



Program Book

THE 2ND BIENNIAL CONFERENCE OF TROPICAL BIODIVERSITY



Managing Challenges in Biodiversity Conservation
During Pandemic to Achieve
Sustainable Development Goals
for Better Environment

Editor :

Mukrimin - Risma Illa Maulany - Ira Taskirawati - Agussalim - Emban Ibnu Rusyid Mas'ud -
Nurdin Dalya - Wahyuni - Nasri - Adrayanti Sabar - Chairil - Iswanto - A. Vika Faradiba Muin



AUGUST 4 - 5, 2021
MAKASSAR - INDONESIA

Program Book of The 2nd Biennial Conference of Tropical Biodiversity 2021

Managing Challenges in Biodiversity Conservation during the Pandemic to
Achieve Sustainable Development Goals for Better Environment

Hosted by:

Faculty of Forestry, Hasanuddin University
Makassar, South Sulawesi Province, Indonesia

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Makassar-Indonesia, August 4th-5th, 2021

MESSAGE BY RECTOR OF HASANUDDIN UNIVERSITY



Prof. Dr. Dwia Aries Tina Pulubuhu, M.A
(The Rector of Hasanuddin University)

I would like to warmly welcome all participants to the 2nd Biennial Conference of Tropical Biodiversity (BCTB) 2021 that is initiated by Forestry Faculty, Hasanuddin University (UNHAS). It is a great honor for us to become the host of the event with the hope that through the conference we can establish good networking in the topics.

Hasanuddin University is one of the largest autonomous and innovative universities in the Eastern part of Indonesia. The University was enacted in 1956 and named after Sultan Hasanuddin, a former King of the Gowa Kingdom. Currently, there are 16 faculties at the University and Forestry faculty was the 14th on the list. The University is located around 12 kilometers from the sea side of Makassar City.

As we know that we are located in the Wallacea region that is defined as a faunal boundary line drawn by the British Naturalist Alfred Russel Wallace that marks the eco-zones of Asia and Australia and is called the Wallacea Region. The region is known for its unique biodiversity and known for its endemic species. As we know, Biodiversity has become an issue that is dynamic, progressive, and always worth discussing, especially in the unique ecoregion in eastern Indonesia with much more character as the small island and as not only as a home for mega biodiversity but hope this is not only relevant for the science but also will become a bridge to the practical world on saving our biodiversity.

The conference itself is very much reflecting the inter-disciplinary approach to investigating biodiversity and how to better conserve natural resources. I think this conference is also one of the efforts to achieve our University's vision as a center of excellence for Indonesian maritime-based development of humanity, sciences, technology, arts, and cultures.

Here, I, on the behalf of the organizing committee and University, would also like to extend our gratitude especially to Prof. Enrico Bonello from The Ohio State University-USA, Dr. Doan Nainggolan from Aarhus University-Denmark, Prof. Erin P. Riley from San Diego State University-USA, Dr. Ida Ayu Pradnya Resosudarmo of Australian National University-Australia, and Prof. Supratman from Hasanuddin University-Indonesia who have accepted our invitation to become the keynote speakers of the conference, to all participants to all of the sponsors and contributors, and the organizing committee. Lastly, finally, allow and pleasant international conference, and pray that this event will become a pioneering seed for continuous and long-lasting mutual bonding and networking in the years to come.

Thank you very much.

Prof. Dr. Dwia Aries Tina Pulubuhu, MA

MESSAGE BY DEAN OF FORESTRY FACULTY



Dr. A. Mujetahid, S.Hut., MP.
(Dean, Faculty of Forestry, Hasanuddin University)

On behalf of the Faculty of Forestry, Hasanuddin University (Unhas), I would like to extend a very warm welcome to all guests and participants. It is a great pleasure to welcome outstanding scientists, researchers, and practitioners here at the 2nd Biennial Conference on Tropical Biodiversity (BCTB) 2021.

It is a privilege for the Faculty of Forestry, Hasanuddin University being the host of this international event with the support from many contributors who have made this event possible.

The conference aims to benefit participants in terms of research development, networking initiation, and disseminating science and knowledge to the broader context in particular in the area of biodiversity conservation and management. We are hoping that the information discussed and developed in this conference will bring the positive contribution and significant changes in countering and addressing problems as well as challenges in the area concern as well as finding suitable solutions to protect and conserve our biodiversity from declining.

I would like to thank the Rector of Hasanuddin University, the keynote speakers, and other parties for valuable supports and contributions to allow us in holding this international conference. I would like to take this opportunity to thank all committee members of the Faculty of Forestry, Unhas who all have been working in ensuring the success of the international conference. Finally, I thank every one of you for your participation and support, and wish everyone a successful deliberation and have an enjoyable stay during the conference.

Thank you very much.

Dr. A. Mujetahid, S.Hut., MP.

MESSAGE BY CHAIRMAN BCTB 2021



Mukrimin, S.Hut., MP., Ph.D

(Chairman of the 2nd Biennial Conference on Tropical Biodiversity 2021)

On behalf of the organizing committee, I wish to welcome all guests and participants, paper presenters, and delegates to the 2nd Biennial Conference of Tropical Biodiversity 2021. Special thanks to Prof. Enrico Bonello from Ohio State University-USA, Dr. Doan Nainggolan from Aarhus University-Denmark, Prof. Erin P. Riley from San Diego State University-USA, Dr. Ida Ayu Pradnya Resosudarmo from Australian National University-Australia, and Prof. Supratman from Hasanuddin University-Indonesia.

Ladies and Gentlemen, as we know Biodiversity is not only evenly distributed, but also varies widely across the world and within regions, the diversity of which is highly dependent on environmental factors such as temperature, rainfall, altitude, soil geography, and the presence of other species. Biodiversity is also very important in supporting ecosystem services including air quality, climate including carbon dioxide absorption, water purification, pollination, and erosion prevention. Rapid environmental changes have led to many mass extinctions of species. Therefore, protecting its existence has become one of the greatest challenges humanity has to face.

The 2nd BCTB 2021 is a scientific forum to enhance science and technology, and together with researchers, scientists, practitioners, and scholars to anticipate the impacts of climate change in the field of biodiversity. This is also conducted to promote Sustainable Development Goals (SDGs). Hence, this conference chose an SDGs-related theme, namely **“Managing Challenges in Biodiversity Conservation During The Pandemic to Achieve Sustainable Development Goals for Better Environment”** with 6 sub-themes, 1) Assessment of global biodiversity: the impact of a pandemic to biodiversity; 2) The existence of genetic diversity to maintain biodiversity; 3) Community partnership for biodiversity conservation, 4) Biodiversity and utilization; 5) The conservation of tropical biodiversity: current challenges for the management; and 6) Ecological risk and natural disaster.

This international conference is being attended by around 250 participants from 6 countries (USA, Denmark, Australia, Italy, Finland, and Indonesia) including keynote speakers, oral presenters, and participants. The participant consists of 31 Universities and 13 forestry-related institutions. We received 202 abstracts in total, but after the review process, the committee accepted 187 abstracts and rejected 15 abstracts because they didn't fit with the sub-themes. The conference will be held in two days, 4 to 5 August 2021.

On behalf of the committee of this conference, I wish to convey my appreciation to the Rector of Hasanuddin University, and the Dean of Forestry Faculty for their support to ensure the success of this conference.

Finally, my sincere thanks to all committee members and a volunteer team of the Forestry Faculty, Hasanuddin University who all have full commitment and work hard for this international conference. My sincere thanks also to all parties including session chairs, all speakers, and participants that make this conference meaningful and happening. Hopefully, this conference will give benefit all participants and the organizers, and I wish you all a successful conference.

Thank you.

Mukrimin S.Hut., MP., Ph.D

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Messalina Lovenia Salampessy^{1*}, Tini Nurani², Indra G Febryano³, Andi C Ichsan⁴, I G.A Manik Widhyastini⁵, Nunung Parlinah⁶, Dewi Fitrianti⁷, Dafit Ariyanto⁸

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ABSTRACT

Indonesia's territory is vulnerable to the impacts of climate change especially those caused by rising sea levels and inundation due to flooding in coastal areas or rob. These climate change conditions require an increase in the adaptive capacity of the community to minimize the level of socio-economic vulnerability. This study aimed to assess the level of vulnerability, by assessing or studying the exposure, sensitivity and adaptability (capacity) of the community in facing various phenomena and impacts of climate change. This research was conducted in Pantai Bahagia Village, Bekasi, from January to March 2019. Time and location of research, methods and samples, vulnerability indicators used, and data were obtained by direct observation, in-depth interviews, and focus group discussions. Data were analyzed descriptively and qualitatively with the support of data quantification to determine the level of exposure, sensitivity and adaptive capacity of the community. The results showed that the vulnerability of the Pantai Bahagia Village community in facing climate change was classified as high. The value of each indicator was 3 (high) for the exposure level, 3 (high) for the sensitivity indicator and 1.4 (low) for the adaptive capacity indicator. The mitigation strategies that were carried out economically and socially are through increasing the adaptive capacities of the community, i.e., increasing community knowledge, structuring and building infrastructure, as well as improving the rehabilitation of mangrove forests. Therefore, community welfare and environmental sustainability will be improved.

Keywords: Climate change, Vulnerability, Coastal communities, Mangroves