CLIMATE IN FOCUS

A Newsletter from the Nordic Development Fund

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Photo: Sam Oakes, Alamy

Major investments in road improvement are urgently needed in rural regions of Lao PDR.

Branching out into mixed finance

NDF's contributions to a recently launched road improvement project in Lao PDR represent a significant milestone in terms of the diversity of financial instruments to be used by NDF.

"The ground-breaking aspect of this joint NDF-World Bank project for us is that it involves the first NDF loan issued under our climate mandate, and the first time ever that NDF has used a mix of grant and loan funding from its own resources," explains NDF's Procurement Specialist **Erik Holmqvist**.

Holmqvist explains that the grant portion of the NDF funding, amounting to EUR 5 million, will be used to map out the project activities, initiate better road design and maintenance standards, and build up capacity for road management; while a parallel EUR 6 million loan will be used to fund civil works in the six project regions in Lao PDR.

"The project should enable us to hit the ground running by immediately realising the new road standards."

"In this way we believe that in addition to building up standards, we can hit the ground running by immediately realising the new standards, utilising the capacity built up through the project," he says. "Actual project implementation by the Lao Ministry of Public Works and Transport is due to start by mid-2017."

As a landlocked country with poorly navigable rivers and an extremely limited rail network, Lao PDR is highly dependent on roads for the transportation of goods and people. The likelihood of more frequent extreme weather events means that road construction and maintenance must be upgraded to ensure people's access to essential services, and reduce the need for expensive and disruptive emergency repairs.

The project aims to rapidly improve the condition of regional roads in selected provinces, and make them more resilient to forecasted climate impacts. "If the new standards and methods tested in the six pilot regions prove successful, they may then be rolled out nationwide," adds Holmqvist.

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Focusing on real results

To ensure that financed activities have the desired impacts, NDF is increasingly focusing on the practical outcomes of supported projects. Monitoring results closely helps NDF to learn for the future, while also improving accountability.

"It's very important for NDF to make sure that the activities we finance are relevant for the target countries and have the desired impacts," says NDF's Deputy Managing Director **Leena Klossner**. "The key to this process is to focus on results on the ground by setting realistic, monitorable, time-bound and preferably quantitative targets, together with related progress indicators."

NDF's results-based management framework was expanded in late 2016 to meet these goals. The new approach goes beyond screening, monitoring and evaluation, by adding tools including a new set of indicators describing results at the level of the whole institution. These indicators reflect NDF's desire to support projects that will generate demonstrable climate-related benefits in targeted countries, while also promoting innovation, private sector development and gender mainstreaming.

"The new indicators will enable us to profile how well NDF is performing with regard to our strategy, where six main thematic areas have been identified in addition to core principles on climate change and development," explains Klossner. "This also helps us to build relevant indicators into the results frameworks of individual projects, further sharpening our strategic focus."

NDF's results-based management framework also includes guidelines for project identification and screening with regard to climate change and development goals; a project performance rating system that enables ongoing projects to be revised as necessary; and detailed project evaluations.

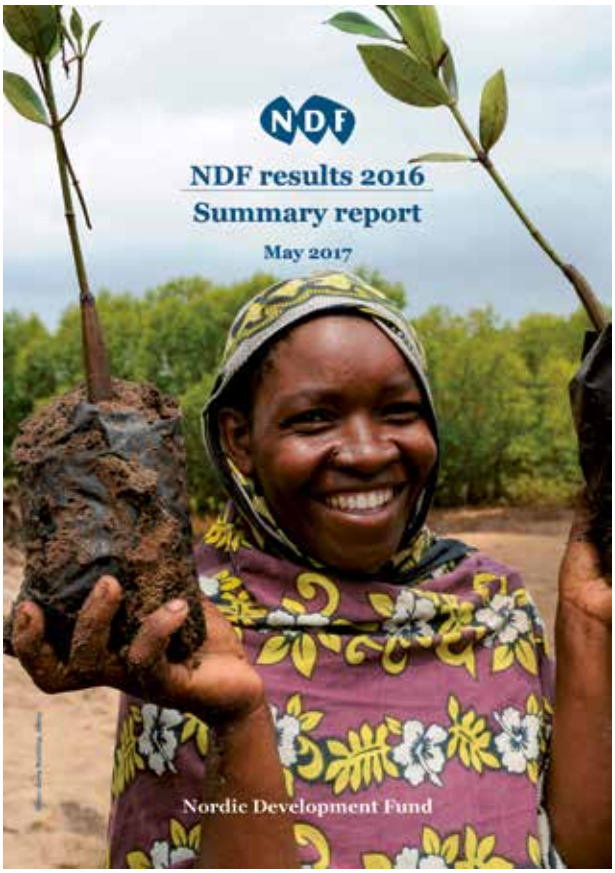

Photo: Joerg Boethling, Alamy

NDF's results from 2016 have been compiled and summarised in a new report, available on NDF's website.

Klossner emphasises that the new framework and institutional indicators will help NDF to compile, report and publicise results more effectively. "For an institution like NDF, it's important to remember that measuring results often requires close collaboration with our co-financing partners," she adds.

100 up!

In June 2017 NDF reached a major milestone by unveiling the 100th project that the fund has financed since shifting to a climate-related mandate in 2009.

Addressing environmental and social impacts

In spring 2017 NDF adopted a new environmental and social policy coupled with related guidelines, primarily to ensure that any social and environmental risks are duly identified and then mitigated during projects. "In future, however, we may also use this policy increasingly as a carrot rather than a stick, to help project developers realise potential additional benefits by making projects more environmentally and socially sustainable," explains NDF's Deputy Managing Director **Leena Klossner**. "This could further enhance the practical outcomes of NDF's projects."

Photo: TGDC

Surveyors taking surface readings to assess a potential geothermal field in Tanzania

Exploring East Africa's geothermal potential

An NDF-backed project is applying Icelandic and international expertise to explore a valuable subterranean source of renewable energy.

The volcanic rift valley region of East Africa is a hotbed of geothermal energy potential. More than a quarter of Kenya's electricity supply is already geothermal, but other countries are only beginning to tap into this valuable local resource, which could make great contributions to their energy mix – and their wider economic development.

"One key bottleneck has been obtaining funding for exploration drilling, but there's also a great need for capacity building and knowledge transfer. This is where a country like Iceland, with huge experience in geothermal energy, can especially help," explains **Davíð Bjarnason** of Iceland's Ministry for Foreign Affairs (MFA-ICEIDA).

Through the project more than 300 local trainees have so far attended geothermal resource exploration and drilling courses run by the United Nations University's Geothermal Training Programme (UNU-GTP) in East Africa; while project funds have also enabled 5 additional students from Ethiopia, Rwanda and Djibouti to receive more extensive training at UNU-GTP in Iceland.

Ten geothermal fields have also been surveyed on the ground by local professionals and trainees, together with international experts. "These geological, geochemical and geophysical surface exploration studies have revealed considerable potential particularly in the Eastern Rift Valley region from Eritrea through Ethiopia and Djibouti to Kenya and Tanzania," adds Bjarnason.

Kato Kabaka, Acting General Manager of the Tanzania Geothermal Development Company (TGDC), sees geothermal energy as a reliable local energy source preferable to fossil fuels or weather-dependent hydroelectricity. "The lack of reliable access to affordable electricity is a major impediment to growth and development in countries like Tanzania. Developing our geothermal potential can generate sustainable income and employment in rural areas, as well as electricity," he says.

Kabaka feels that the current project is well-timed. "Support from NDF and Iceland in terms of capacity building, training to improve our own professionals' skills, the acquisition of essential equipment, and the provision of external expertise has already enabled Tanzania to complete the first exploratory phase of one promising geothermal project at Ngozi, and exploration of two other fields is under way. We expect it will ultimately help us to build up sustainable local capacity to assess potential sites and get drilling projects into funding pipelines," he explains.

Tanzania hopes to start generating geothermal energy by 2020 and reach a target capacity of 200 MW by 2025. This amounts to about 16% of Tanzania's current generating capacity, in a country where only about a third of all households are connected to electricity grids.

Kabaka hopes that international backers will continue to help by building up capacity and seeing projects through to the test drilling stage until East Africa's geothermal industry takes off. "Well-planned demonstration projects can win the confidence of investors, developers and local communities for sustainable geothermal developments," he says.

One of the longer-term objectives behind the current project is to build up capacity towards the establishment of a regional geothermal training centre in Kenya.

Promoting climate resilience across Africa

NDF is among the financial backers behind the new Africa Climate Resilient Investment Facility (AFRI-RES), which aims to ensure that future investments in Africa's infrastructure will be resilient to the impacts of climate change.

AFRI-RES particularly aims to enhance the capacities of governments, businesses and regional institutions such as river basin authorities and power pools. The Africa-wide Programme for Infrastructure Development (PIDA) envisages investments of around USD 360 billion by 2040, largely in sectors highly sensitive to climate change, such as energy, water, transport and agriculture.

"Climate variability and change are jeopardising Africa's hard-won development achievements and its aspirations for further growth and poverty reduction," explains **Makhtar Diop**, the World Bank's Vice President for Africa. "AFRI-RES will deliver near-term benefits to improve the design of critical infrastructure projects under development now, while also strengthening the long-term capacity of Africa's decision-makers to plan and design investments in a climate-resilient way."

Launched in April 2017, the facility will be jointly operated by the World Bank, the Economic Commission for Africa (ECA), the African Development Bank (AfDB) and the African Union Commission (AUC). Its total budget will be EUR 23.1 million, including EUR 5.0 million in grant financing from NDF.

By bringing together different financers active in Africa, AFRI-RES aims to ensure that climate resilient investment practices are widely adopted. **Fatima Denton**, Special Initiatives Division Director at ECA, emphasises the need for an initiative like AFRI-RES to predictively examine climate impacts with regard to infrastructural development, and convert such information into practical applications. "Over time we hope AFRI-RES will catalyse a paradigm shift towards a climate-resilient green economy approach to planning development investments across the continent," she says.

"Climate resilient infrastructure is well aligned with the AfDB's transformation agenda for Africa," adds **Amadou Hott**, VP for Power, Energy, Climate and Green Growth at AfDB. Welcoming NDF's support as crucial to the establishment of AFRI-RES, Hott emphasises that climate resilient measures must be mainstreamed into all relevant policies and activities to help achieve AfDB's key "Hi-5" goals – on light and power, integration, industrialisation, food supply, and quality of life.

Building climate resilience in urban Africa

Several ongoing NDF projects aim to improve the climate sensitivity of developments in Africa's rapidly growing cities.

* **In Senegal**, NDF and the World Bank are co-financing efforts to improve flood prevention and storm water drainage in the crowded capital Dakar, through structural investments and capacity building. Community engagement forms an integral element of related action plans.

* **In Tanzania**, NDF is supporting the wider Dar es Salaam Metropolitan Development Project by financing capacity building and analytical work that should enable climate resilience to be better integrated into land use planning and transportation, including a new bus rapid transit system.

* **In Mozambique**, NDF is contributing to a World Bank project designed to help the authorities make coastal cities more resilient to the impacts of climate change. NDF's support particularly relates to technical assistance, capacity development and infrastructural improvements.

Photo: Martinez Codina

Cities like Dakar, Senegal must find better ways to cope with flooding problems in future, especially if climate change increases the frequency of extreme weather events as expected.

Photo: Henrik Alfredsson, The Nordic Africa Institute

At the Africa's Urban Future conference in Helsinki, Edgar Pieterse of the African Centre for Cities emphasised the need to test innovative ways to improve sustainability and climate resilience in informal urban settlements.

Spotlighting climate issues in urbanising Africa

Climate resilience must be increasingly prioritised in Africa's rapidly growing cities. This issue was among the themes of an international conference on "Africa's urban future", co-hosted by NDF, the Nordic Africa Institute, Helsinki University and Finland's Ministry for Foreign Affairs, in May 2017.

Africa already has more than 50 cities with over a million inhabitants, and by 2030 more than half of the continent's population will live in urban areas. Many of these cities are already vulnerable to climate-related disasters such as flooding, drought and severe tropical storms.

During the Helsinki conference Divisional Director **Takyiwaa Manuh** from the UN Economic Commission for Africa highlighted the climate challenges and opportunities facing African cities: "Our cities today lack the capacity to plan and implement climate sensitive strategies; and their transport, housing and energy infrastructures are not yet designed to reduce emissions or promote climate resilience. But in future, more effective urban planning and investments in green infrastructure can reduce their climate vulnerability and greenhouse gas emissions as they grow."

Because Africa is only now rapidly urbanising, its cities may be able to skip harmful developmental phases by leapfrogging to sustainable solutions for flexible public transport, waste recycling, urban farming, and the local generation and distribution of renewable energy.

Several speakers in Helsinki called for financers to shift climate support away from national governments to the local authorities in charge of practical urban management, recognising their crucial role. "Forming such partnerships and channelling assistance into the right issues can make African cities into champions in the global fight against climate change," said Manuh – adding that the sharing of Nordic experiences in sustainable urban development can be helpful in this context.

Patience Mususa, a Senior Urban Dynamics Specialist from the Nordic African Institute, stressed the need for investment in the long-term development of climate resilient infrastructure including water supply, sanitation and waste management systems, as well as public transportation and local energy grids. "There's an urgent need to understand and map the interlinked pressures on resources and ecosystem services that can lead to problems like deforestation and water shortages around cities," she said. "Keeping cities' carbon footprint small can be hard where the informal economy is so large and funding for investments is so limited."

Edgar Pieterse, Director of the African Centre for Cities at the University of Cape Town, emphasised the need to find innovative ways to upgrade Africa's informal urban settlements, which have their own dynamics: "Instead of water-borne sanitation systems, for instance, composting and biogas production can be promoted to support intensive urban farming and local energy production."

"Investors' risk assessment criteria are too cautious today. To meet the massive need, we must experiment to find more sustainable forms of urban living, foster innovation, and create links to replicate and upscale good practices," said Pieterse.

The Helsinki conference attracted over 100 participants, including policy-makers, researchers, and representatives from international organisations, civil society and the private sector.

NCF
Nordic Climate Facility
Initiative by NDF

The Nordic Climate Facility *(NCF) is NDF's unique challenge fund, through which Nordic companies and organisations can seek financing of up to EUR 500,000 for innovative climate projects realised with local partners in 21 countries in Africa, Asia and Latin America.*

Have a great green business idea? Seek financing under NCF's seventh call

"Calls for proposals for NCF's 7th project round, under the theme Climate as Business - testing innovative green business concepts, will be issued in August 2017.

"With our seventh call we want to encourage the thinking that climate change can be a business opportunity," explains NCF Manager **Emeli Möller**. "Project proposals that aim to tackle climate change while at the same time stimulating local business development and creating jobs can be eligible for NCF financing. The goal is to test green business concepts that can then be demonstrated to other financers, enabling them to become commercially viable businesses no longer dependent on grants."

"NCF will continue to have a two-stage application process, but the concept notes stage will now be simpler, with applications submitted entirely online, using our new application system, which will open on 28th August," adds Möller.

Promoting sustainable green growth

NCF's current project round, NCF 6, has the theme Green growth for sustainable livelihoods. Contracts have so far been signed for eight new projects, and final negotiations are well under way for another two. Six NCF 6 projects are spotlighted below.

* **In Uganda,** NIRAS and NUCAFE will help 6,000 coffee growers to move up the value chain by adopting climate-resilient and economically sustainable and farming and business practices.

* **In Nepal**, Danish Forestry Extension will equip women's groups in 10 forest areas with tools to diversify local livelihoods by adopting climate-friendly agroforestry practices.

* **In Bolivia,** NORDECO will help 240 indigenous farming families to improve their livelihoods and curb deforestation by practicing climate-smart coffee and cacao production.

* **In Uganda**, the Strømme Foundation and local partners will help 1,500 rural households to mitigate and adapt to climate change by promoting climate-resistant agroforestry, beekeeping, and fuel-efficient cookstoves.

* **In Bolivia**, Forests of the World will help indigenous communities to adopt sustainable agroforestry practices to protect the dry forests of the Chiquitano region, which are highly vulnerable to climate change.

* **In Uganda**, Vi Agroforestry and local organisations will help 10,000 coffee farmers to boost their climate resilience by training them on sustainable land management practices.

Photo: Maja Bygvrå, Plan International DK

Climate Champions and other residents of slum districts in Dhaka participate in co-creative workshops to identify locally appropriate climate-proof solutions that may be tested by the NCF project.

Dhaka's slum communities take climate action

Slum-dwellers in the Bangladeshi capital Dhaka have to cope with prolonged seasonal waterlogging and flooding. These problems are expected to worsen due to climate change – together with climate-related health problems including heat stress and waterborne diseases like diarrhoea, dysentery, cholera and typhoid. An ongoing NCF project is helping local residents to combat these problems.

"We've adopted a co-creative and community-driven approach for this project to encourage residents to participate in the identification, implementation, monitoring and testing of locally appropriate solutions," explains Project Manager **Golam Rabbani** from Plan International Bangladesh. "This whole process has brought Nordic experts from Arup together with residents of the target communities Match Colony and Rail Line Slum, in a joint mission to develop sustainable solutions to combat the negative impacts of climate change."

Abdur Rahman, a Technical Project Officer from the local partner organisation SEEP, adds that 20 local youngsters aged 15–24 (ten male and ten female) have been recruited as "climate champions" to play a prominent role in community-based capacity building initiatives. "The climate champions started by identifying the communities' present problems, practices and resources, and then worked to spread knowledge and increase awareness of solutions," he says.

The President of the Climate Champions Group is 18-year-old **Farjana Akhter**. "As climate champions we've also helped to identify prototype model solutions for resolving the prioritised problems," she says. "We've also set up an information hub named the Climate Champions' Corner, where information on these solutions is made available for the whole community."

Akhter hopes that implementing the project will enable communities to take further actions to solve climate-related problems in future, assisted by government departments who may also be inspired to replicate the project more widely after the model solutions have been tested.

According to Rabbani, key solutions identified by the community involve upgrading streets and drainage systems, establishing a new community-based waste management system, the systematic monitoring of drinking water quality, and retrofitting homes and furnishings with affordable and locally available materials that will improve their resilience to flooding and waterlogging.

"As we're working in slum areas, residents will need financial support to adopt the prototype solutions," adds Rahman. "SEEP's existing local microcredit team will work along with the project to give soft, low-interest microloans to individuals or community groups keen to invest in the climate-adaptive solutions tested through the project."

Photo: Latin Oil

Rice bran is already being processed at the new plant in Nicaragua to make energy-rich oil and saleable by-products.

Breakthrough for rice bran oil production in Nicaragua

Vegetable oil made from rice bran is now being produced in the town of Tipitapa, just outside the Nicaraguan capital Managua.

Oil made from surplus rice bran removed from milled grains is quite widely used in Asia for cooking or as a biofuel to replace fossil fuels, but the related technology is only now being commercially used for the first time in Central America.

The breakthrough occurred in 2014 after the founders of local firm Latin Oil were named among the winners of the IDEAS Energy Innovation Contest – a challenge fund backed by NDF and the Inter-American Development Bank. The resulting grant of USD 100,000 leveraged additional private funding enabling a new rice bran refinery to be set up.

"Rice bran is normally used as low quality animal fodder, but by extracting oil from it we can obtain high quality vegetable oil, together with saleable paraffin and free fatty acids as by-products, while greatly improving the quality of the de-oiled stabilised bran as animal feed, which we can also sell to support our business," explains **Ole Gregersen**, Latin Oil's Co-founder and CEO.

"Rice bran oil has multiple uses. Our business is based on the goal of producing oil for use as biodiesel – and it has already been used as biodiesel with good results – but it also makes a good cooking oil rich in antioxidants and healthy omega 3, 6 and 9," says Gregersen.

The new plant, which started running in January 2017, already processes about 30 tonnes of raw bran daily, to produce 4.5 tonnes of rice bran oil. At full capacity it could process up to 20% of the rice bran available in Nicaragua.

Gregersen emphasises that starting an innovative high-risk business in a country like Nicaragua can be very challenging. "The support from the IDEAS programme was essential. We've learnt many lessons that will be valuable for the future, and there's good potential for similar ventures in other Latin American countries," he adds.

Nepalese biochar project wins award

The British Expertise International network's prize for the best International Development Project in 2017 has been given to an NDF-backed project in Nepal. The award was granted to the UK-based international development consulting firm Landell Mills, whose expertise was applied in the project to test the use of sustainably produced biochar as a low-cost, climate-friendly fertiliser.

The Nordic Development Fund is a joint Nordic development financing institution that supports climate-related projects in Africa, Asia and Latin America.

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