

AUSTRALIA-INDONESIA

# SUSTAINABLE FUTURES

COLLABORATIVE PROGRAM FOR SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE

QUARTERLY REVIEW | VOLUME 1 | 2019

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## Deepening regional cooperation on sustainability and climate change



*L-R: Professor Dr Jatna Supriatna, Institute for Sustainable Earth and Resources and Dr Rer Nat Abdul Harris Dean of Faculty of Science, (Universitas Indonesia), Professor Rachmat Witoelar, Special Envoy for Climate Change, Professor Dr Ir Muhammad Anis M. Met, Rector of Universitas Indonesia, Professor Caitlin Byrne, Director, Griffith Asia Institute and Professor Brendan Mackey, Director of the Griffith Climate Change Response Program (Griffith University) and Mr Allaster Cox, Deputy Head of Mission at the Australian Embassy in Jakarta, Indonesia.*

In November 2018 Griffith Asia Institute (GAI) led an academic delegation to Indonesia for the Jakarta launch of the Collaborative Australia-Indonesia Program on Sustainable Development and Climate Change (CAIPSDCC).

GAI first launched this program in June 2018 at Griffith University's Nathan campus. However, the opportunity to launch again in Jakarta was particularly special. It was symbolic of the two-way nature of the partnership we hope to inspire and live up to through this program. First, GAI was privileged to work with the Honourable Rachmat Witoelar, the Indonesian President's Special Envoy for Climate Change and his team in developing and advancing the launch agenda. Together, we engaged a range

of perspectives from Australia and Indonesia—across government, academia, business and civil society—in dialogue about how we might advance our respective interests in sustainable development while taking action to mitigate and adapt to a changing climate.

Second, the Jakarta launch signified the beginning of new partnerships, and we were especially pleased to welcome the University of Indonesia (UI) and their Institute of Sustainable

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# From the Director...



I am delighted to introduce GAI's new *Australia-Indonesia Sustainable Futures* quarterly review focused on shared interests and common challenges facing our two nations and the Asia-Pacific region as we deal with a changing climate and progress sustainable development priorities.

This inaugural issue introduces our partners—the Office of the Indonesian President's Special Envoy for Climate Change and Universitas Indonesia, as well as some of the key researchers in Australia and Indonesia who are progressing important projects in the field.

It is, without question an increasingly interdisciplinary field, drawing on a range of expertise and experiences that cross the boundaries of politics, security, business and society. As a result, it is a space that requires creativity and cooperation from across academia, as well as all levels of government, industry and the community sector. We hope to deepen and expand this dialogue in coming months, including through the launch of our annual 'Witoelar Dialogues' in March.

My hope is that this review offers a platform for a wider regional conversation

on climate change and sustainable development. Our aim is to shine a light on innovative projects and research, share experiences and knowledge, and build connections that will benefit the next generation of leaders within our region.

I am very grateful for the interest and enthusiasm of our partners, and look forward to continuing to deepen our collaboration throughout the coming year.

## Professor Caitlin Byrne

Director, Griffith Asia Institute  
Griffith University



## Foreword

### Mr Rachmat Witoelar

Indonesian President's Special Envoy for Climate Change

It gives me great pleasure to have been involved in climate change research with Griffith University since the beginning of 2007 and to witness it develop into CAIPSDCC—a more comprehensive and action-oriented collaboration.

Climate change is indeed the biggest threat for humanity and the defining issue of our time. Failure to combat climate change carries the highest risk impacting extreme weather events, food and water crisis, collapse of ecosystems, serious disruption of critical infrastructure, forced migration, and political instability. Through the Paris Agreement signed in 2015, the world has reaffirmed a goal to hold the increase on earth temperature to well below 2 degrees celsius above pre-industrial levels and to pursue efforts to 1.5 degrees celsius.

Although countries are committed to reduce emissions, global ambitions are not enough and the sense of urgency is still lacking. The aggregate contribution by

countries still puts the rising temperatures above the safe threshold for humans. In October 2018, the 'Intergovernmental Panel on Climate Change's Special Report on Global Warming: 1.5°C' stated that rapid, far-reaching and unprecedented changes in all aspects of society is urgently required.

Collaboration between universities is an opportunity to transfer knowledge between researchers. CAIPSDCC is expected to promote joint research between Indonesia, Australia, and countries in the region to produce science-based policy recommendations in the field of climate change and sustainable development.

I personally hope that CAIPSDCC contributes to the good relationship between Indonesia and Australia, and helps us seize the opportunities for a bright, sustainable, low-carbon, and resilient future.



“For Griffith, this initiative is emblematic of deeper traditions. Promoting an environmentally sustainable society sits at the core of who we are, alongside our enduring commitment to advancing Australia's engagement with our neighbourhood. It is an exciting opportunity for us to work across disciplines, and we are pleased to collaborate with our Indonesian friends and colleagues to bring our commitments to life.”

## Professor Ian O'Connor

Former Vice Chancellor  
Griffith University  
2018

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Earth and Resources (ISER) as Indonesian partners in this collaborative program. We look forward to working closely with UI and ISER in developing dialogues, research collaborations, student workshops and mobility experiences as the program continues to develop.

The launch itself was much more than a ceremonial event. Plenary and workshop sessions challenged participants to engage more deeply with key issues across four thematic areas:

1. maritime and coastal adaptation in Eastern Indonesia;
2. future needs and response measures;
3. mitigating climate change through sustainable landscape management; and
4. climate change impacts on health.

The discussion across each of the four areas brought many commonalities to light, and highlighted the importance of sharing our knowledge and experience. Ensuring how local wisdom and traditional knowledge might be integrated alongside contemporary research methods, to inform better policy and decision-making, emerged as a critical theme.

Our Griffith delegation brought interdisciplinary strengths to the discussion, representing the breadth of Griffith's interests in sustainable development and climate change, and an impressive depth of understanding and expertise in Indonesia. We all came away with new ideas and opportunities, and a greater appreciation of the potential for collaboration with Indonesia.

Special mention must be made of the fact that the collaborative program reflects nearly ten years of engagement and collaboration in Indonesia, led in particular by Dr Peter Davey— Director of the Centre of Excellence for Sustainable Development for Indonesia, as well as Professor Cordia Chu and Professor Brendan Mackay. Further special mention should also be made of Rachmat Witoelar an Adjunct Professor and longstanding friend of Griffith University, for his tireless championing of climate change issues and his deep optimism for the role that Australia and Indonesia might play together to address the pressing challenges before us.



## Katowice: Another stepping-stone towards a low carbon resilient world

**Ms Moekti Handajani Soejachmoen**

Assistant to the President's Special Envoy on Climate Change

Three years after the adoption of the Paris Agreement, parties recently managed to conclude most of the work as mandated by the agreement in Katowice. There was never an easy road to fulfil the mandate, especially when it was to have a unanimous agreement from almost 200 parties with different interests, positions, backgrounds, capacities and capabilities. One can only imagine how difficult and tiring the process is.

In the early hours of Sunday 15 December 2018, the twenty-fourth session of the Conference of the Parties to the UNFCCC (COP24) successfully adopted 19 decisions focusing on adaptation, loss and damage, climate finance, technology, capacity building, response measures, gender, as well as local community and indigenous peoples. At the same time, the fourteenth session of the Meeting of the Parties to the Kyoto Protocol (CMP14) managed to adopt 6 decisions, while the third part of the first session of the Meeting of the Parties to the Paris Agreement (CMA1.3) managed to adopt 19 decisions mainly focusing on the Paris Agreement Work Program (PAWP).

As directed by the Paris Agreement and its adoption decision, the acceptance of the CMA1.3 decisions are crucial to ensure effective implementation of the agreement after 2020. Decisions have been made for all articles mandated, yet the level of details and the nature of the

decisions are not all the same. The only decision which is of a totally different nature is the decision on Article 6 of the Paris Agreement. In spite of the long negotiations on the use of a cooperative approach, both market and non-market, the parties could not reach agreement on substantive matters. Therefore, the parties decided to agree to continue the process in 2019 using the two sets of documents produced during the session. They agreed to work hard to adopt relevant decisions on this matter at the second session of CMA in 2019.

Looking at those decisions made in Katowice, it is clear that the three conferences are interlinked. Several decisions made by COP24 are in fact interdependent with those under CMA1.3, especially those related to climate finance. This is also the case for the decision to foster an adaptation fund to serve the Paris Agreement, which was made by CMP14 and CMA1.3.

This shows that our effort to tackle climate change is basically a continuation of the United Nations Framework Convention on Climate Change (UNFCCC) initiated in 1992, which was then followed by the adoption of the Kyoto Protocol in 1997, and in 2015, the adoption of the Paris Agreement. With such a continuous process, it is clear that climate change has to be tackled globally through continuous and concerted efforts.



# Understanding the climate change challenge: Lessons from the Pacific

Professor Brendan Mackey  
Director, Griffith Climate Change Response Program, Griffith University

The Griffith Climate Change Response Program (GCCRP) leads Griffith University's research into climate change adaptation and mitigation. As climate change issues cut across many fields of study, research projects are multidisciplinary.

Our research in the Pacific is focussed on developing the approaches, information and tools needed to understand climate risks, the adaptation options available, and how this information can be used by governments, businesses and especially local communities.

Despite the publicity attracted by a small number of denialists, including some high profile politicians and business people, the majority of Australians accept the climate is rapidly changing due to additional greenhouse gases in the atmosphere from using fossil fuel—coal, oil and gas—for energy, and deforestation and degradation. Yet while this majority is convinced of the diagnosis, debate remains around the prognosis and hence the extent to which we face a climate emergency or just a very serious environmental problem. Climate change remains a political football in Australia and the potential for ongoing policy flip-flops means a strong and reliable policy framework to guide, incentivise and catalyse strong climate action in business and the community is lacking at the national level, though positive leadership is being shown by many of our state governments including Queensland.

The policy tide is turning, however, as with each passing season and year, new temperature records are broken, extreme weather events including heatwaves, drought and fires, take their toll, and flow-on impacts become more apparent. Perhaps the most telling sign

is that recognising and managing climate risks are now very much on the radar of the financial sector and are being mainstreamed into credit rating schemes, stock exchange reporting requirements and corporate board responsibilities.

In Australia's immediate surrounding region, however, and in particular the Indonesia-Melanesian Arc and wider Pacific community, the impacts of climate change and the need to respond are more deeply accepted and understood. This reflects the higher level of exposure and vulnerability of communities in developing countries. Small island developing states (SIDS), are particularly exposed and vulnerable given the large proportion of communities in sensitive coastal locations. Such are the risks to economies and communities, that climate change is recognised as a barrier to achieving the Sustainable Development Goals.

Understanding climate risks now and into the future is a complex task even in a data rich country like Australia, so a major challenge in developing countries, and in particular SIDS, is the need to ensure that the data and information needed for adaptation and resilience planning and decision making have (1) secure and sustainable storage, (2) connectivity to improve the capability of stakeholders to access data and information among portals, (3) are discoverable through proper meta-data descriptions and the like, and (4) that the data and tools are in a format that make them usable and reusable. Through the Pacific iClim Project, funded by the Australian Government Department of Foreign Affairs and Trade (DFAT), the GCCRP is working with the Secretariat for the Pacific Environment Program (SPREP) to develop and promote a regional approach

to Information Knowledge Management (IKM) for climate change. Since its inception, the iCLIM project has made significant steps towards improving the level of awareness, capacity and technical solutions required for effective climate change data management in the Pacific. The project commenced in March 2014, and in 2016 was funded for a second phase to December 2019. In addition to SPREP, GCCRP is working with seven Pacific countries to help build their IKM capacity build and improve their national data portals.

A rapidly changing climate accentuates existing issues and brings new hazards to coastal communities. Pacific communities have a high reliance on subsistence farming and fishing, making them heavily dependent on their local ecosystems. GCCRP's EcoAdapt Project aims to identify appropriate adaptation interventions in the coastal zone of Pacific island states and territories in the face of a rapidly changing climate and ongoing capital-intensive developments. In particular, we are investigating the advantages and limitations of ecosystem-based approaches compared to soft-engineering approaches that use natural processes and the more conventional hard-engineered solutions.

Coastal adaptations need to be evaluated in terms of their impact on ecosystems and biodiversity, the extent to which they disrupt natural processes, and the benefits they provide for the sustainable livelihoods of local communities, among other things. Partners for the EcoAdapt project include the University of the South Pacific – Emalus Campus, the Tafea Provincial Government and local communities on Tanna Island.

# Embracing global agreements

## Dr Amanda Katili Niode

Office of the Indonesian President's Special Envoy for Climate Change

The project on sustainable development and climate change between Griffith University and Universitas Indonesia is a joint collaboration encompassing two important global agreements.

Those agreements are the Sustainable Development Goals (SDG), aimed at ending poverty by 2030 and pursuing a sustainable future; and the Paris Agreement, designed to combat climate change, and unleash actions and investment towards a low carbon, resilient and sustainable future.

On the one hand, climate change influences key natural and human living conditions and thereby also the basis for social and economic development. While on the other hand, society's priorities on sustainable development influence both the greenhouse gas emissions that are causing climate change and the resulting vulnerabilities.

As stated in the Memorandum of Understanding between Griffith University and Universitas Indonesia, the scope of activities shall include, but are not limited to, high level dialogues, science to policy collaborative research,

collaborative capacity building projects, higher degree research, professional development, and pathways for international learning experiences.

Global problems require various entities to unite and to work effectively under waves of data as indicated by The Global Partnership for Sustainable Development Data. The alliance brings together governments, the private sector, and civil society organisations to use the data revolution in achieving the Sustainable Development Goals.

CAIPSDCC researchers should benefit from platforms already developed to enhance global efforts. One being the online Global Climate Action portal where non-party stakeholders from around the globe can display their commitments to act on climate change.

The portal is a tracking and reporting tool that recognises existing action and attracts new commitments. Presently it has recorded actions in 9378 cities, 126 regions, 2431 companies, 363 investors, 98 civil society organisations, 83 cooperative initiatives, and is growing.

An important aspect for CAIPSDCC researchers is their view on what is happening in other international arenas, such as the World Economic Forum, the international organisation for public-private cooperation. In an overview of its 2019 meeting, The World Economic Forum stated that "we are entering into a Fourth Industrial Revolution shaped by advanced technologies from the physical, digital and biological worlds that combine to create innovations at a speed and scale unparalleled in human history. Collectively, these transformations are changing how individuals, governments and companies relate to each other and the world at large. In short, we are fast approaching a new phase of global cooperation: Globalisation 4.0."

The success of CAIPSDCC depends on how its participants face national, regional and global challenges, amidst cultural differences. Addressing such challenges require strong leadership, honesty, and heartfelt communications between those involved in this exciting collaboration.



# Deforestation of primate habitat on Sumatra and adjacent islands



Jatna Supriatna, Asri A. Dwyahreni, Nurul Winarni, Sri Mariati and Chris Margules

The severe declines in forest cover on Sumatra and adjacent islands have been well-documented but that has not slowed the rate of forest loss. Here we present recent data on deforestation rates and primate distribution patterns to argue, yet again, for action to avert potential extinctions of Sumatran primates in the near future.

Maps of forest loss were constructed using geographic information systems and satellite imagery. Maps of primate distributions were estimated from published studies, museum records and expert opinion, and the two were overlaid on one another. The extent of deforestation in the provinces of Sumatra between 2000 and 2012 varied from 3.74 per cent (11,599.9 ha in Lampung)

to 49.85 per cent (1,844,804.3 ha in Riau), with the highest rates occurring in the provinces of Riau, Jambi, Bangka Belitung and South Sumatra.

During that time, six species lost 50 per cent or more of their forest habitat: the banded langur *presbytis femoralis* lost 82 per cent, the black-and-white langur *presbytis bicolor* lost 78 per cent, the black-crested Sumatran langur *presbytis melalophos* and the bangka slow loris *nycticebus bancanus* both lost 62 per cent, the lar gibbon *hylobates lar* lost 54 per cent, and the pale-thighed langur *presbytis siamensis* lost 50 per cent. Two species, the pagai langur *presbytis potenzi* and the pagai macaque *macaca pagensis*, both from the southern part of the Mentawai islands, are not represented

in national parks or protected areas at all, and a further five species are found in only one protected area.

The causes of deforestation are many and varied, but by far the leading causes are logging, followed by fire and/or conversion to plantations. Enforcement of existing regulations protecting primates, disentanglement of land claims and overlapping boundaries, a halt to logging in existing forests, a halt to road building through forests, clarification of how traditional adat law relates to protected areas, and the creation of new, enforceable laws protecting species from trade and exploitation will all be needed if Indonesia is to uphold the commitments to primate conservation that it has already made.

## Meet our researchers...



**Amanda Katili**

Office of the Indonesian President's Special Envoy for Climate Change

Dr Amanda Katili Niode is Head of the Expert Team at the Office of the President's Special Envoy on Climate Change in Indonesia, a founding member of the International Environmental Communication Association, and Manager of The Climate Reality Project Indonesia.

An environmental management specialist, educator and writer, Dr Katili completed an Executive Leadership Program at the School of Foreign Service, Georgetown University, a Leadership and Campaign Management Program at Yale University, and an Asia Leadership Program on Climate Change and Sustainable Development in Seoul, Korea and received a prestigious award from the Rockefeller Foundation as a Resident Policy Fellow at the Rockefeller Foundation's Bellagio Center in Italy.



**Jatna Supriatna**

Universitas Indonesia

Professor Jatna Supriatna is Chairman of the Research Center for Climate Change (RCCC), University of Indonesia and a Professor of Biology in the Faculty of Mathematics and Natural Sciences, Universitas Indonesia.

Professor Supriatna published 9 books mostly in the area of Indonesia's biodiversity and environment and more than 100 articles in international journals (Science, Nature, Conservation Biology, Primates, Evolution, Primate Conservation, Herpetologica, many others). Two of his books, *Biologi Konservasi* (Conservation Biology 2007) and *Menyelamatkan Alam Indonesia* (Saving of Indonesia's Nature 2009) are among the best sellers of environment books in Indonesia.



**Brendan Mackey**

Griffith University

Professor Brendan Mackey is Director of the Climate Change Response Program (GCCRP) at Griffith University. The GCCRP leads Griffith University's research into climate change adaptation and mitigation.

As climate change issues cut across many fields of study our research projects are transdisciplinary. The program brings together the wealth of Griffith research expertise from across the University, enabling climate change problems to be addressed in a comprehensive manner and often in conjunction with our international partners.

Professor Mackey has published over 200 scholarly articles and currently serves as a Coordinating Lead Author for the IPCC 6th Assessment Report.

# Planning for an Indonesian emissions trading scheme

Dr Rob Hales

Director, Griffith Centre for Sustainable Enterprise, Griffith University

Recently I met with Indonesian officials during the climate change conference, COP24 in Katowice Poland, to discuss the progress towards implementing an Indonesian emissions trading scheme (ETS) as part of the CAIPSDCC program. Officials indicated that the Indonesian government is moving towards implementing an emissions trading scheme with a pilot scheme to start in 2019.

The key to gaining political support for such a scheme is to ascertain the costs to the economy of implementing such a scheme. This is important for any country committing to such a scheme but has greater economic implications for developing countries which have a large focus on poverty reduction. Analysis of the

options for an ETS needs to be undertaken using the best modelling techniques.

Politically there are sensitivities to be considered. Experience from other countries indicate that vested interests seek to maintain the status quo (not wanting to introduce an ETS) and water down the schemes. This has the effect of decreasing the scheme's capacity to trade international carbon credits and thus making the scheme more costly from an overall national economic perspective.

CAIPSDCC seeks to contribute to the market readiness program of Indonesia. Further conversations with officials are planned to determine how Griffith researchers can assist in the analysis of options for market mechanisms.



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## Shaping tomorrow's environmental leaders

The level of awareness about climate change and its adverse impacts to various aspects of human life among Indonesians is still limited. Any attempt to increase the awareness level, especially for those who are most vulnerable, is equally important as mitigation and adaptation projects. Increased awareness can boost the success of the project's implementation and help accelerate the transformation to low-carbon lifestyles.

Young people are the ones who will face the greater risks of climate change and

have to take action in the future. They are also currently at a crossroad to choose a business-as-usual lifestyle or adopt a low-carbon one.

However, young people have the potential to be at the forefront of the movement by gaining comprehensive knowledge and spreading it to their peers. They are believed to be more enthusiastic for social and environmental issues than the previous generation and are equipped with information technology competence.

The Youth Leadership for Climate Change program was first launched in 2011. Currently this program has over 1500 alumni across Indonesia who are passionate about preserving the environment. Alumnus Ranitya Nurlita is now the Founder and Project Director of the ASEAN Reusable Bag Campaign, and also serves as the Program Manager for the Greenation Foundation. Another alumnus, Saraswati Siahaan, is currently completing a Master of Climate Change at the Australian National University.



## Featured publications

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Sandra L Berry and Brendan Mackey (2018) 'On modelling the relationship between vegetation greenness and water balance and land use change', *Scientific Reports*. 8. 10.1038/s41598-018-27139-0.

Adam F Both, Dane Westerdahl, Scott Fruin, Budi Haryanto and Julian D Marshall (2013) 'Exposure to carbon monoxide, fine particle mass, and ultrafine particle number in Jakarta, Indonesia: Effect of commute mode', *Science of the Total Environment*, 443, pp. 965-972.

Mehdi Hafezi, Oz Sahin, Rodney Stewart and Brendan Mackey (2018) 'Creating a novel multi-layered integrative climate change adaptation planning approach using a systematic literature review', *Sustainability*. 10. 4100. 10.3390/su10114100.

Mujiono Mujiono, Tito Latif Indra and Djoko Harmantyo (2017) 'Spatial analysis of deforestation and its impact on carbon emissions using FREL', *Advances in Social Science, Education and Humanities Research*, 79.

Edward Morgan, Johanna Nalau and Brendan Mackey (2018) 'Assessing the alignment of national-level adaptation plans to the Paris Agreement', *Environmental Science and Policy*. 10.1016/j.envsci.2018.10.012.

Ahmad Dwi Setyawan, Jatna Supriatna, Nisyawati Nisyawati, Sutarno Sutarno and Ilyas Nursamsi (2018) 'Predicting impacts of future climate change on the distribution of the widespread selaginellas (*Selaginella ciliaris* and *S. plana*)', *Southeast Asia. Biodiversitas Journal of Biological Diversity*, 19(5), pp.1960-1977.

Jatna Supriatna (2018) 'Biodiversity indexes: Value and evaluation purposes', *E3S Web of Conferences*, 48. 01001. 10.1051/e3sconf/20184801001.

Anne Tiernan, Lex Drennan, Johanna Nalau, Esther Onyango, Lochlan Morrissey and Brendan Mackey (2018) 'A review of themes in disaster resilience literature and international practice since 2012', *Policy Design and Practice*. pp. 1-22. 10.1080/25741292.2018.1507240.



## Upcoming events

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### Inaugural Witoelar Dialogue

(Closed workshop)

*Deepening regional cooperation on sustainability and climate change - An agenda for the future*

Thursday 7 March 2019

Brisbane, Australia

If you would like to keep up-to-date with future CAIPSDCC events, visit our website at:

[griffith.edu.au/collaborative-australia-indonesia-program](http://griffith.edu.au/collaborative-australia-indonesia-program)

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