

# CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT



UNDP is supporting Indonesia in maintaining and managing the country's rich environment, including Indonesia's vast marine and terrestrial biodiversity and energy resources. In the context of the important the International Climate Change Negotiations, UNDP is working for a sustainable environment and development policy, which integrates climate change concerns and at the same time provide poverty reduction and human development.


## Climate change, an overall concern

Climate change is a reality and urgent actions on climate change adaptation and mitigation are required. With an over 80,000 km long cost line and 17,000 islands, many people in Indonesia are depending on climate sensitive sectors such as agriculture, forestry and coastal community economies. Consequently, Indonesia is especially vulnerable to climate change, with the severe impacts of a changing climate already being felt in various parts of the country. Changes include increases in ocean and air temperatures, a rise in sea level, shifting precipitation patterns and stronger and more frequent extreme weather. Moreover, further sea rise will lead to flooding of coastal areas and small islands. Unreasonably, it is the poor and vulnerable communities that are being hardest hit by the changing climate. Climate change is thus directly threatening Indonesia's recent achievements on poverty reduction and other Millennium Development Goals (MDGs).

On the other hand, Indonesia is one of the world's largest emitter of Green House Gasses (GHGs), with the largest emissions originating from deforestation and land degradation. These practices not only cause climate change, but also threaten livelihoods, biodiversity, peace and stability. Given the implications of climate change for Indonesia and vice versa, the Indonesia UNDP Country Office considers climate change a top priority issue and is engaging closely with the Government on various fronts. Concrete Climate Change action is crucial if the Government is going to reach Indonesia's ambitious emission reduction targets. UNDP is therefore pursuing climate change adaptation and mitigation in the context of an environmentally sound and sustainable development framework.

In addition to working with advocacy, policy support, and financial mechanisms on climate change issues, UNDP Indonesia also works more directly with Sustainable Energy and Natural Resources Management.

# Advocacy, Policy Support and Financial Mechanisms on Climate Change



UNDP is working through national and local policy support, piloting and advocacy work on the grassroots level, as well as financial mechanisms, for both mitigation and adaptation to climate change in Indonesia.

## **Second National Communication to the UNFCCC**

UNDP supports the Government of Indonesia in preparing the Second National Communication (SNC) to the UN Framework Convention on Climate Change (UNFCCC). The SNC is a highly strategic document, including how the Government can reduce Indonesia's GHG emissions with 26% by 2020, as announced by the President as well as a full assessment of national programs for mitigation and adaptation to climate change. UNDP is facilitating a sound consultation process, in addition to ensuring that GHG emissions from each key sector are documented and agreed upon. The SNC report was launched during the National Dialogue on Climate Change on the 23rd of November 2009.

## **UN-REDD: Reducing Emissions from Deforestation**

Indonesia holds the world's third largest tropical rainforest, but has the world's second largest deforestation rate. In fact, approximately 70% of Indonesia's GHG emissions are related to land degradation, inappropriate land uses, and land conversion. UNDP is therefore assisting Indonesia in preparing for large scale reduction of GHG emissions through the UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD Programme). UN-REDD is a collaboration initiative between FAO, UNDP and UNEP, funded by Norway, aiming to assist tropical forest countries in establishing a fair, equitable and transparent regime for reducing emissions from deforestation and forest degradation. Core initiatives include national and local capacity and consensus building on the REDD architecture and establishment of Measurement, Assessment, Reporting and Verification system.

## **Building local capacity for climate change adaptation**

One example of UNDP's local climate change work is UNDP's focus on the vulnerable Aceh province. UNDP will, in cooperation with the International Centre for Aceh and Indian Ocean Studies (ICAIOS) and supported by the Ford Foundation, train local researchers in the Indonesian province

of Aceh to become experts on climate risk management, including adaptation and mitigation in relation to poverty. This thorough training will enable the researchers to provide information and policy advice on climate change and poverty to the local government, as well as map the future challenges of Aceh in relation to these issues. The aim is to strengthen the local government's capacity to develop environmentally sound and sustainable policies in a changing climate.

## **Indonesia Climate Change Trust Fund (ICCTF)**

Effective financial mechanisms are critical in order to attract resources on climate change mitigation and adaptation. Indonesia is currently in the process of operationalizing the 'Indonesia Climate Change Trust Fund' (ICCTF), a Multi-Donor Trust Fund (MDTF) intended to fund climate change initiatives in Indonesia. The ICCTF is, in fact, the first nationally owned, led and administered MDTF in Indonesia. UNDP has been appointed as the transitional fund manager for ICCTF, and assists the Government in the operationalization of the fund. Several donors are already committed to contribute to ICCTF, such as DFID, AusAID and Norway.

## **Climate benefits through Ozone Layer Protection**

UNDP has been the lead agency in assisting Indonesia in ratifying and implementing the Montreal Protocol, which concerns the reduction and phasing out of substances that both threaten the ozone layer and/or cause climate change. The aim of an elimination of chlorofluorocarbons (CFCs) is particularly important, and notably the Government of Indonesia banned all CFC imports from January 2008. The reduction and phasing out of hazardous and toxic substances from industrial pollution is an equally important aim. UNDP is additionally on track to generate large scale GHG emission reductions from the private sector with over 300 private companies involved in the Montreal Protocol project. UNDP has together with UNIDO and the World Bank reduced approximately 50 000 000 CO<sub>2</sub> equivalent (GWP tons) emissions since 2003. In the future, the project will reduce approximately 4000 MT Hydrofluorocarbons (HFCs), substances that can damage the ozone layer and cause climate change.

# Sustainable Energy

In 2008, the electrification rate in Indonesia was only 65% in average among provinces, making access to new energy an important development goal. It is however crucial that the new energy is sustainable, meaning that it is clean and renewable, in order to address both mitigation and adaptation to climate change.

Photo: MDGs Photo Contest finalist 2008

## **Rural development with renewable energy**

UNDP is, in cooperation with the Indonesian Government, implementing a number of community managed climate friendly microhydro power projects throughout Indonesia. The aim is to promote increased use of microhydro technology in both small-medium enterprises and community-based applications. Sites across remote Indonesia are being particularly addressed in order to improve rural electrification and local livelihoods. Until October 2009, the project had trained 344 microhydro stakeholders nationwide thus stimulating further implementation of new microhydro power plants, such as provincial government's plan to install 200 microhydro in East Java. To date, the project has been able to reduce 280 ktons CO<sub>2</sub>eq out of 304 ktonnes CO<sub>2</sub>eq as targeted by the end of next year.

### **'SWITCH to BIOGAS'**

Dairy farming has acted as a lift out of poverty for many farmers in East Java. However, current practices of dealing with dairy cattle manure is a significant source of methane emissions, contributing to climate change. UNDP's biogas project aims to improve technology and accessibility of biogas units and sludge management, especially for small-scale farmers. UNDP will develop and test sustainable and durable biogas units together with improved sludge management in pilot provinces. A pro-poor financing scheme for biogas will further be developed through broad stakeholder participation. This will provide villagers with affordable renewable energy while reducing GHG emissions and improving environmental practices. Furthermore, climate change adaptation is an integrated part of the project.

## **Energy Efficiency Standards and Labeling**

A recent regional initiative for sustainable energy use is the BRESL programme, aiming to enable consumers to easily identify energy efficient household appliances through a national labeling scheme. Since Indonesia has no existing consumer oriented guidance or labeling on energy efficient appliances, UNDP is assisting the Government to set up a standardization and labeling programme, so that consumers can easily choose energy efficient home appliances. Overall, the BRESL regional project will reduce carbon emissions by an estimated 23.4 million metric tons (MMT) per year by the end of the project.

## **Reducing CO<sub>2</sub> emissions by effective Micro turbine Co-generation Technology**

Indonesia's new national energy policy encourages increased use of the country's vast natural gas resources. UNDP is in this context working on the MCTAP (Micro turbine Co-generation Technology Application Programme) programme, which is promoting the utilization of natural gas based power generation, together with co-generation technology. Micro turbines generate electricity with only 65 percent of the CO<sub>2</sub> emissions of a conventional system. UNDP is therefore assisting Indonesia in promoting co-generation technology for small to medium sized industries. By the end of the project, MCTAP targets to stimulate 200 MW microturbine cogeneration installations, which means saving 3,20 BOE of energy and reducing 1.5 million tones CO<sub>2</sub>eq.

# Sustainable Natural Resource Management

Finally, capacitating communities and local governments to manage natural resources in an efficient and equitable manner greatly increases the resilience of the poor against the potential effects of climate change.

## *Helping the climate through strengthening community-based forest and watershed management*

This project is designed to enhance and upscale the Government's programmes on Community-Based Forest and Watershed Management. UNDP is working to improve forest conditions and degraded land, thus contributing significantly to climate change mitigation, while empowering community involvement in forest and watershed management. This is done by addressing the inequitable distribution of benefits from forest resources and by developing models of community based watershed management. The initiative will take place in six provinces in Sumatra, Java, Sulawesi, Lombok and the Timor islands. The most successful management models and practices will later be replicated in other areas.

## *Reducing CO2 emissions through sustainable local resource management*

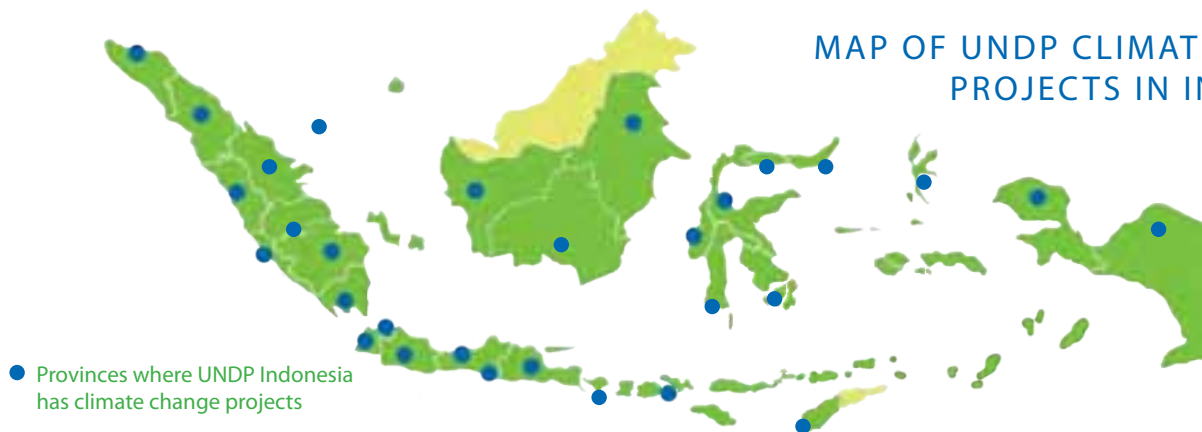
UNDP is through the GEF Small Grants Programme assisting local communities to play a leading role in finding local solutions to sustainable natural resource management. Community-generated knowledge, which can provide innovative approaches to environmental conservation, is now filtering up to policy makers, helping to strengthen national efforts to promote sustainable development. Support to

community-based freshwater, coastal and marine resource restoration and management, and assistance to community-based renewable energy projects are particularly important parts of the project. UNDP Indonesia has through this initiative supported more than 30 projects related to climate change.

## *Developing a sustainable management of marine resources in a context of climate change*

The tropical Arafura and Timor Seas (ATS) is a region extremely rich in marine resources, being part of the Coral Triangle zone considered to have the highest marine biodiversity in the world. The region sustains several valuable transboundary fish stocks that provide livelihoods for millions of people in the region. A serious decline of the marine environment in the ATS region is however taking place, primarily as a result of overexploitation of fisheries, in addition to climatic stress. As the ocean resources are crucial for development of Indonesia, UNDP contributed substantially to the World Ocean Conference (WOC) held in Manado in May 2009. Resulting in the Manado Ocean Declaration, WOC agreed to push ocean issues at the agenda of the COP15 in Copenhagen. UNDP is through this project assisting the development of an integrated, cooperative, sustainable, ecosystem-based management of the marine resources shared by all the countries in the ATS region. The project is an important initiative in the work of linking a sustainable management of the marine resources to mitigation and adaptation to climate change.

## MAP OF UNDP CLIMATE CHANGE PROJECTS IN INDONESIA



For more information on UNDP's work on Climate Change, Sustainable Energy and Natural Resource Management, see: <http://www.undp.or.id/environment>

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