Nordic Climate Facility Results Report 2018

NCF
Nordic Climate Facility
Initiative by NDF

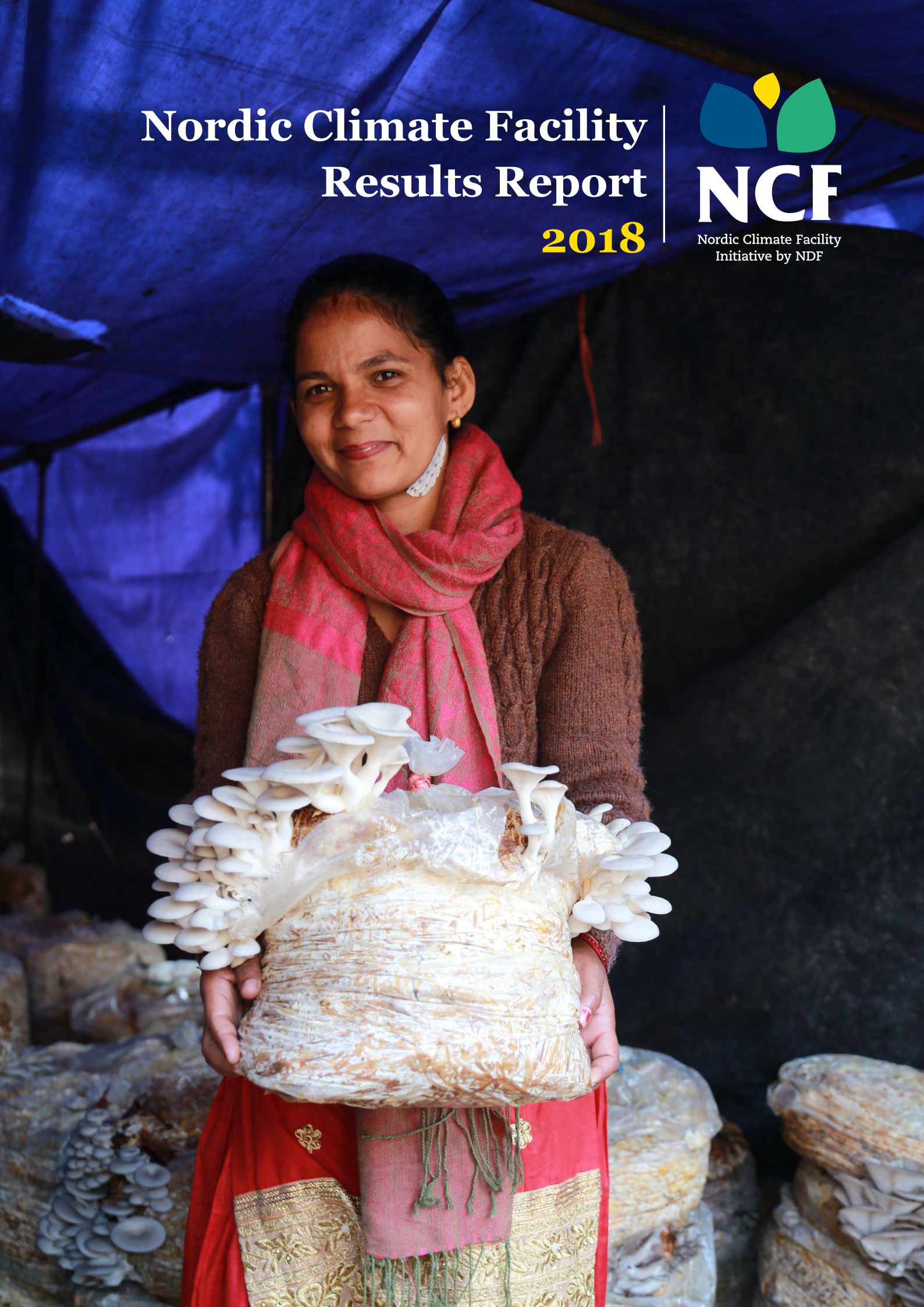


Photo: Emeli Möller/NDF

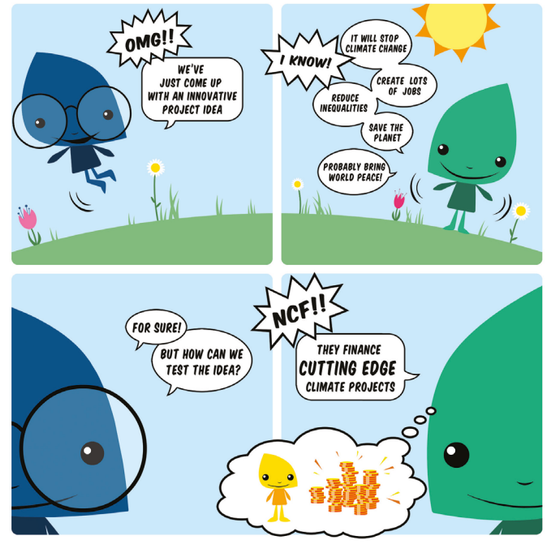
Contents

1. The Nordic Climate Facility in a nutshell

The Nordic Climate Facility (NCF) is a challenge fund set up by the Nordic Development Fund in 2009 to finance early-stage innovative climate change projects. NCF financing is allocated on a competitive basis with thematic calls for proposals arranged annually. Under each call, a Nordic organisation, together with partners, can apply for funding for their project idea. All project proposals are thoroughly evaluated and the highest scoring ones can receive financing between EUR 250,000 and 500,000.

NCF is fully financed and managed by the Nordic Development Fund (NDF)[1].

1. The Nordic Environment Finance Corporation (NEFCO) administered the first four calls for proposals.



NCF works towards the following five main objectives:

1. To increase low-income countries' capacity to mitigate and adapt to climate change

2. To encourage and promote innovations in areas susceptible to climate change

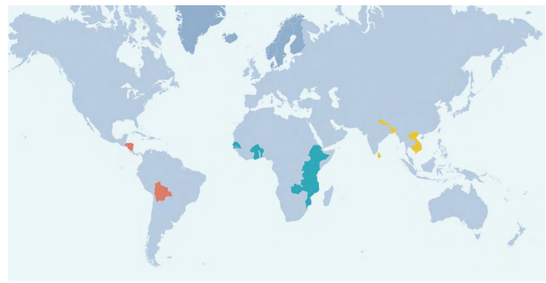
3. To build partnerships between Nordic and partner country actors, both private and public organisations

4. To contribute to sustainable development and the reduction of poverty

5. To leverage additional financing for climate action

NCF aims to build a portfolio of innovative climate-relevant business concepts which have been have been tested, proven viable and are ready to be scaled-up and replicated.

The facility can finance projects in the following **21 countries**:



Africa: Benin, Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Rwanda, Senegal, Tanzania, Uganda and Zambia
Asia: Bangladesh, Cambodia, Laos, Nepal, Sri Lanka and Vietnam
Latin America: Bolivia, Honduras and Nicaragua

2. Glimpse of NCF's portfolio

1.4 million beneficiaries

407,000 tonnes of CO_2e emission reductions per year which is the emissions equivalent of 500,000 people flying from Helsinki to Paris and back.

144 multi-stakeholder partnerships developed

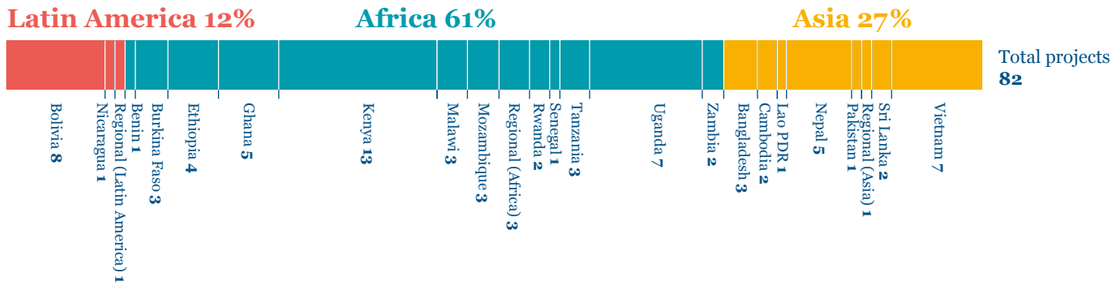
Photo: Amunga Eshuchi/Vi Agroforestry

Sustainable Development Goals

NCF's diverse project portfolio contributes to the fulfilment of the United Nations **Sustainable Development Goals** (SDGs)[2].

2. Only includes projects under NCF call 5–7

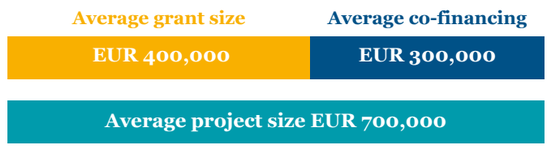
Since 2009, eight NCF calls for proposals have been organised and over **700 project applications** have been received. The NCF project portfolio comprises **82 projects**. Out of these, 29 projects are under implementation and 53 have already been closed.



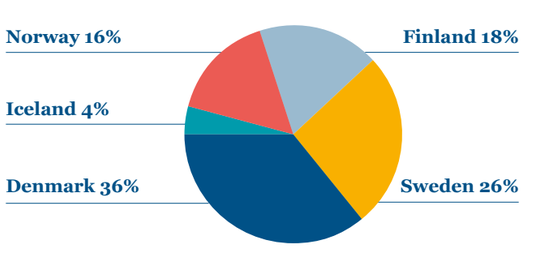
Projects under NCF aim to increase resilience to climate change **(adaptation)**, reduce greenhouse gas emissions **(mitigation)**, or encompass both adaptation and mitigation **(combination projects)**.

n=82

The average size of an NCF project has been around **EUR 700,000**, with an average of almost **EUR 300,000** in co-financing from project partners and other financiers.



All projects are required to have a Nordic lead partner. The largest share of projects has been implemented by Danish lead partners, followed by projects with Swedish and Finnish leads. The majority of the project partners have been private companies, followed by civil society organisations.



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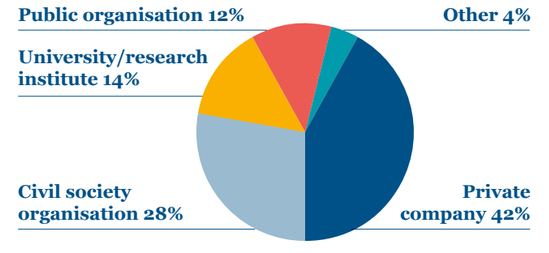


n=285

The total value of the NCF portfolio is EUR 57.7 million, of which EUR 33.1 million is NCF financing and EUR 24.6 million co-financing.

To date, NCF has disbursed EUR 23 million in grants.

3. Project highlights

What characterises NCF's portfolio is its diversity. On these pages, we have gathered some inspiring stories and outcomes from ongoing projects.

Photo: Johanna Zilliacus/NDF

Bolivia

Three women's associations have been established for producing essential oils and their by-products, such as soap, shampoo and balms. They now also have financial data recording systems in place that enable fair profit-sharing among the members. The business concept provides a first source of income to most of the women, which has also led to increased self-confidence.

Implemented by Forests of the World, Apoyo Para el Campesino-indígena del Oriente Boliviano, Fundación para la Conservación del Bosque Chiquitano, Asociación Forestal Indígena Nacional

Bolivia

An online sales platform called Tienda Origen has been set up for selling produce by indigenous communities living in northern Bolivia. The items for sale in the online shop include coffee, cacao and artisanal soaps. The project has also provided other marketing-related support, such as logo and brand image design for the products.

Implemented by NORDECO, Teko Kavi, Wildlife Conservation Society Bolivia

Nepal

23 green businesses have received support to set up or expand their business concepts. An e-commerce portal has been created to market the products. One example is a business that aims to discourage the use of plastic bags, which clogs drains, by producing cloth bags as a sustainable alternative. This women-run business is currently receiving orders from both shopkeepers and the public.

Another example is a mushroom-farming business. "I used to be fully dependent on my husband and had to ask him to provide me some money for my daily expenses. But after joining the women's group and starting to receive earnings from the mushroom farming, I am now self-reliant for my daily expenses," says **Sita Kandel**, member of the mushroom farming business group. "I am now also able to pay the school fee of my son. In addition, the business has increased my self-confidence. I used to be afraid to speak and interact with people. After joining the women's group, I am able to speak with people without any hesitation," Ms. Kandel says.

The group recently received NPR 366,000 (EUR 2,800) from the Prime Minister Special Program in Nepal for producing the best mushroom in the city. The funds will be used for scaling up their business.

Implemented by Arbonaut, Oxfam, Clean Energy Nepal

Photo: Emeli Möller/NDF

23 green businesses have received support to set up or expand their business concepts in Nepal.

Nepal

Chandra Kumari GC is the president of the Kerabari Women's Group in the Nawalparasi District. 29 women in her group have gained access to 32 hectares of land in the community forest for growing essential oil plants and multi-purpose high-value trees. "This has added a lot of value to our lives," Chandra says. "Apart from the income we get from the essential oils, our lives have vastly improved - the project has given us the confidence to do business. The land also gives grass for our cattle, for which we used to walk hours. This project has added so many layers of benefits to our lives that cannot be measured in just money."

Implemented by Danish Forestry Extension, Wildlife Conservation Nepal, Himalayan Bio Trade Pvt. Ltd., Biosynergy A/S, Skovdyrkerne

Photo: Wildlife Conservation Nepal

"Apart from the income we get from the essential oils, our lives have vastly improved – the project has given us the confidence to do business."

– Chandra Kumari GC

Uganda

60 savings groups have been established in Karamoja in northern Uganda. The savings groups have an average of 25 members each, and thus around 1,500 small-holder farmers' liquidity and financial literacy has been improved. At the same time, the groups provide peer support in issues beyond financial matters. Loans and savings have been used for paying school and medical fees, starting and expanding businesses, constructing and improving houses and agricultural inputs such as seeds or beehives. **Ayoo Joyce Omara** joined a savings group in September 2018. "I used to battle with a number of financial needs ranging from medical, clothing, feeding and school fees," she says. "My first loan from the group was UGX 50,000 (EUR 12) in November 2018 with the purpose of starting a small business selling tomatoes, beans and small fish. I am proud because I now have a business that now provides for our domestic needs. Our next loan will be for paying school fees for our second-born girl."

Implemented by Strømme Foundation, Aridland Development Programme and Woord en Daad

Photo: Johanna Zilliacus/NDF

1,500 small-holder farmers' liquidity and financial literacy has been improved in Karamoja, northern Uganda.

Photo: Johanna Zilliacus/NDF

Uganda

More than 6,000 coffee farmers have adopted sustainable agriculture land management practices. 81% of these farmers' productivity has increased, resulting in larger coffee yields and better quality coffee. As a consequence, the farmers' income from their coffee farms has improved. For example, **Stephen Bomesereza Kaamu**, who owns a demonstration plot has seen a 5-fold increase in coffee yield as a result of these practices. A simultaneous increase in the quality of the coffee beans has signified a 9-fold increase in sales income from one harvest, compared to before the project start.

In addition, women participate now more in decision-making at coffee farms as a result of raising the awareness of gender equality. This progress happens both within households as well as the small producer organisations, in which women have risen to leadership positions, currently holding 30% of board and management positions.

Implemented by Vi Agroforestry, Kibinge Coffee Farmers' Cooperative Society, Ankole Coffee Producers' Cooperative Union and Banyakole Kweterana Cooperative Union

More than 6,000 coffee farmers have adopted sustainable agriculture land management practices in Uganda.

Lao PDR

An interactive climate vulnerability map and an infographic generator has been developed for 42 villages in the Attapeu and Sekong provinces. The purpose of the tools is to assist informed decision-making for local adaptation and resilience strategies. The interactive map and the infographic generator can be accessed on UN-Habitat's website.

Implemented by Stockholm International Water Institute, UN-Habitat, NPSE Attapeu, NPSE Sekong

An interactive climate vulnerability map and an infographic generator has been developed for 42 villages in Lao PDR.

Pakistan

12 communal bio-digesters were installed for 40 households in Karachi, Pakistan. Village cooperatives have been established and are responsible for the management, operation and proper functioning of the systems. A micro-business model has been developed for the transportation of the fuel (cow dung) for the bio-digesters.

Implemented by WWF Sweden, WWF Pakistan, Karachi Electric

Photo: Visa Tuominen/NDF

Photo: Iñigo Ruiz-Apilánez/Arup

Bangladesh

Rofiqul Islam, a project Climate Champion, has lived in Dhaka's Match Colony since he was born. During the monsoon, flooding is part of everyday life in this neighbourhood. Sometimes the water levels are knee-high and people are constantly exposed to water-borne diseases. Floods make it almost impossible for children to walk to school. "It is tough when the road is completely under water," Rofiqul says. "Elevated roads installed by the project have proven to be the way forward. More girls and boys can now attend school every day even when flooding occurs."

Implemented by PlanBørnefonden, Social Economic Enhancement Programme and Arup

"Elevated roads installed by the project have proven to be the way forward. More girls and boys can now attend school every day even when flooding occurs."

– Rofiqul Islam

4. Impact stories

During 2018, the following two projects were successfully completed.

Capacity-building of flower growers increases water efficiency and reduces yield losses

Photo: Agua Sustentable

Project: *Technology, adaptation and mitigation: Greening the economy of urban agriculture at Kanata Metropolitan Area*

Country of implementation: Bolivia

Implemented by: Diakonia (Sweden), Agua Sustentable, Institución Financiera de Desarrollo (Bolivia)

Situation before project: Temperature increase has been considered one of the reasons behind the expansion of plagues in agricultural soils in the central valley of Cochabamba. The metropolitan area of Cochabamba hosts 1.1 million inhabitants and is an important area for agricultural production in Bolivia. The spread of the fungi *fusarium* caused yield losses of up to 40% for flower producers growing carnation and lisianthus. Flower production is an economic activity led mainly by women and employing more than 4,000 families in the metropolitan area. For controlling *fusarium*, farmers have used chemical plague controllers which increase the water need of the crop by 35%, a requirement which was particularly hard to meet in 2015 and 2016 when the El Niño climate phenomenon caused drought and water scarcity in the area. Additionally, the excessive use of this fungicide is harmful to the farmers' health.

Project results: As part of the project, a pilot was set up to find a more sustainable solution for plague control, as well as more efficient use of resources such as water. Different options for implementing water management solutions and natural fungicide (*thricoderma*) were piloted by a number of flower farmers in the area. The most efficient methods were identified, documented and shared through publications and training to members of flower producer associations.

Highlighted positive impacts:

• **Improved health conditions:** The use of the natural fungicide thricoderma significantly reduces the need for chemical plague control, preventing health problems for farmers.

• **Water efficiency:** The installation of sprayers and drip irrigation was found to be a low-cost solution and save large quantities of water compared to the traditional flooding method. At the same time, these solutions are much less labor-intensive and allow farmers to better control the conditions in the flower fields. Furthermore, using thricoderma reduces the need for additional water supply typical for chemical plague control.

• **Enhanced income opportunities:** The yield loss reduced by the use of thricoderma increases productivity and profitability of the farming. The avoided yield loss could increase farmers' income by 23%, compared to a scenario in which parts of the yield is lost to fusarium. Furthermore, it helps diversify production as there is now interest in growing carnations and eustomas by farmers who previously did not have the incentive to do so.

• **Increased gender equality:** Women's position as relevant economic actors in their neighbourhoods and in the flower producer association is strengthened.

Promoting climate-resilient housing for the urban poor

Photo: Emeli Möller/NDF

Project: *Implementing Incentives for Climate Resilient Housing Among the Urban Poor in Vietnam*

Country of implementation: Vietnam

Implemented by: Vista Analyse (Norway), Institute for Social and Environmental Transition, Da Nang City Women's Union, Hue College of Economics (Vietnam)

Situation before project: Climate change poses a significant threat in rapidly growing cities in Vietnam. Many households cannot afford permanent, high-quality houses and are at risk of experiencing severe structural damage during seasonal typhoons, which appear to be increasing in intensity due to climate change. The damage further impoverishes these households and can act as a poverty trap. One important typhoon-prone city is Da Nang, the largest city in central Vietnam. Previous analysis by project partners has shown that storm-resilient housing offers clear economic benefits for households. However, poor and near-poor households may have limited information of the benefits of safer housing, have limited knowledge of safe building techniques, may be credit constrained or face combinations of these hurdles.

Project results: Incentives, both in the form of innovative finance and information measures, are needed to encourage investment in climate-resilient housing technologies currently available at relatively low cost. Based on research conducted as part of the project, the following conclusions emerged:

• For near-poor households, a subsidised loan and free technical assistance is not sufficient to motivate most households to invest in climate-resilient houses. Converting one-third of the loan to a grant (corresponding to 5-10 percent of the total cost) more than doubles the take-up and incentivises households to invest in climate-resilient homes, consistent with the idea that a small grant acts as a lever.

• A larger grant, as well as technical support, is needed for poor households. The project found that a relatively small grant of about 30 percent of the total cost enables poor households to leverage a large amount of external funding.

Results will be available in two working papers on Vista Analyse's website.

Highlighted positive impacts:

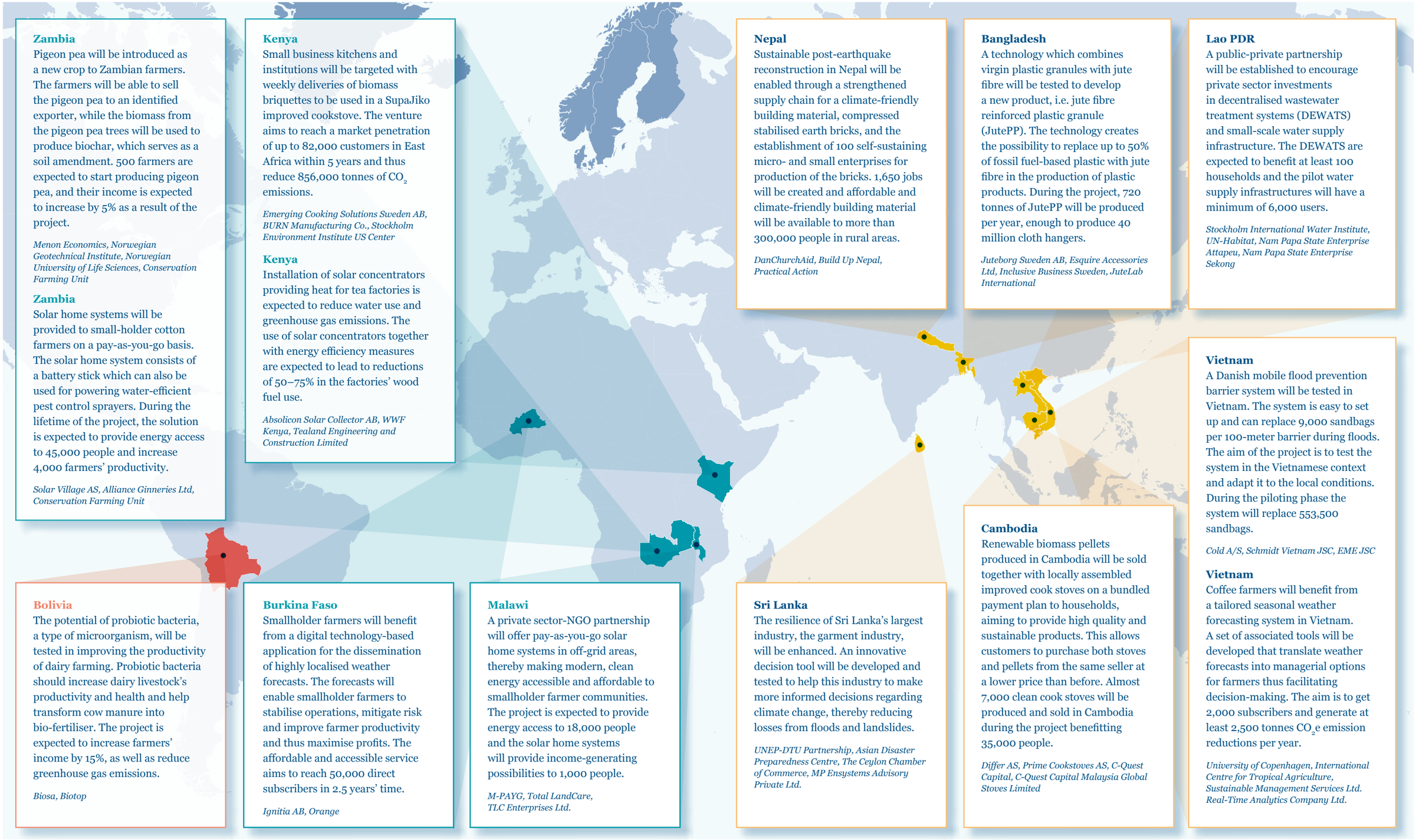
• **Increased resilience:** 135 houses have been built or retro-fitted as part of the project and are now more resilient towards extreme weather conditions.

• **Improved capacity of local stakeholders:** The Women's Union staff's capacity has been strengthened at multiple levels in operating and managing climate-resilient housing programs.

• **Input for policy development:** The project recommends that the local and central government in Vietnam base their policies on the conclusions of the project. The size of the subsidy for near-poor households is similar in size to what has previously been spent on supporting house repairs after severe typhoons.

5. New NCF projects

During 2018, 14 projects were added to the NCF portfolio.



Zambia
Pigeon pea will be introduced as a new crop to Zambian farmers. The farmers will be able to sell the pigeon pea to an identified exporter, while the biomass from the pigeon pea trees will be used to produce biochar, which serves as a soil amendment. 500 farmers are expected to start producing pigeon pea, and their income is expected to increase by 5% as a result of the project.

Menon Economics, Norwegian Geotechnical Institute, Norwegian University of Life Sciences, Conservation Farming Unit

Zambia
Solar home systems will be provided to small-holder cotton farmers on a pay-as-you-go basis. The solar home system consists of a battery stick which can also be used for powering water-efficient pest control sprayers. During the lifetime of the project, the solution is expected to provide energy access to 45,000 people and increase 4,000 farmers' productivity.

Solar Village AS, Alliance Ginneries Ltd, Conservation Farming Unit

Kenya
Small business kitchens and institutions will be targeted with weekly deliveries of biomass briquettes to be used in a SupaJiko improved cookstove. The venture aims to reach a market penetration of up to 82,000 customers in East Africa within 5 years and thus reduce 856,000 tonnes of CO_2 emissions.

Emerging Cooking Solutions Sweden AB, BURN Manufacturing Co., Stockholm Environment Institute US Center

Kenya
Installation of solar concentrators providing heat for tea factories is expected to reduce water use and greenhouse gas emissions. The use of solar concentrators together with energy efficiency measures are expected to lead to reductions of 50–75% in the factories' wood fuel use.

Absolicon Solar Collector AB, WWF Kenya, Tealand Engineering and Construction Limited

Nepal
Sustainable post-earthquake reconstruction in Nepal will be enabled through a strengthened supply chain for a climate-friendly building material, compressed stabilised earth bricks, and the establishment of 100 self-sustaining micro- and small enterprises for production of the bricks. 1,650 jobs will be created and affordable and climate-friendly building material will be available to more than 300,000 people in rural areas.

DanChurchAid, Build Up Nepal, Practical Action

Bangladesh
A technology which combines virgin plastic granules with jute fibre will be tested to develop a new product, i.e. jute fibre reinforced plastic granule (JutePP). The technology creates the possibility to replace up to 50% of fossil fuel-based plastic with jute fibre in the production of plastic products. During the project, 720 tonnes of JutePP will be produced per year, enough to produce 40 million cloth hangers.

Juteborg Sweden AB, Esquire Accessories Ltd, Inclusive Business Sweden, JuteLab International

Lao PDR
A public-private partnership will be established to encourage private sector investments in decentralised wastewater treatment systems (DEWATS) and small-scale water supply infrastructure. The DEWATS are expected to benefit at least 100 households and the pilot water supply infrastructures will have a minimum of 6,000 users.

Stockholm International Water Institute, UN-Habitat, Nam Papa State Enterprise Attapeu, Nam Papa State Enterprise Sekong

Vietnam
A Danish mobile flood prevention barrier system will be tested in Vietnam. The system is easy to set up and can replace 9,000 sandbags per 100-meter barrier during floods. The aim of the project is to test the system in the Vietnamese context and adapt it to the local conditions. During the piloting phase the system will replace 553,500 sandbags.

Cold A/S, Schmidt Vietnam JSC, EME JSC

Vietnam
Coffee farmers will benefit from a tailored seasonal weather forecasting system in Vietnam. A set of associated tools will be developed that translate weather forecasts into managerial options for farmers thus facilitating decision-making. The aim is to get 2,000 subscribers and generate at least 2,500 tonnes CO_2e emission reductions per year.

University of Copenhagen, International Centre for Tropical Agriculture, Sustainable Management Services Ltd. Real-Time Analytics Company Ltd.

Cambodia
Renewable biomass pellets produced in Cambodia will be sold together with locally assembled improved cook stoves on a bundled payment plan to households, aiming to provide high quality and sustainable products. This allows customers to purchase both stoves and pellets from the same seller at a lower price than before. Almost 7,000 clean cook stoves will be produced and sold in Cambodia during the project benefitting 35,000 people.

Differ AS, Prime Cookstoves AS, C-Quest Capital, C-Quest Capital Malaysia Global Stoves Limited

Sri Lanka
The resilience of Sri Lanka's largest industry, the garment industry, will be enhanced. An innovative decision tool will be developed and tested to help this industry to make more informed decisions regarding climate change, thereby reducing losses from floods and landslides.

UNEP-DTU Partnership, Asian Disaster Preparedness Centre, The Ceylon Chamber of Commerce, MP Ensystems Advisory Private Ltd.

Malawi
A private sector-NGO partnership will offer pay-as-you-go solar home systems in off-grid areas, thereby making modern, clean energy accessible and affordable to smallholder farmer communities. The project is expected to provide energy access to 18,000 people and the solar home systems will provide income-generating possibilities to 1,000 people.

M-PAYG, Total LandCare, TLC Enterprises Ltd.

Burkina Faso
Smallholder farmers will benefit from a digital technology-based application for the dissemination of highly localised weather forecasts. The forecasts will enable smallholder farmers to stabilise operations, mitigate risk and improve farmer productivity and thus maximise profits. The affordable and accessible service aims to reach 50,000 direct subscribers in 2.5 years' time.

Ignitia AB, Orange

Bolivia
The potential of probiotic bacteria, a type of microorganism, will be tested in improving the productivity of dairy farming. Probiotic bacteria should increase dairy livestock's productivity and health and help transform cow manure into bio-fertiliser. The project is expected to increase farmers' income by 15%, as well as reduce greenhouse gas emissions.

Biosa, Biotop

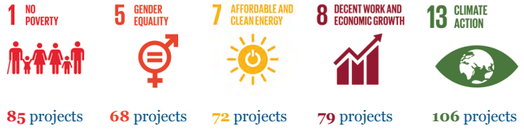
6. NCF8 stats

In August 2018, NCF's 8th call for proposals was launched under the theme *Testing the business viability of climate solutions*. A total of 121 concept note applications were received.

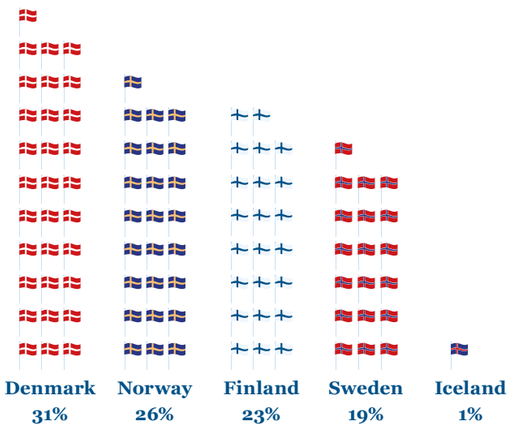
There was a stronger focus on mitigation projects compared to adaptation; however, most of the project applications were classified as combination projects with both mitigation and adaptation aspects.

n= 121

As could be expected, the most commonly mentioned UN Sustainable Development Goal (SDG) was SDG 13 - Climate action. Also, SDGs 1 (No poverty), 5 (Gender equality), 7 (Affordable and clean energy) and 8 (Decent work and economic growth) stood out from the applications.

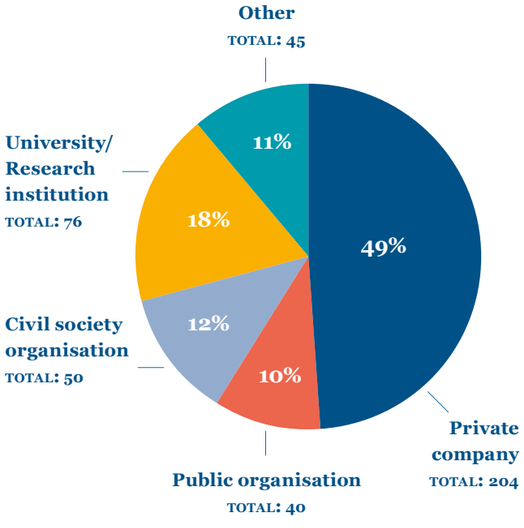


When it comes to the Nordic lead applicant countries, the largest amount of applications came from Denmark, followed by Norway and Finland.



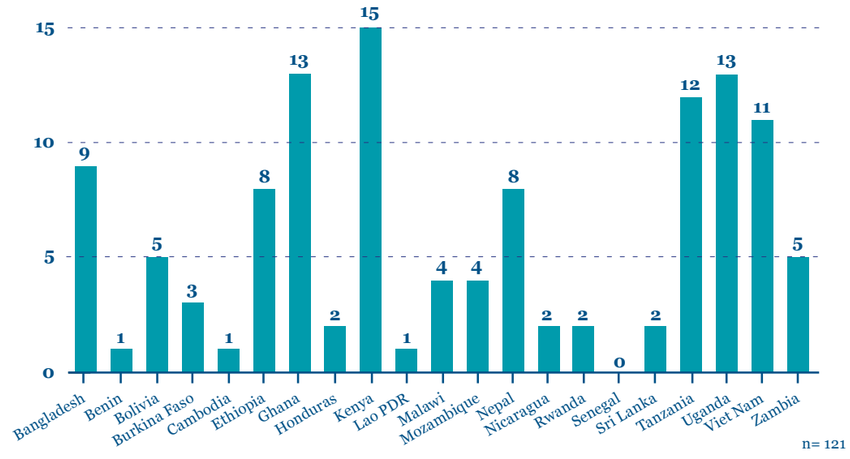
n= 121

Private companies represented almost half (49%) of the full pool of applicants (n=415), reflecting NCF's focus on business development.



n= 415

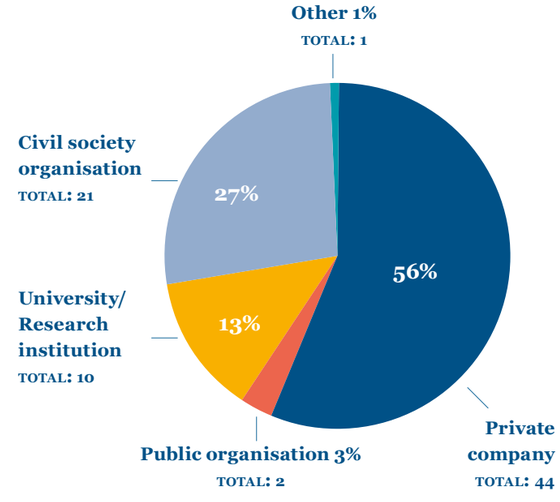
Projects were presented to be implemented in 20 out of the 21 eligible NCF countries - the most common ones being Kenya, Ghana and Uganda.



n= 121

Agriculture & fishery and energy were by far the most targeted sectors in the project applications.

By the end of 2018, the 121 applications were evaluated and 26 applicants were invited to present a **full project proposal**. Out of these shortlisted projects, private companies comprised more than half (56%) of all applicants (n=78), and civil society organisations grew their proportion from 12% in the concept note phase to 27% in the full proposal phase, becoming the second most common type of applicants.



n=78

7. Innovation in NCF projects

NCF was strongly featured in the NDF-published study *Spurring climate innovation through challenge funds*. The publication explores the innovations promoted by the two challenge funds managed by NDF - NCF and the Energy and Environment Partnership covering Southern and East Africa Trust Fund (EEP Africa). This is the first time a systematic approach has been used to assess what type of innovations NDF's challenge funds foster.

So, what was considered innovative in the project proposals? While project proposals usually contain several components, all of the components are not necessarily considered innovative. Based on data collected from NCF and EEP Africa, six innovation categories were identified in the study: technology, method, service, partnership model, financing and location.

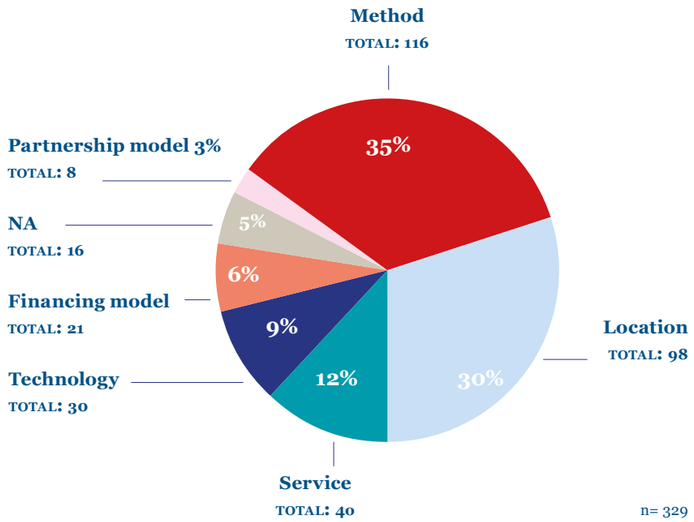


Figure 1 What is the main innovation in a proposal?

Interestingly, technology was the innovative aspect in only 9% of the applications. The study found that innovation most commonly lies in the method of implementation, that is, in how technologies, products or services are applied within a project. In other words, in how to make technologies, products or services work better, be more affordable or be more accessible for populations that did not have access to them before. 35% of the project applications were categorised as innovative due to their method.

An example of a project where method is the main innovation is an NCF-financed project in Bolivia[3], which aims to demonstrate the potential of using probiotic bacteria to improve productivity of dairy farming and at the same time reduce GHG emissions.

The innovation category service was found to be the third most common, being the source of innovation in 12% of the applications. One example of this category is an NCF-financed project in Burkina Faso[4], which uses ICT tools to provide meteorological services for rural farmers at an affordable price and in an understandable format.

Photo: Ignitia

The data for the publication was collected from NCF calls 6, 7 and 8 and EEP Africa call 14. In total, 329 proposals were analysed, 305 under NCF calls and 24 from EEP Africa. The publication is available from the NCF website and the NDF website.

3. Implemented by Biosa and Biotop
4. Implemented by Ignitia AB and Orange

Photo: Johanna Zilliacus/NDF

Cover photo: Sita Kandel, member of a mushroom farming business group in Nepal. NCF5 project. Photo: Emeli Möller/NDF

Nordic Development Fund

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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