

# Climate and Development Outlook

Stories of change from CDKN



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**Climate and Development Knowledge Network**

Helping developing countries to design and deliver climate compatible development

## Indonesia Special Edition

### **INDONESIA: OPPORTUNITIES FOR CLIMATE ACTION IN A COMPLEX MARITIME LANDSCAPE**

BY **MOCHAMAD INDRAWAN**, CDKN

Last year, Indonesia's Disaster Management Agency recorded extensive hydro-meteorological disasters, such as floods, droughts, erosion, extreme tides, typhoons and forest fires. These accounted for 70% of all disasters in Indonesia. Between 1994 and 2013 alone more than 1.6 million citizens were affected, and such disasters have caused 6,000 deaths, 230,000 injuries and the loss of more than 450,000 homes.

Communities over Indonesia's many islands and archipelagoes have been forced to adapt – and very quickly too. The Togean islands, part of Coral Triangle (and known sometimes as the 'Amazon of the Seas') are rich in reefs. Yet, in the face of climate change, fishing is coming under greater threat. Greenpeace Indonesia reports that over the last 5–10 years, catches have dwindled from 500 kg to 100 kg for each fishing trip. And – although the active and lush volcanic islands nestled amidst this marine wonder world are supporting a growing tourist industry – lack of electricity hampers local economic growth.

CDKN's contribution to climate compatible development in Indonesia is focused on

results at the province level and is firmly rooted in the country's evolving national policies.

The country's current medium-term development plan (2015–2019) ensures that climate change is positioned as a cross-sectoral issue. Measures are also underway to reconcile climate change and the post-2015 Sustainable Development Goals.

After four years of Indonesia's national mitigation plan (known in Indonesia by its acronym RAN-GRK), and its derivative 33 province action plans, Indonesia has now prepared its Intended Nationally Determined Contribution (INDC) for the global climate negotiations – this is geared towards the land-based energy and waste sectors. For Indonesia, the INDC process has involved adapting and fine-tuning the RAN-GRK as the nation's existing mitigation programme. Encouragingly, the targets and parameters have been objectively set by mathematical modelling, with the help of the country's own academics. (For Indonesia's INDC, see <http://www4.unfccc.int/submissions/INDC/>)

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### **Indonesia's Climate and Development**

Protecting the environment is not easy in a vast country like Indonesia: it is the world's fourth most populous country and stretches over 17,000 islands and three time zones. It has more than 70,000 villages, administered through more than 6,500 sub-districts, 500 districts and municipalities, and 35 provinces. Indonesia faces numerous environmental problems but has also taken an ambitious attitude to tackling climate change.

In fact, its ambitions have attracted international attention: it has a greenhouse gas emissions reductions target of 26%–41% (the higher figure is dependent on international action) by 2020, against business-as-usual, and a high-profile moratorium on logging licenses in primary forests and those on peatlands. A national climate change mitigation programme is in place. Indonesia is one of the first countries in Asia, along with Bangladesh, to establish a national fund to receive climate finance from overseas: the Indonesia Climate Change Trust Fund.

CDKN is convening decision-makers to test and explore the concept of climate-compatible development, particularly in the energy sector and at province, district and city level. We are extending technical assistance, knowledge and brokering support for a variety of climate change initiatives in Indonesia.



## GUEST COLUMN

# Accounting for mitigation actions in the Indonesian energy sector

**XANDER V. TILBURG AND LACHLAN CAMERON, ENERGY CENTRE OF THE NETHERLANDS**

Energy demand in Indonesia is expected to double over the next 10 years, with fossil fuel production and consumption dominating the Indonesian energy sector for the foreseeable future. However, there are strong domestic drivers for increasing the share of new and renewable energy sources, which currently make up 6% of the energy mix.

Shifting to cleaner and more efficient energy strategies requires proper planning and coordination. Governments can promote climate mitigation in the energy sector through: policies

and regulations, government-run programmes and public procurement, direct investments, and the development and implementation of internationally supported Nationally Appropriate Mitigation Actions (NAMAs).

Mitigation actions related to energy are coordinated and implemented across different ministries, institutions and state-owned companies. In Indonesia, the Ministry of Energy and Mineral Resources plays a pivotal role in identifying and providing technical and financial support for mitigation in the energy sector.

To allow the Ministry to track and provide consistent and timely information on all energy-related mitigation actions, a Common Accounting Framework for Energy (CAFE) is being developed by experts at the Energy Research Centre of the Netherlands (ECN), in collaboration with the Ministry's own experts and supported by CDKN. The framework uses a common set of indicators to records information across different kinds of energy actions.

Once the framework has been designed, ECN and the Ministry will pilot it with some energy efficiency activities, and then expand it to other activities. The project will provide an overview of current and planned actions that will be useful for both domestic purposes (for example, comparing current activities to longer term goals such as Indonesia's Medium Term Development Plan) and also for international uses (such as tracking progress against Indonesia's INDC).



**Nationally Appropriate Mitigation Actions (NAMAs)** refer to any action that reduces emissions in developing countries and is prepared under the umbrella of a national governmental initiative. They can be policies directed at transformational change within an economic sector, or actions across sectors for a broader national focus. NAMAs are supported and enabled by technology, financing and capacity building and are aimed at achieving a reduction in emissions relative to 'business as usual' emissions in 2020.

**Source:** [www.unfccc.int](http://www.unfccc.int)

## Supporting renewable energy in Indonesia through NAMAs

In Indonesia's West Nusa Tenggara province, a CDKN-funded initiative by ECN and government partners has resulted in a NAMA concept for small- and medium-scale renewable energy initiatives (of 1–10 megawatts (MW) in size). Three proposed NAMAs will support independent power producers to invest in Indonesia's rapidly growing electricity sector – first, a clearing house for independent power producers, second, a grid compensation mechanism, and third, a choice of financial instruments that aim to improve access to appropriate finance.

Since project completion in 2014, the Ministry of Energy and Mineral Resources has presented the NAMA concept in other government fora

such as the Indonesian Climate Change Trust Fund NAMAs Investment Summit in September 2014 and accompanying prospectus, and listed the NAMA in the Indonesian NAMA Framework. ECN is taking the NAMA concept forwards with concerned ministries and partners and recently formed a working group together with the Indonesian Renewable Energy Association (METI) and individual private developers to continue to present policy solutions to the Ministry and lobby for support.





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### Energy efficient electric motors in Indonesia

Everything that turns and moves in this world is driven by a motor, most of them electric; almost half of the world's electricity consumption flows to an electric motor. Similarly in Indonesia, more than 60% of electricity demand in the industrial and commercial sectors comes from electric motors, many of which are older or lower efficiency designs, often used at fixed speeds that waste power. Many countries have already achieved large power and cost savings by implementing energy efficiency policies. Indonesia is following suit.

The Ministry for Energy and Mineral Resources is currently preparing minimum energy performance standards for electric motors in consultation with stakeholders. With CDKN support, ECN is working with the Directorate of Energy Conservation in the Ministry to develop a NAMA related to introducing minimum energy performance standards for electric motor systems. Such NAMAs can reduce energy demand from the industrial and commercial sectors and thereby reduce subsidies, as well as improve the revenues of Indonesian companies. The team is also exploring options for raising awareness of the new standards among manufacturers, providing technical support to them, and enforcing and monitoring uptake.

Infrastructure developments, and how to green them, are foremost on the agenda. There is a growing awareness that since building infrastructure is extremely costly, public-private partnerships with national and international investors will be needed, and that international investments will be more viable when 'greened'. Therefore, it is imperative to jump-start the greening of infrastructure through policy reforms, such as better spatial planning, increased support for renewable energy and energy efficiency. These in turn call for enhanced transfer of clean technologies.

On the agriculture, forest and land use change front, Indonesia's larger companies are beginning to commit to greater sustainability, with some plantations aiming for zero emissions; a few are proactively pursuing ecosystem restoration. Indonesia has also renewed a two-year moratorium on new logging licenses. At the same time, the country has a forestry programme that will gradually help clarify overlapping forest use and tenure claims. At the policy level, measures are in place to prepare thematic maps to ensure coordination between different land use designations, and thereby establish vertical and horizontal coordination that is unprecedented in the country.

The most recent trend is to go beyond public-private partnership (PPP). Whereas PPP is crucial, the fourth P (people) is now beginning to receive greater recognition. Land-based mitigation already means closer partnership between corporations and non-government organisations (NGOs), and better recognition for the tenure rights of Indonesia's indigenous communities.

### SUPPORT STRATEGIES FOR INDONESIA

Indonesia is ranked sixth in the world for greenhouse gas emissions, with land-based activities currently accounting for most of these. A 2010 report by the National Council on Climate Change estimated that 85% of Indonesia's greenhouse gas emissions originated from land-use activities; including 37% due to deforestation and 27% due to peat fires. More alarmingly, due to current economic growth and increasing energy demand, by 2020 the land-use sector's emission may be superseded by that from the energy sector, especially from the transport sector.

How does CDKN hope to influence development policy and practice in Indonesia? The CDKN strategy in Indonesia is focused on climate finance, energy efficiency and renewable energy. Central to these are our demand-led approach: we respond to requests for technical assistance from the Ministry of Planning and the Ministry for Energy and Mineral Resources.

On climate finance, we have supported the Indonesia Climate Change Trust Fund to build its institutional capacity across a range of functions including operational and fiduciary standards, and communications and outreach. The grants it has disbursed to date add value by encouraging coordination among government ministries and agencies and civil society groups.

In Lombok island, West Nusa Tenggara Province, a CDKN-supported pilot NAMA focuses on micro-hydropower and holds much promise. The province has the potential for 1.8 gigawatts (GW) of small- and medium-scale

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# The paradigm shift needed to tap the Green Climate Fund

TITI SOENTORO, AKSI!



The Green Climate Fund (GCF) has received pledges of approximately US\$10.4 billion from 32 countries in its initial resource mobilisation phase. The Fund celebrated this milestone as a move towards "... practical and proportionate steps to take action on climate change while safeguarding economic growth..." and helping "... developing countries to also ensure sustainability of their economic growth path". Both developed and developing countries have high expectations. So, can the GCF, as a financial mechanism under the United Nations Framework Convention on Climate Change (UNFCCC), contribute to a paradigm shift towards low-emission and climate-resilient development pathways in developing countries?

The required paradigm shift towards sustainable development must be one driven by the needs of the people. It should be based

less on the extraction of natural resources, contribute to a just trade regime, and involve more government oversight particularly in the provision of basic essential services like water, electricity, health and education, and food sovereignty.

While policy-makers are open to ideas and dialogue, there are no clearly defined avenues for participation for the wide range of subnational stakeholders in climate finance related decision-making as yet. Organisations working locally with farmers, women's groups, and communities on climate change solutions are not quite ready to submit proposals that meet GCF requirements. CDKN has been working closely with the NGO Both ENDS and their southern partners to promote accessibility to the GCF, and increase the impact of southern voices in GCF advocacy.

## Research to explore benefits of, and options for, green energy policies

Countries opting for green growth recognise the need for a new way of doing business; research led by the Clingendael Institute, and funded by CDKN, is doing just that by outlining sustainable green growth strategies for decision-makers in Indonesia, Colombia and Kenya.

Restructuring a country's energy supply away from polluting sources such as coal and oil or unsustainable fuelwood, has many benefits – ranging from improved public health to reduced traffic congestion and increased economic productivity ('co-benefits' are well documented by the Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment

Report). Energy security too is considered a win in green energy policies: moving towards renewable energy, almost always domestically sourced, can reduce a country's dependency on imported fossil fuels, reducing dependency on volatile prices.

Clingendael and its research partners in Indonesia, including ECN and Oxford Policy Management, are exploring how policy choices can create the incentives for diverse groups to embrace a green economy. Input from local institutes will assist in igniting domestic debate on green growth options, as well as how to manage the winners and losers.

*"Assistance from a project funded by CDKN and implemented through ECN at Lombok Island and North Sumatera Province has been a helpful initial initiative to develop renewable energy in an effort to reduce emissions. The CDKN-funded project has been successful in triggering new investment for renewable energy."*

**SYAMSIDAR THAMRIN**, MINISTRY OF PLANNING, DEPUTY DIRECTOR, DIRECTORATE OF ENVIRONMENT, GOVERNMENT OF INDONESIA



## Finding the finance for climate compatible development in Asian cities

While capitals and megacities receive much attention, emissions growth and vulnerability are as pronounced in second-tier cities, with rates of population growth often higher, making climate compatible development an absolute necessity. However, access to necessary funding presents a problem. While financial needs can never be precisely known, international funding schemes currently only meet a small portion of the total financing needed to support climate compatible development in cities. The GCF now heralds new opportunities. The “design and planning of cities to support mitigation and adaptation” is one of its focal areas.

With case studies in India, Indonesia and the Philippines, CDKN-funded research is assessing the climate finance needs and gaps for climate compatible development in second-tier cities and exploring how available financial opportunities can be harnessed to meet those climate finance needs. Led by Germanwatch, the research seeks to develop recommendations for making GCF funding accessible to cities, through the creation of Urban Implementing Entities under the GCF, or using GCF resources to incentivise the deployment of national/subnational resources, such as revenues from fees, local taxes or municipal bonds, to support urban climate compatible development projects.

In Indonesia, the research focuses on the city of Kupang and involves the Institute for Essential Service Reform, a highly-regarded national partner, which engages strategically with Indonesian innovators from districts and municipalities.



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renewable energy but only one tenth of that capacity is being tapped. The region desperately needs such development: only 32% of West Nusa Tenggara’s 8 million residents have access to electricity.

CDKN’s experience in renewable energy planning at the subnational level brought home the stark reality of the coordination required in this country with more than 500 districts and municipalities. Tackling coordination of one government directorate alone has proved to be challenging, but ours has been a strategic intervention, especially considering the cost-effectiveness of developing a common accounting framework for NAMA projects in Indonesia.

We will continue to take such a strategic approach to our support where we can: contributing to pilot projects that yield lessons for elsewhere in this vast, archipelago nation. **Read Mochamad’s full article on climate change policy and action in Indonesia on [www.cdkn.org/author/mochamad-indrawan](http://www.cdkn.org/author/mochamad-indrawan).**

## TACKLING DEFORESTATION FOR WATER, ENERGY AND FOOD SECURITY

Gunung Leuser is a biosphere reserve and national park covering a vast area of tropical rainforest in northern Sumatra, and is home to a range of rich ecosystems: lowland evergreen dipterocarp forest, lower and upper montane rain forest, peat swamp forest, forest over limestone, sub-alpine meadows and heathlands, freshwater lakes and rivers, and sulphur mineral pools.

The national park is home to a rich diversity of fauna, ranging from mammals, birds, reptiles, amphibians to fish and invertebrates. Important species that form the ecosystem of Gunung Leuser include Sumatra elephants, tigers, rhinoceros and

orangutans. There are also more than 4,000 plant species found in the park, including many with medicinal properties. As a natural laboratory, Gunung Leuser is important for conservation, education, research by local and foreign scientists and ecotourism.

Despite significant pledges to reduce emissions from deforestation, including a landmark bilateral agreement with Norway for up to US\$1 billion of performance-based payments to achieve emissions reductions, Indonesia has one of the highest deforestation rates in the world. This is the result of the continued business-as-usual approach to resource use for economic development. However, by eroding vital watershed services, deforestation threatens the sustainability of key economic activities, such as agricultural productivity. These threats are likely to multiply, along with the effects of climate change.

CDKN-funded research is assessing trade-offs in the use of natural resources for energy, food and water for direct human use on the edge of the Gunung Leuser National Park – and up to district and national level. More than four million people live within or adjacent to the park, mostly farmers dependent on the protection of this park for their subsistence. Paddy fields, mixed gardens, and small-scale and medium estates of rubber and oil-palm receive a consistent water supply from this park. The project will, for example, assess the role of watershed services in supporting oil palm production, which itself requires land, driving



deforestation and eroding these same ecosystem services. Working with local stakeholders, the project seeks to identify resource trade-offs, future development goals and pathways to achieve these goals whilst reducing deforestation and supporting water, energy and food security outcomes.

## RESOURCES

On our website you can read:

- Details of CDKN's programme in Indonesia <http://cdkn.org/regions/indonesia>
- The IPCC's Fifth Assessment Report: What's in it for Small Island Developing States <http://cdkn.org/ar5-toolkit/ar5-sids/>

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