

Abdul Malik <abdulmalik@unm.ac.id>

Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia

1 message

Abdul Malik <abdulmalik@unm.ac.id> Sun, Sep 13, 2020 at 2:38 AM
To: Eko Haryono <e.haryono@ugm.ac.id>

Dear Dr. Eko Haryono
Editor in Chief
Indonesian Journal of Geography

We would like to know the progress status of our manuscript after it has been revised according to reviewer comments and your suggestion to put one publication from IJG. We have sent it back include specific response to each reviewer comments in separate file since April 2020.

Best regards,
Abdul Malik

Chief Editor
Indonesian Journal of Geography
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Phone: +62 812-2711-480

UNM

Abdul Malik <abdulmalik@unm.ac.id>

[IJG] Editor Decision: Revision Required

3 messages

Eko Haryono <e.haryono@ugm.ac.id> Wed, Mar 10, 2021 at 11:12 AM
To: Abdul Malik <abdulmalik@unm.ac.id>
Cc: Uca Sideng <ucasideng@unm.ac.id>, Jaelani Jaelani <jaylani193@gmail.com>

Dear Abdul Malik,

More minor revision is needed.
Map need coordinates and pam index (Indonesian map)
Double check the English and spelling.

Please submit the revision before March 20, 2021.

Best wishes,
Eko Haryono
Editor in Chief
Indonesian Journal of Geography,
Faculty of Geography, Universitas Gadjah Mada, Yogyakarta

Chief Editor
Indonesian Journal of Geography
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Abdul Malik <abdulmalik@unm.ac.id> Fri, Mar 12, 2021 at 11:15 AM
To: Eko Haryono <e.haryono@ugm.ac.id>
Cc: ucasideng@unm.ac.id, Jaylani193 <jaylani193@gmail.com>

Dear
Eko Haryono
Editor in Chief of IJG

Thank you very much for your information about the current status of the manuscript.
We will revise the manuscript according to your comment and suggestion, and send it back to you no later than March 20, 2021.

Best regards,
Abdul Malik
(Corresponding author)
[Quoted text hidden]
--
Abdul Malik, Ph.D.

Department of Geography
Faculty of Mathematics and Natural Sciences
Universitas Negeri Makassar (UNM)
Kampus UNM Parangtambung, Jl.Malengkeri Raya, Makassar, 90224
South Sulawesi - INDONESIA
Phone: +62-853 9859 2785 Fax: +62-411-880568
E-mail: abdulmalik@unm.ac.id

Abdul Malik <abdulmalik@unm.ac.id> Thu, Mar 18, 2021 at 12:36 AM
To: Eko Haryono <e.haryono@ugm.ac.id>
Cc: ucasideng@unm.ac.id, Jaylani193 <jaylani193@gmail.com>

Dear Eko Haryono,

Editor in Chief
Indonesian Journal of Geography

Thank you for your email. We have revised the manuscript according to your comments and suggestions. Please find the revised manuscript with track changes version and no track changes version (attached).

Best regards,
Abdul Malik

On Wed, Mar 10, 2021 at 11:12 AM Eko Haryono <e.haryono@ugm.ac.id> wrote:
[Quoted text hidden]

[Quoted text hidden]

2 attachments

46989-168241-Revised.docx
689K

46989-168241-Revised with track changes.docx
843K

UNM

Abdul Malik <abdulmalik@unm.ac.id>

[IJG] Editor Decision: Revision Required

4 messages

Eko Haryono <e.haryono@ugm.ac.id> Tue, Jul 20, 2021 at 11:32 PM
To: Abdul Malik <abdulmalik@unm.ac.id>
Cc: Uca Sideng <ucasideng@unm.ac.id>, Jaelani Jaelani <jaylani193@gmail.com>

Dear Abdul Malik,

In March, I emailed you asking to provide map with coordinate. In your manuscript, the map does not have coordinate. I suggest you do not use google image. Please also add inset map

I did not find that you already make revision of the map.

Best wishes,
Eko Haryono
ID SCOPUS: 6508073148,
Faculty of Geography, Universitas Gadjah Mada
e.haryono@ugm.ac.id
Editor in Chief
Indonesian Journal of Geography,
Faculty of Geography, Universitas Gadjah Mada, Yogyakarta

Chief Editor
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Phone: +62 812-2711-480

Abdul Malik <abdulmalik@unm.ac.id> Thu, Jul 22, 2021 at 2:09 AM
To: Eko Haryono <e.haryono@ugm.ac.id>

Dear Eko Haryono
Editor in Chief
Indonesian Journal of Geography,
Faculty of Geography, Universitas Gadjah Mada, Yogyakarta

Here is revised the manuscript with the newly revised map that is required and also the map in the Jpg format file

Best regards
Abdul Malik
[Quoted text hidden]
--
Abdul Malik, Ph.D.

Department of Geography
Faculty of Mathematics and Natural Sciences
Universitas Negeri Makassar (UNM)
Kampus UNM Parangtambung, Jl.Malengkeri Raya, Makassar, 90224
South Sulawesi - INDONESIA
Phone: +62-853 9859 2785 Fax: +62-411-880568
E-mail: abdulmalik@unm.ac.id

---

2 attachments

Study Area_Pannikiang Island.jpg
1604K

46989-168241-Revised 21 July 2021.docx
495K

Eko Haryono <e.haryono@ugm.ac.id> Fri, Jul 23, 2021 at 9:46 AM
To: Abdul Malik <abdulmalik@unm.ac.id>

Dear Abdul

Have uploaded it in our journal system

Warm Regards
Eko
[Quoted text hidden]
--
Karst Research Group
Faculty of Geography
The University of Gadjah Mada
Yogyakarta, INDONESIA

Abdul Malik <abdulmalik@unm.ac.id> Thu, Dec 9, 2021 at 12:12 AM
To: Eko Haryono <e.haryono@ugm.ac.id>

Dear Dr. Eko Haryono
Editor of Indonesian Journal of Geography (IJG)

Manuscript ID number: 46989
We would like to know the status of our manuscript entitled "Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia". Is it still need revision? or it has been accepted for publication in your journal? since July 23, 2021 we don't hear again the status of the manuscript

Best regards,
Abdul Malik
[Quoted text hidden]

UNM

Abdul Malik <abdulmalik@unm.ac.id>

[IJG] Editor Decision: Accept Manuscript

2 messages

Eko Haryono <e.haryono@ugm.ac.id> Tue, Mar 8, 2022 at 2:50 PM
To: Abdul Malik <abdulmalik@unm.ac.id>
Cc: Uca Sideng <ucasideng@unm.ac.id>, Jaelani Jaelani <jaylani193@gmail.com>

Dear Abdul Malik,

Congratulations! After considering your responses to reviewer's comments, We have reached the decision regarding your submission to Indonesian Journal of Geography, "Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia" to Accept your manuscript to be published in Indonesian Journal of Geography.

You will receive emails regarding the details of your publication. We may also request a technical edit of your manuscript if necessary.

Thank you for submitting to the Indonesian Journal of Geography and we look forward to receiving your manuscript in the future.

Best wishes,
Eko Haryono
ID SCOPUS: 6508073148,
Faculty of Geography, Universitas Gadjah Mada
e.haryono@ugm.ac.id
Editor in Chief
Indonesian Journal of Geography,
Faculty of Geography, Universitas Gadjah Mada, Yogyakarta

Chief Editor
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Phone: +62 812-2711-480

Abdul Malik <abdulmalik@unm.ac.id> Thu, Mar 10, 2022 at 11:44 PM
To: Eko Haryono <e.haryono@ugm.ac.id>

Dear editor of IJG

Thank you for accepting our manuscript for publishing in your journal. We are looking forward for the email concerning detail of the publication.

Best regards,
Abdul Malik
Corresponding author
[Quoted text hidden]

UNM

Abdul Malik <abdulmalik@unm.ac.id>

[IJG] Proofreading Request (Author)

9 messages

Winarsih Winarsih <wiwin_geo@ugm.ac.id> Thu, Apr 28, 2022 at 1:04 PM
To: Abdul Malik <abdulmalik@unm.ac.id>

Dear Abdul Malik,

Your submission "Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia" to Indonesian Journal of Geography now needs to be proofread by following these steps.
1. Click on the Submission URL below.
2. Log into the journal and view PROOFING INSTRUCTIONS
3. Click on VIEW PROOF in Layout and proof the galley in the one or more formats used.
4. Enter corrections (typographical and format) in Proofreading Corrections.
5. Save and email corrections to Layout Editor and Proofreader.
6. Send the COMPLETE email to the editor.

Submission URL: https://jurnal.ugm.ac.id/ijg/author/submissionEditing/46989
Username: abdulmalik-geounm

Best wishes,
Winarsih Winarsih
Faculty of Geography, Universitas Gadjah Mada
wiwin_geo@ugm.ac.id
Assistant Editor
Indonesian Journal of Geography and
Majalah Geografi

Chief Editor
Indonesian Journal of Geography
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Abdul Malik <abdulmalik@unm.ac.id> Tue, May 17, 2022 at 11:46 AM
To: Winarsih Winarsih <wiwin_geo@ugm.ac.id>

Dear Editor of the Indonesian Journal of Geography

Attached of the proofread corrected manuscript with the title **"Biomass Carbon Stock Assessment of Mangrove Ecosystem in Pannikiang Island South Sulawesi Indonesia"** for publishing in the Indonesian Journal of Geography.

Best regards,
Abdul Malik
(Corresponding author)
[Quoted text hidden]
--
Abdul Malik, Ph.D.

Department of Geography
Faculty of Mathematics and Natural Sciences
Universitas Negeri Makassar (UNM)
Kampus UNM Parangtambung, Jl.Malengkeri Raya, Makassar, 90224
South Sulawesi - INDONESIA
Phone: +62-853 9859 2785 Fax: +62-411-880568
E-mail: abdulmalik@unm.ac.id

46989-254419-1-LE _Proofreading Corrected.pdf
583K

Abdul Malik <abdulmalik@unm.ac.id> Tue, May 17, 2022 at 11:55 AM
To: Winarsih Winarsih <wiwin_geo@ugm.ac.id>

Following my email, we add one correction again.
Table S2 as supplementary materials is missing so please add it.

Best regard,
Abdul Malik
[Quoted text hidden]

46989-254419-1-LE _Proofreading Corrected.pdf
591K

Wiwin Winarsih <wiwin_geo@ugm.ac.id> Mon, May 30, 2022 at 4:46 PM
To: Abdul Malik <abdulmalik@unm.ac.id>

sudah kami perbaiki mohon di koreksi kembali.apakah sudah ok?terima kasih.

and..

your article published after your pay publication contribution.

If you have received a billing email, please complete the cost for publication. The contribution of this publication aims to maintain the quality of the publication of the Indonesian Journal of Geography.

For the purposes of these payments, we ask for data to issue a billing:

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685K

Abdul Malik <abdulmalik@unm.ac.id> Thu, Jun 2, 2022 at 2:02 AM
To: Wiwin Winarsih <wiwin_geo@ugm.ac.id>

Dear Editor of IJG

There are still things that need to be edited.
Attached is the article file for revision before publication

Data for Issuing billing:

Author name: Abdul Malik

Institution Name: Universitas Negeri Makassar

Email : abdulmalik@unm.ac.id

Mobile numbers:085398592785, 087803439691 (WA)

Addresses:Jurusan Geografi FMIPA UNM, Jl. Malengkeri Raya Kampus UNM Parangtambung, Makassar, 90224

taxpayer number: 47.344.298.6-804.000

TIN (Taxpayer Identification Number:

Best,
Abdul Malik
[Quoted text hidden]

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663K

Wiwin Winarsih <wiwin_geo@ugm.ac.id> Thu, Jun 2, 2022 at 4:18 PM
To: Abdul Malik <abdulmalik@unm.ac.id>

Dear Mr. Abdul Malik

sudah kami betulkan pak silahkan untuk di cek kembali.
[Quoted text hidden]

Jurnal Abdul Malik 46989-251578-1-CE.pdf
623K

Abdul Malik <abdulmalik@unm.ac.id> Thu, Jun 2, 2022 at 4:53 PM
To: Wiwin Winarsih <wiwin_geo@ugm.ac.id>

Dear Editor of IJG

Terima kasih sudah memasukkan paragraf yg dimaksud, hanya letak nya MASIH KELIRU.
Paragraf tersebut berada dibagian akhir dari bagian Introduction BUKAN di awal bagian STUDY AREA
Silahkan lihat penjelasan lengkap di artikel yang terlampir.

Best regards,
Abdul Malik
[Quoted text hidden]

Jurnal Abdul Malik 46989-251578-1-CE (2).pdf
591K

Wiwin Winarsih <wiwin_geo@ugm.ac.id> Fri, Jun 3, 2022 at 3:46 PM
To: Abdul Malik <abdulmalik@unm.ac.id>

Dear Mr. Abdul Malik

sudah kami betulkan pak silahkan untuk di cek kembali

[Quoted text hidden]

Jurnal Abdul Malik 46989-251578-1-CE.pdf
623K

Abdul Malik <abdulmalik@unm.ac.id> Fri, Jun 3, 2022 at 3:57 PM
To: Wiwin Winarsih <wiwin_geo@ugm.ac.id>

Dear Editor of IJG

Thanks for the revision. It looks good now.

Best regards,
Abdul Malik

[Quoted text hidden]

INDONESIAN JOURNAL OF GEOGRAPHY
ISSN 2354-9114(print) ISSN 0024-9521(online) http://jurnal.ugm.ac.id/ijg

#46989 Editing

SUMMARY REVIEW EDITING

Submission

Authors	Abdul Malik, Uca Sideng, Jaelani Jaelani
Title	Biomass carbon stock assessment of mangrove ecosystem in Pannikiang Island South Sulawesi Indonesia
Section	Research Articles
Editor	Eko Haryono

Copyediting

COPYEDIT INSTRUCTIONS

REVIEW METADATA	REQUEST	UNDERWAY	COMPLETE
1. Initial Copyedit File: None	—	—	—
2. Author Copyedit File: None Choose File No file chosen Upload	—	—	
3. Final Copyedit File: None	—	—	—

Copyedit Comments No Comments

Layout

Layout Editor Winarsih Winarsih

Layout Version	REQUEST	UNDERWAY	COMPLETE	VIEWS
46989-254419-1-LE.PDF 2022-04-28	2022-04-28	—	—	

Galley Format	FILE	
1. PDF VIEW PROOF	46989-259318-1-PB.PDF 2022-06-15	533

Supplementary Files	FILE
1. Supplementary Materials	46989-133482-2-SP.DOCX 2020-04-29
2. Cover Letter	46989-133483-1-SP.PDF 2019-06-24
3. Statement of Originality	46989-133484-1-SP.PDF 2019-06-24

Layout Comments No Comments

Proofreading

Proofreader None

REVIEW METADATA

	REQUEST	UNDERWAY	COMPLETE
1. Author	2022-04-28	2022-04-30	
2. Proofreader	—	—	—
3. Layout Editor	—	—	—

Proofreading Corrections No Comments PROOFING INSTRUCTIONS

JOURNAL CONTENT

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30/E/KPT/2018, Vol 50 No 1 the Year 2018 - Vol 54 No 2 the Year 2022

ISSN 2354-9114 (online), ISSN 0024-9521 (print)

00635441 IJG STATISTIC

REVISION PROCEDURES

REVIEWER PROCEDURES

JOURNAL RANK

Scimago journal rank :

SUGGESTED TOOLS

- Mendeley
- Zotero
- Grammarly

PROOFREADING

Good LINGUA

NOTIFICATIONS

- View (2 new)
- Manage

AUTHOR

Submissions

- Active (0)
- Archive (2)
- New Submission

INFORMATION

- For Readers
- For Authors
- For Librarians

ISSN

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KEYWORDS

Coastal GIS Gender Geographical Information System Indonesia Interpolation Nigeria Remote Sensing Remote sensing Spatial articulation Spatial physical changes Urbanization conservation flood flood disaster land cover risk assessment spatial autocorrelation sustainability urban growth water quality