



NORDIC
CLIMATE FACILITY



Nordic Development Fund • Nordic Environment Finance Corporation

Nordic Climate Facility (NCF) Annual Review 2013



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1. INTRODUCTION

The Nordic Climate Facility (NCF) provides grant financing to encourage and promote technological innovations in areas susceptible to climate change in low-income countries. The facility targets both private and public organisations with relevant experience registered in Denmark, Finland, Iceland, Norway or Sweden that, in a partnership with a local partner, will undertake to implement projects in one or more eligible countries. To date, NCF has launched four calls for proposals for innovative ideas, each focusing on specific themes relating to climate change and development.

NCF is financed by the Nordic Development Fund (NDF) and administered by the Nordic Environment Finance Corporation (NEFCO). As of 31 December 2013, the cumulative funding for four NCF Calls for Proposal is EUR 22.31 million including some interest earned.

This review has been prepared by NEFCO. It summarises and analyses the progress made by NCF during 2013.

2. EXECUTIVE SUMMARY

Last year, 2013, was the fourth full operational year of NCF since the facility was launched in late 2009. During 2013, six further NCF1 projects under the themes of water resources and energy efficiency were completed, in addition to four projects completed in 2012. One additional project was completed in substance. Three projects were facing delays.

Of NCF2 projects under the themes of renewable energy and urban adaptation, one project was completed and three projects were substantially completed with some final reporting still pending at year end. Negotiations for early completion were ongoing with one NCF2 project due to reasons beyond the grantee's control. In general, good progress was made in project implementation of nine out of twelve NCF2 projects, although longer delays were observed in general compared to NCF1 projects. Some ten NCF1 and five NCF2 grant agreements were amended in 2013 mostly due to no cost implementation period extensions to allow for climate and development benefits to be achieved.

Implementation of all 14 NCF3 projects was well under way and the first project is expected to be completed in 2014. Due to the challenging business theme of the Call, some challenges can be expected during the implementation of NCF3.

The fourth call for proposals was launched on 9 December 2013 under the broad theme of *Inclusive green growth projects contributing to private sector development*. The theme includes three focus areas: 1) Material and resource efficiency; 2) Smart Agriculture and 3) Leapfrogging technologies and mechanisms. The deadline for submitting on-line pre-qualification proposals was 31 January 2014.

In 2013, the total cumulative grant disbursements under NCF1 amounted to 93% of the amended contract amount of EUR 5,061,339. For NCF2, cumulative grant disbursements totalled 41% of the amended contracted amount of EUR 5,227,400. For NCF3, cumulative grant disbursements totalled 14% of the contracted amount of EUR 5,573,473.

The results and progress of both completed as well as ongoing NCF projects indicate that the key NCF objectives of (i) facilitating exchange of technology, knowledge, know-how and innovative ideas between the Nordic countries and low-income countries in the field of climate change; (ii) increasing low-income countries' capacity to mitigate and adapt to climate change; and (iii) contributing to sustainable development and the reduction of poverty can be met.

For completed mitigation projects, the annual direct CO_{2e} reductions vary from 100 t/a to 4000 t/a, with considerable indirect reduction opportunities identified via scaling-up and replication potential. For adaptation projects, the results vary from comprehensive studies, climate modelling, adaptation strategy work to concrete water harvesting, sustainable agricultural, safe water access, tree planting and erosion control activities – typically closely linked with development impacts.

An external evaluation of NCF was completed in early April 2013. The evaluation findings showed that NCF fits well within NDF's strategy and targets and indicated that NCF is a cost-effective scheme which has been successful in delivering results, although it is still too early to say much about the impact and sustainability of most projects under implementation. NCF also compares favourably with a number of other call-based schemes and provides added value as a rather unusual mechanism combining innovation, leverage and partnership. The replies to the web survey confirm that the partners involved have perceived NCF as a useful mechanism.

3. PROGRESS ASSESSMENT

3.1. Progress towards achieving overall NCF objectives

3.1.1. General

NCF's main objectives as defined by the NDF Board are to: (i) facilitate the exchange of technology, knowledge, know-how and innovative ideas between the Nordic countries and low-income countries in the field of climate change; (ii) increase low-income countries' capacity to mitigate and adapt to climate change; and (iii) to contribute to sustainable development and the reduction of poverty. NCF's purpose and objective is also to encourage the testing of real concepts relating to climate change and in particular to facilitate partnerships.

Expected results of NCF1 and NCF2:

1. Financing for pre-feasibility and feasibility studies for adaptation and mitigation projects
2. Financing for the implementation of demonstration projects in the field of adaptation and mitigation that are likely to strengthen the development of suitable technologies for emerging markets
3. Supporting the development, dissemination and implementation of sustainable pilot projects to showcase the use of suitable technologies as viable alternatives to develop business-oriented initiatives
4. Adopting a monitoring and evaluation plan for each pilot project on the basis of the criteria and indicators already outlined in the project application formula and project documents in order to guarantee their efficient operation and to draw on lessons for the future
5. Developing strategies to disseminate suitable technologies for adaptation and mitigation

For NCF3, the expected results are similar except for the pre-feasibility and feasibility studies. Based on the lessons learned from NCF1 and NCF2, it was decided not to provide funding for studies but only for concrete projects.

NCF4, launched in December 2013, continues along the lines of NCF3, however, the focus has shifted more towards various direct and indirect ways of supporting private sector development, promoting economic activity and facilitating private sector participation in climate-related development efforts.

3.1.2. Climate change mitigation and adaptation

All NCF projects clearly facilitate the exchange of technology, knowledge, know-how and innovative ideas between the Nordic countries and the host countries related to climate change and increase the host countries' capacity to mitigate and adapt to climate change.¹ The projects are, however, different, representing various combinations of mitigation, adaptation, development – another key objective for NCF, and innovativeness components. The multifactor criteria used in project evaluation and selection lead to projects not being comparable as far as their impacts are concerned.

¹ All NCF2-NCF3 projects have passed the NCF's climate screening criteria for mitigation and/or adaptation. NCF1 projects were also assessed later, after the introduction of the NDF Climate Screening tool to meet the criteria.

It is important to note that projects are almost equally divided between mitigation and adaptation, with an emphasis on mitigation. Some projects combine both mitigation and adaptation elements.

Given the small scale of the projects, greenhouse gas reductions in NCF mitigation projects are typically quite modest, from a few hundred to a few thousand tonnes of CO_{2e}/a. The volume of emissions reductions has not been the sole selection criteria as discussed above. Some projects, however, could lead to notable emission reductions if successfully scaled up and replicated.

For adaptation, defining concrete results and/or adaptation indicators is somewhat more challenging. The impacts of climate change on socio-developmental issues, such as health, livelihood support, education, conflicts and frequent droughts, are expected to increase and could lead to water shortages, increased risk of food shortages, the expansion of aridity as well as impacts on crops. Adaptation impacts are also typically closely linked to development impacts.

Africa's immediate adaptation priority is to improve its current adaptive capacity, much of which will be operationally indistinguishable from – and needs to be fully integrated with – traditional development activities. A growing evidence base supports the idea that general development is a crucial pre-requisite for strengthening a country or region's ability to deal with climate change and that more obviously explicit 'adaptation investments' are best implemented when a base level of development (or adaptive capacity) has been achieved. With more than 45% of Africa's population living in countries with the lowest adaptive capacity in the world, investments here are crucial. These will include investments in the health and education systems in African countries, as well as building institutional capacity. There is likely to be a strong comparative advantage for existing development institutions in helping to deliver these investments.²

The key adaptation benefits of NCF projects are linked, for example, to ensuring access to safe and affordable water for the beneficiaries, capacity building of the communities and partners involved, understanding potential adaptation measures that are crucial to the management of climate-related disasters, facilitating better planning for infrastructure development and improving preparedness for flood disaster prevention. The completed projects indicate concrete adaptation benefits linked e.g. to livelihood support as discussed in section 3.1.2. There are good indications that key NCF objectives can be met.

3.1.3. Development

All NCF projects have defined required development impacts, which, in most cases, are closely linked to adaptation and sometimes to mitigation impacts. Again, the magnitude of these impacts varies due to the multifactor criteria used for project selection.

The development impacts of NCF projects are typically linked to income generation, improvements in nutrition and health (Naps' project in Benin, Vi Skogen and Niras' projects in Kenya), and access to safe water (DRC's and Solvatten's projects in Kenya). These elements are found in completed projects contributing to sustainable development and the reduction of poverty, thus indicating that NCF objectives could be met.

² African Development Bank, 2011, The Cost of Adaptation to Climate Change in Africa



Figure 1. NCF projects.³

3.2. First call for proposals

3.2.1. Implementation of NCF1

NCF1 was launched in October 2009 with the focus on water resources and energy efficiency. Nine out of 14 projects are concrete investment projects, two are studies and three projects combine some concrete activities with studies, capacity building and strategy work. Seven projects focus on climate change mitigation, six on adaptation and one project is a combination of both.

The implementation of NCF commenced in late 2010, with the original closing dates scheduled for late 2012 and early 2013. In 2013, activities related to NCF1 focused on supervision, monitoring and final reporting.

NCF1 projects have generally progressed well, despite some initial delays and continuing challenges in two projects. Some underperformance has been noted in a few projects compared to their originally, typically somewhat optimistically estimated benefits, even though the milestones have substantially been met in completed projects.

As a summary, out of fourteen NCF1 projects, 10 projects have now been fully completed also as regards to final reporting, another is also fully completed but subject to some final clarification on reporting. One project has been terminated and implementation is on-going for two projects due to the challenges described below. In 2012, four NCF1 projects were completed, namely Gaia Consulting's cook stoves project in Ethiopia, Solvatten's water purification project in Kenya, Hifab's energy efficiency project in Ethiopia and Niras Natura's water harvesting project in Kenya.

³ Due to some regional projects, the total amount of projects is more than 40.

Diakonia's adaptation project helped the Bolivian Andean communities depending on tropical glaciers to adapt to expected climate change through the generation of a multidisciplinary knowledge base consisting of five studies which formed the basis of adaptation plans for the Illimani area and the Sajama National Park. The results and lessons learnt were finally incorporated into a Framework for Differentiated Vulnerability Evaluation and Adaptation Actions, which are to be further disseminated for scaling up in other Andean regions.

Motiva Services' mitigation project strengthened national capacities for energy efficiency in Nicaragua by performing quick-scans and 15 in-plant energy efficiency assessments in small and medium-sized Nicaraguan companies. Energy efficiency, especially in SMEs, is important to achieve the national environmental goals set by the Nicaraguan government and regional agreements. The project brought together key actors in Nicaragua to discuss energy efficiency measures and apply them in practice at the company level. The project enabled dialogue between different market actors and had a positive impact on energy efficiency issues on both a practical and administrative level.

Naps Systems' project combined adaptation with some mitigation impacts. Eight solar-powered drip irrigation systems – Solar Market Gardens (SMG) – were commissioned in Benin to sustainably yield produce for sale as well as consumption in off-grid communities. Three installations were previously piloted in Kalalé, a district in Benin that, like much of the Sudano-Sahel, has inadequate rain-fed agriculture and lacks access to electricity. The success of the pilot – as evaluated and reported by Stanford University – prompted the project team to collaborate with Naps to lead an eight-SMG installation effort in anticipation of replicating and validating the technology to extend SMG benefits to more people in Kalalé and set the stage for bringing the model to scale.

Orgut's ambitious study – including also some actual actions on the ground - on climate modelling and adaptive capacity in Kenya resulted in a complex, three-tier analysis with clear outputs: (i) improving scientific knowledge about climate change in Kenya and its expected impacts on the water resources, (ii) providing practical guidelines on adaptation and (iii) implementing concrete actions to address climate change in six sub-catchments improving their adaptive capacity. Detailed Regional Climate Modelling results for the whole of Kenya provided knowledge about possible future climate change throughout Kenya up to 2100. Rainfall-Runoff modelling in eight selected catchments was also used to assess how climatic changes may affect the availability of water in the different hydro-climatic zones in Kenya.

Vi-Skogen's Mount Elgon integrated watershed management project in Kenya increased the adaptation capacity of communities in the Mount Elgon water catchment by improving their living conditions. To achieve this objective, the project established Sustainable Agricultural Land Use Management (SALM) practices to mitigate land degradation and facilitate households' capacities to adapt to climate change. In addition, the community-based organisations were empowered by participating in the protection of riverbanks, springs, wells and dams; a diversified farming system has been introduced to farmers.

The **Raw Materials Group's** (RMG) electronic scrap project concentrating on capacity building in Ghana was also completed in 2013. The project increased e-scrap workers' income, health and safety by showing how to recover some previously unknown components such as circuit boards and motherboards. The project also trained workers in health and safety matters. However, it became evident during the project that income creation had been the first priority for them.

The Danish Red Cross water supply project in Kenya was practically completed in 2013 after some delays in reporting. Some final documents were still to be received at year end. The project consisted of installing nine Lifelink solar-based water supply systems targeting vulnerable rural communities on the outskirts of the town of Isiolo. The project increased over 15,000 persons' access to safe water, promoted hygiene and sanitation, and increased awareness of climate change and climate change adaptation.

CARE Denmark's regional cooking stove project in East Africa was registered as a CDM PoA in 2012 after long delays beyond the control of the grantee and the local partner. Actual cooking stove activities have also commenced, but the very low current value of carbon credits may, however, still have a negative effect on the planned activities, which would otherwise have major scaling-up potential. Uganda Carbon Bureau, the local partner, took the lead in project completion in 2013.

The Green Resources' charcoal project has faced additional delays in implementation due to problems with kiln operation. An additional extension is likely to be needed for the project.

DHI's water harvesting project in Ghana was terminated at the end of May 2013 due to changes in the project team and implementation challenges. DHI prepared a report on the lessons learnt from the project before the partial reimbursement of direct costs.

3.2.2. Climate impacts

Diakonia's adaptation project in Bolivia generated a multidisciplinary knowledge base consisting of 1) an agroclimatological study evaluating the historical variation of climatic parameters of the area to define future possibilities for agricultural activity in new climatic conditions; 2) a hydrological study assessing the glacier surface and wetlands; 3) a livestock study identifying the opportunities and threats of domestic livestock production; 4) a wetlands study integrating information on species composition and their effects on water balance in the Sajama National Park and 5) a socio-economic-political study describing the socioeconomic status of the area and its vulnerability to climate change. The project also included a gender study.

The results of the studies formed the basis for Adaptation Plans for the Illimani area and the Sajama National Park, where 7 and 11 pilot projects have been implemented respectively. The results and lessons learnt were incorporated into a Framework for Differentiated Vulnerability Evaluation and Adaptation Actions to be further disseminated for scaling up in other Andean regions. Adaptation capacity is highly dependent on knowledge and services, as well as on access to resources. A successful adaptation plan must be based on an understanding of the socio-economic dimensions of vulnerability and, in particular, of the factors that make women and other marginalised groups especially vulnerable.

Motiva Services' energy efficiency project in Nicaragua conducted 62 Quick-Scans and 15 In-Plant-Assessments at companies. In addition to the companies audited, material on the benefits of Energy Efficiency was distributed to 500 other entities in seminars, round-tables, trainings and workshops. The In-Plant-Assessments gave a precise indication of the savings potential in energy and CO₂. The energy saving potential is 15% on average at the enterprises analysed. The suggested energy saving measures could result in a decrease of almost 4,000 tonnes of CO₂ annually. In a general Nicaraguan context, based on a total of ca. 500 energy audits performed by the local partner, Cleaner Production Center of Nicaragua, it was observed that energy audits reflect an average potential of 10% increase in productivity, 25% reduction in waste generation, 26% reduction in energy consumption and 35% in

water consumption. Thus, with regard to these figures, if and when the target companies do implement the saving potential investments, the targets of 10% reduction of the energy consumption and 1% increase in productivity can certainly be met.

Naps Systems' project is an adaptation project with some minor mitigation impacts aimed at avoiding 23 tonnes of CO₂ annually during a conservative estimated lifetime of 15 years. This is due to diesel pump replacement. In addition, approximately 41 tonnes of CO₂ can be sequestered annually. The main objective, however, is to address food insecurity via increased agricultural production. It will only be possible to draw the final conclusions of the impacts the project has had on food security after the next rainy season.

In terms of adaptation, this project is helping people in Northern Benin to prepare for a potentially hotter and drier world as the region is highly vulnerable to climate change due to its geographic location and the strong dependence of its population on rain-fed agriculture and livestock. The solar market garden provides several adaptation mechanisms – ranging from drip irrigation to make the most efficient use of water resources, to solar pumping from deep wells – which provides a water source that is not as dependent as surface water sources on short-term climatic factors such as periodic drought. In addition, the careful application of water through drip irrigation is much more conducive to maintaining the fertility of the soil than traditional flooding techniques, which are not only inefficient, but also wash away more nutrients. Furthermore, special varieties of drought- and heat-tolerant plants are being used in the SMGs

Orgut's project has built adaptive capacity to climate change in Kenya through three components which have 1) improved the scientific knowledge of possible climate change in Kenya and its impact on water resources; 2) provided practical guidelines on adaptation to such changes in climate and water resources and to facilitate catchment planning and activities in consideration of climate change; and 3) implemented actions to address climate change in critical sub-catchments. The critical factor in the achievement of the results was the full engagement and participation of Local Partners.

In line with previous studies, the analysis suggests a general significant warming of the area based on a "business-as-usual" emissions scenario. The increase in temperature - as compared to 1961-1990 may vary from 0°C to 3°C for 2020-2049, while simulations predict an increase in temperature for the "far future" (2070-2099) to be in the range of 2.5°C to 6°C, depending on the season and location. A clear gradient seems to emerge between the coast and the western side of the country. Higher temperatures result in increased evaporation and precipitation in the inland, whereas the coast may be drier. Erratic weather patterns may result in flash floods and recurrent droughts.

In addition, some activities were implemented on the ground including abstraction control, modification of water intakes, water abstraction surveys, river bank protection, erosion control activities, nursery establishments, development of settling ponds, and composting pits, as well as installation of fish ponds.

Vi-Skogen's adaptation project in the Kenyan Mount Elgon water catchment area established Sustainable Agricultural Land use Management (SALM) practices. The Mt Elgon project area faces challenges such as severe soil erosion and degradation, which is aggravated by poor farming practices. Poverty levels have been rising, especially among the households that are not practicing improved farming systems.

In addition to SALM practices, the project created 186 group nurseries, planted 246,990 indigenous trees on farms and riverbanks, and established 326,865 metres of short-term trees for soil erosion control. Some 6,940 households were trained in soil and water conservation methods, with 4,187 adopting the methods, and 3,739 households were trained in sustainable land management practices with an 80% adoption rate. Furthermore, 2,910 households have adopted energy conservation devices and alternative energy utilisation. There has been a transformation in the community's approach to the way it implements sustainable farming, accompanied by a greater understanding of climate change and its potential effect on the livelihoods of the people. Thus, the adoption of activities such as tree establishment will support the population to reduce the impact of climate change on everyday lives.

While mainly a capacity building project, in terms of climate change mitigation, the direct reductions of the **Raw Materials Group's** project at the Agbogbloshie site in Accra, Ghana were estimated to amount to some 90-100 tonnes of CO_{2e} from 500 kg of increased recycling of printed circuit boards. In addition, recycling of other Waste Electrical and Electronic Equipment (WEEE, mainly Fe, Al and Cu) in Ghana could save up to some 100,000 tonnes of CO_{2e}/a. Assuming that it were possible to recycle all Electrical and Electronic Equipment (EEE) entering the market without delays in storage or dumping and assuming the EEE growth rate in Ghana is some 8-10% for the coming 5 years, as is the case in other developing countries, the savings potential would be in the order of up to 400,000 tonnes by 2017. For the whole of Africa, the total potential savings could theoretically be considerable, in the order of up to 10-20 million tonnes per year. It should, however, be noted that recycling methods, transportation emissions and other factors could have considerable impacts on the estimated reduction potential.

The Danish Red Cross' community-based adaptation project in the Kenyan town of Isiolo enhanced over 15,000 vulnerable community members' access to safe water to take the share of people with access to safe water from 29% to 75%. A total of nine LIFELINK water point systems have been established providing solar driven water pumps. In addition, the project has improved the local Kenyan Red Cross Society's (KRCS) capacity for climate change adaptation measures by training 30 KRCS members on the basics of climate change, on the ways of adapting to it and on how to mainstream climate change into development programmes. The project has also mitigation impacts by replacing the diesel pumps. A total of approximately 40,000 tonnes of CO₂ could be reduced over the 15-year lifetime of the LIFELINK technology.

3.2.3. Development impacts

The development impacts of NCF1 projects consist mostly of improvements in livelihood, nutrition and food security, as well as in health and safety. The development impacts of NCF1 projects have also reached women: improved cooking stoves have reduced the time women spend in collecting fuel wood and, thanks to the vicinity of solar powered water pumps; their time spent in fetching water has equally diminished.

The **Naps Systems'** project also reduced the time women spend on irrigation. The development objectives of the project in Benin were to generate income for rural farmers and improve their nutrition and health. As a result of the project, eight villages/women groups in the Commune of Kalalé have received solar powered pumps, which provide drip irrigation and enable the villages to produce, grow and partly sell vegetables around the year and also during the dry season. The gardens will produce 2-3 yields per year. Another result of the projects that the direct beneficiaries of 2,717 (the farmers and their immediate families) gain better quality nutrition, as well as incomes from selling the vegetables, raised awareness and learning. The number of indirect beneficiaries (the combined populations of the project villages) is 38,400.

The most meaningful evaluations of the new gardens in terms of food and income production will not be made until after the first full dry season – which begins in October-November 2013 and ends in around April 2014. However, the women gardeners have already now claimed that they spend 50% less time on irrigation work and therefore have more time for other activities.

In some adaptation projects, such as **Diakonia's** project in Bolivia, it is nearly impossible to separate the adaptation impacts from the development impacts. Through participation of the target communities in the studies and pilot projects, the project activities reached, 7,449 people directly and 23,000 indirectly in the municipalities of Palca, Curahuara de Carangas and Turco; 1,104 inhabitants (493 women, 587 men) in the Sajhuaya basin communities; 6,026 inhabitants (2,971 women and 3,055 men) in the Sajama National Park and 319 inhabitants of Cosapa (166 women, 153 men). Having elaborated a participatory adaptation plan/strategy, the communities will now be better prepared and able to represent the collective memory for adaptation in communities. Evaluation showed that 93% of men in the Sajhuaya basin, 81% of men in Sajama Park, 91% of women in the Sajhuaya basin and 77% of women in Sajama Park were able to learn how to overcome difficulties of climate vulnerability during project activities and an average of 97% of men and women are willing to implement other solutions to their vulnerability aside of the solutions, such as pilot projects, already agreed within the project.

The development impacts of the **Motiva Services'** project materialised mostly as potential increases in productivity through the adoption of energy efficiency measures in audited companies, as well as awareness raising and capacity building in EE issues. Energy efficiency in small and medium-sized Nicaraguan enterprises is important to achieve the environmental goals set by the Nicaraguan government and regional agreements. The project has enabled dialogue between different market actors and has had a positive impact on energy efficiency issues, both at the practical as well as at the administrative level. This has partly been achieved through the establishment of an Energy Efficiency office in charge of capacity building, technology assessment and energy efficiency awareness raising. If the companies adopt the energy efficiency measures, the targeted 1% increase in productivity can be met.

The development impacts of **Orgut's** Kenyan adaptation projects very much concerned increased potential capacity to adapt to the impacts of climate change. The project has been operated entirely through target country institutions and enhanced Kenyan capacity to address climate change. The systems and skills developed remained in Kenya. In addition, some concrete adaptation activities at the local level were implemented, with direct development impacts such as the establishment of nurseries and installation of fish ponds.

Vi-Skogen's adaptation project has increased the incomes of almost 7,000 households through improved crop and livestock production methods. Farmers in the project area have faced challenges in producing food for the entire year, thus being forced to buy food instead of being self-sufficient in food production. This has resulted in increasing poverty levels. Since the introduction of sustainable soil and land management systems together with improved crop and livestock production methods, farmers are again able to produce sufficient food not only for their own use, but also for sale which has increased their income.

The **Raw Materials Group's** e-scrap project in Ghana has increased the income, health and safety of approximately 5,000 informal scrap workers by showing them how to recover some previously unknown components such as circuit boards and motherboards from mobile phones, etc. It is mostly men who are directly involved in collecting and dismantling e-waste. However, around 2,000 women

are indirectly dependent on the scrap business both as dependents as well as operating small food stalls and selling water sachets. Whilst the project has trained the workers in health and safety matters, their first priority, however, has been income generation. A lesson learnt from the project is that the informal sector cannot be part of a long term sustainable solution for proper and up to standard e-waste management.

The **Danish Red Cross'** adaptation project reached over 15,000 people and provided 9,248 people with access to safe water. Of the beneficiaries, 7,442 are men and 7,843 are women. In addition, a total of 1,400 people benefit indirectly from the project activities. The daily time spent in fetching water has decreased from 80 minutes to 10 minutes. Moreover, the target population has been trained in hygiene and sanitation issues. This, together with access to safe water, will lead to a substantial decrease in diarrhoeal diseases.

3.2.4. *Innovativeness, partnerships and Nordic interest*

Innovativeness, partnerships and Nordic interest are present in all NCF1 projects to varying degrees. In some NCF1 projects, cooperation between the Nordic and Local Partners has been key to the success of projects, such as **Motiva Services'** energy efficiency project in Nicaragua. The project brought together key players in Nicaragua to discuss EE measures together with Finnish experts. Despite some cultural differences between Nordic and Central American actors regarding decision making and scheduling, the partners' cooperation was deemed to be seamless. The same applies to **Orgut's** adaptation project in Kenya, where the engagement and dedication of the local partner, Water Resource Management Authority (WRMA), was considered a major contribution to the project.

In some cases, the Nordic partner's role has been somewhat limited with reduced incentives. On the other hand, in some other projects the main responsibility rested with Local Partners and produced good results. Some challenges in partnerships have also been noted, but with no major impacts on projects. Private-public partnership in DRC's project has been an interesting test case. Implementation was successful despite some initial challenges. The project could be an important showcase for further public-private partnerships – a key element needed for scaling up climate finance.

In **Diakonia's** project, an interesting achievement is the merging of ancient and traditional knowledge of indigenous and farmer communities with sophisticated scientific research knowledge. The innovative network of hydrologic monitoring implemented is unique in the zone and consists of equipment (such as piezometers) that was produced locally using low-cost materials. A team of researchers, university students, technicians, rangers and people of the communities took part in the monitoring. This also allowed the villagers to be prepared for reading measuring instruments in the hydrological cycle in both areas in order to assess the technical indicators, the state of their environment, as well as the presence of "bio-indicators" such as native species of animals and plants.

The innovativeness of **Orgut** project was materialised in that it was the first study to cover both the assessment of climate change from regional state-of-the-art climate modelling simulations and to apply the results to rainfall runoff models and water resources allocation models. The project has been operated through target country institutions and enhanced Kenyan capacity to address climate change. Most of the systems and skills developed remained in Kenya.

The share of co-financing is 39% in NCF1 which indicates good ownership in projects.

3.2.5. Disbursement process

NCF disbursements are based on substantially met milestones (or on bank guarantees in the case of advance payments). Grant agreements typically specify several sub-milestones of an agreed main milestone, which is the basis for payment. In some cases, partial payments have been made for the met sub-milestones when these have been clearly identified. This approach has allowed smooth continued support for the projects without the need to amend the agreements.

All NCF1 projects received disbursements during 2013 and the cumulative disbursement rate is 93%.

Table 1. NCF1 projects.

Grantee	Project
Naps Systems Oy (Finland)	Scaling the Solar Market Garden, Benin
Diakonia (Sweden)	Adapting to Climate Change in Bolivian Andean Community Depending on Tropical Glaciers
CARE Danmark ⁴	Fuel Efficient Stoves in East Africa: Reducing Emissions and Improving Livelihoods
Gaia Consulting Oy (Finland)	GHG Mitigation and Sustainable Development through the Promotion of Energy Efficient Cooking in Social Institutions in Ethiopia
Hifab Oy (Finland)	Demand Side Management for Climate Change Adaption for the Ethiopian Power Sector, Ethiopia
DHI Water Policy (Denmark)	Climate-Proofed Water Conservation Strategies in Northern Ghana
Raw Materials Group AB (Sweden)	Energy efficient recycling of electric and electronic scrap, e-scrap, Ghana
Danish Red Cross	Community based adaptation to climate change through environmentally sustainable water resource management in Isiolo District in Kenya
ORGUT Consulting AB (Sweden)	Building Adaptive Capacity to Climate Change in Kenya
Niras (Ramboll) Natura AB (Sweden)	Providing Assistance for Design and Management of Appropriate Water Harvesting Technologies in Arid Lands of Kenya
Solvatten AB (Sweden)	Enhancing Capacity for Adaptation to, and mitigation of, climate change in Kibera, Nairobi
Vi-Skogen (Sweden)	Mount Elgon Integrated Watershed Management Project, Kenya
Motiva Services Oy (Finland)	Strengthening National Capacities on Energy Efficiency, Nicaragua
Green Resources AS (Norway)	The Bukaleba Charcoal Project, Uganda

3.3. Second call for proposals

3.3.1. Implementation of NCF2

NCF2 was launched in 2010 and the grant agreements were signed in 2011, with most of the original closing dates scheduled for the end of 2013. Three out of 12 NCF2 projects are actual investment projects, five are mainly studies and four combine concrete activities with studies, capacity building and strategy work. Three projects, the Finnish Red Cross project in Malawi, Stockholm Environment Institute project in Ethiopia and the Reykjavik Geothermal project in Rwanda were visited in 2013 in conjunction with other site visits.

Eleven NCF2 projects were under implementation by the end of 2013, with one fully completed project (Pöyry Management Consulting). Three more projects were completed in practice (Norwegian Institute for Water Research, Aalborg University and COWI), but some final documentation was still pending. Finnish Consulting Group's project in Nepal met the agreed milestones, but due to devaluation of the

⁴ The responsibility to complete the project was shifted to the Local Partner, Uganda Carbon Bureau in 2013

local currency, it was decided to implement more activities and to extend the implementation period. Furthermore, Reykjavik Geothermal's project in Rwanda will be completed early.

Some more challenges were observed in general in the implementation of NCF2 as compared to NCF1. Eight out of 12 projects have been or are expected to be extended in order to obtain the planned climate and development benefits. It is, however, likely that most NCF2 projects can be completed substantially as planned, with the exception of one planned early completion due to reasons beyond the grantee's control.

Pöyry Management Consulting's project was completed in 2013. The objective of the project was to contribute to environmental sustainability as well as to poverty and gender equality by facilitating an efficient and sustainable biomass fuel supply for Ugandan and Rwandan tea factories from wood plantations.

NIVA's Sri Lankan project was completed in practical terms in 2013. Only the audit reports were missing at year end. The objective of the project was to enhance the overall resilience of stakeholders to climate change in coastal Sri Lankan cities. The project combined scientific and technical components, spatial planning approaches, training and education modules, and used a broad variety of participatory methods - from focus group meetings to national consultations.

The implementation of **COWI's** project in Mozambique was also practically completed in the end of 2013. The objective of the project was to increase the capacity of local partners and stakeholders in Maputo with regard to adapting urban planning to the impacts of climate change by developing a GIS tool to enable identification of those urban areas most vulnerable to floods.

Despite some initial delays, the **Danish Centre for the Environmental Assessment's** project in Vietnam has been progressing well and was practically completed by the end of 2013, with the final workshop arranged in Ha Noi in December. Another Vietnamese project, the Danish **DHI's** project, finally started moving forward at the end of 2013. Due to delays caused by some pending approvals, the project will require an extension in order to be successfully completed.

Finnish Consulting Group's project had achieved practically all initially set milestones by the end of 2013. However, due to a devaluation of the Nepalese rupee, a considerable share of budget was unspent, thus allowing for an extended implementation of project activities until the end of March 2014.

All the other NCF2 projects are progressing, but various minor challenges and delays have been observed in many projects.

3.3.2. Climate impacts

Six out of twelve NCF2 projects are mitigation projects (renewable energy), and the expected GHG emission reductions are typically quite modest (and also partially indirect) due to the small scale of the projects, i.e. a few thousand tonnes per year if successfully implemented. **KTH's** project activities in Bolivia could lead to substantial emission reductions, potentially even up to 200,000 tonnes a year, if the expected recommendations can be implemented and scaled up.

The completed **Pöyry Management Consulting** NCF2 mitigation project related to sustainable energy supply to six Rwandan and Ugandan tea factories concluded that if the factories implement the

measures recommended by the action plans, the potential CO₂ reduction could be between 144 (low-cost actions) and 794 tonnes a year (high-cost actions). In addition, replacing diesel-based generation with hydro in Rwanda and Uganda could lead to further CO₂ reductions. Action plans introduced renewable energy supply options and energy efficiency measures to decrease greenhouse gas emissions and to ensure that the emissions originating in the tea industry will not increase in the medium and long term. It was, however, noted that tea operations were rather sustainable in the first place.

The key expected adaptation benefits of NCF2 projects are linked to capacity building of the communities and partners involved, understanding potential adaptation measures that are crucial to managing climate-related disasters and facilitating better planning for infrastructure development and better preparedness for flood disaster prevention. The projects will also provide local and national authorities with the relevant tools to address the risk of floods in urban areas and to establish early warning systems.

There are no actual combination projects in NCF2 that would address both mitigation and adaptation. However, many mitigation projects can generate some adaptation benefits – typically by reducing deforestation as in Finnish Consulting Group's project in Nepal or Stockholm Environment Institute's project in Ethiopia. Climate impacts of NCF2 projects will be discussed in detail in the 2014 NCF Annual Review.

3.3.3. Development

NCF2 projects are expected to lead to savings in energy costs in low-income communities, improved indoor air quality, especially for women and children; new employment opportunities and reductions in poverty. Many projects will also build the local capacity to address issues related to climate change adaptation. Adaptation projects can protect vulnerable developing societies, promote stability and contribute to environmentally sustainable urban development. While not a prominent feature of NCF2 projects, several projects also address cross-cutting issues such as gender equality.

If the actions recommended by **Pöyry Management Consulting's** project are implemented, poverty in communities in the vicinity of tea factories is expected to drop due to increased employment opportunities through higher productivity. The project indicated that tea factories play an important role as employers in local communities: the workforce at the factory and in the tea plantations is made up of several thousands. The recommended measures would also benefit women and girls by providing them with better employment opportunities. Branches and tops from tree felling and thinning of the forest plantation are customarily given to local people. This practice should be encouraged since it will result in a less time-consuming supply of wood fuel and will therefore promote gender equity and facilitate girls' school attendance and enrolment rate in the rural areas around tea factories. The impacts and additional development opportunities, however, seem to be rather limited in the current status of tea business with low prices.

Development impacts of NCF2 projects will be discussed in detail in the 2014 NCF Annual Review.

3.3.4. Innovativeness, partnerships and Nordic interest

Innovativeness and partnerships between Nordic and local partners are key NCF objectives. Innovative elements can be found in all NCF2 projects to varying degrees.⁵ In most projects, there are elements that are new to the local context. Reykjavik Geothermal's geothermal project in Rwanda and the planned micro-distillery for cooking fuel in Ethiopia are, for example, the first projects of their kind in the host countries. Gaia Consulting's project is very innovative in that it aims to redirect remittance flows to renewable and energy-efficient appliances in Bolivia. The Norges Vel project in Uganda is taking a holistic view of renewable business development. Aalborg University is planning to integrate climate change considerations into Strategic Environmental Assessment in Viet Nam.

Based on the lessons learned from NCF1, a more balanced role by the various partners has been sought in NCF2 and a strong Nordic partner is involved in every NCF2 project. In practice, the responsibility still varies between projects. In general, a good amount of transfer of Nordic expertise is seen in the NCF2 implementation, whereas technology transfer is not as well presented in this call as in NCF1.

Cooperation between Nordic and local partners has appeared to function well in most projects. Some culture-related challenges were observed. In another case, some challenges in cooperation were noted – these were mainly understood to be linked to limited experience of Local Partner in project type in question.

The share of co-financing is 30% in NCF2, which is somewhat less than in NCF1.

3.3.5. Disbursement process

Disbursements to NCF2 projects have been made, as in NCF1, against substantially met milestones (or bank guarantees in few cases). A conservative approach has been followed: the costs of the project would also need to exceed the cumulative disbursements (*i.e.* disbursement can be less than stipulated in the agreement). Detailed financial reporting has been required. The disbursement rate is 41%.

⁵ Innovativeness was defined in the NCF guidelines as a diffusion of technologies and practices that are new to a given context.

Table 2. NCF2 projects.

Grantee	Project
Gaia Consulting Oy (Finland)	Financing sustainable energy through remittances flows, Bolivia
KTH Royal Institute of Technology (Sweden)	Urban and industrial waste to energy – promoting sustainable development in Bolivia
Stockholm Environment Institute (Sweden)	Demonstrating the Feasibility of Locally Produced Ethanol for Household Cooking, Ethiopia
Finnish Red Cross	Strengthening the resilience of people living in high risk urban and semi urban areas to weather-related disasters, Malawi
COWI A/S (Denmark)	GIS tool for urban adaptation to climate change and flood risk, Mozambique
Finnish Consulting Group	Promoting Renewable Energy Technologies for Enhanced Rural Livelihoods, Nepal
Pöyry Management Consulting Oy (Finland)	Enhancing sustainable energy supply for tea factories in Rwanda and Uganda
Reykjavik Geothermal EHF (Iceland)	Karisimbi Geothermal Prospect, Rwanda
Norwegian Institute for Water Research	Climate Resilient Action Plans for Coastal Urban Areas, Sri Lanka
The Royal Norwegian Society for Development	Sustainable renewable energy businesses in Uganda
DCEA, Aalborg University (Denmark)	Adapting Urban Construction Plans to Climate Change in Vietnam by the use of Strategic Environmental Assessment, Viet Nam
DHI Water and Environment (Denmark)	Building technology in urban flood & inundation forecasting to be applied for operational early warning system in the Ha Noi City, Viet Nam

3.4. Third call for proposals

3.4.1. Contracting

Contract negotiations with the 13 highest ranking applicants were initiated in August 2012. The agreement was signed in 2012. As the due diligence process was completed for most projects before the signing of the grant agreement, the remaining 13 agreements were signed during spring 2013. Concrete milestones were agreed for NCF3 projects, with quantitative targets whenever applicable. One project was dropped during the negotiations due to missing co-financing, but two additional ones were signed.

3.4.2. Implementation of NCF3

In principle, the NCF3 objectives under the theme of *Innovative low-cost climate solutions with focus on local business development* remained the same as those in NCF1 and NCF2, with one key difference: only concrete investment projects were allowed in NCF3 in order to secure tangible climate and development benefits based on the lessons learned from previous calls.

Whilst all projects were well under implementation by the end of 2013, some delays, however, can be observed already at this stage. The two-year implementation period is likely to be too short for the challenging projects focused on business development.

3.4.3. Climate Impacts

Six of the 14 NCF3 projects are mitigation projects, three are adaptation projects and five projects are combination of both. Many mitigation projects will also have considerable adaptation impacts. The expected annual mitigation impacts can vary from a few hundred tonnes up to approximately 20,000

thousand tonnes of avoided CO₂. Mitigation impacts are derived from the adoption of renewable energy sources, especially by replacing traditional wood charcoal with biomass or more efficient water purification systems.

Adaptation measures focus, for example, on capacity building, but also on improving food security through improved agricultural practices: in the Danish Technological Institute's project in Burkina Faso, the local partner will explore new products by making cassava edible and thus reducing dependency on sorghum, which at times is unavailable. In Bolivia, the University of Copenhagen is setting up cultivation of cañahua, an ancient Andean food crop which can tolerate both drought and frost, and thus mitigate the increased risks that drought and frost have on local food security.

3.4.4. Development

The development impacts of NCF3 are closely linked to the focus of the call, private sector development, and consist mostly of increased income and reduced poverty through job creation. Projects will also build capacity through entrepreneurship training. Other expected development impacts are improved food and water security; improved health and sanitation and reduced time spent by women in collecting fuel wood and fetching water.

3.4.5. Innovativeness, partnerships and Nordic interest

Innovative elements, definition of role and the actual Nordic interest vary also in NCF3 projects.

Clearly innovative elements are present in Norges Vel's project in Tanzania including a biochar component and unique business model including utilising waste heat in baking. Pöyry Management Consulting is setting up apparently the first charcoal kilns of their kind in Ghana, while C.F. Nielsen's solution is to produce briquettes from wood waste in Ghana. Danish Forestry Extension's project is planning to support the production of exotic non-timber forest products. The University of Copenhagen is supporting cultivation of cañahua in the Andean highlands. Cañahua is a highly nutritive crop adapted to extreme climate conditions and has good market potential.

Cooperation between Nordic and local partners has appeared to function well in most projects, while some challenges were also noted. Also some challenges in setting up actual business in some cases are to be further followed up. While the role of Nordic know-how and expertise is clearly evident in all NCF3 projects, there is one actual technology transfer project in the portfolio.

The share of co-financing is 49% in NCF3 when all co-financing is accounted for. When one large project with major co-financing is omitted, the figure would be less. On the other hand, some apparent co-financing in another project is not accounted for.

3.4.6. Disbursement process

As for NCF1 and NCF2, disbursements for NCF3 projects are made against achieved milestones or, if agreed, against an advance payment bank guarantee. A few disbursements were made to NCF3 projects during 2013 mainly because implementation of most projects started later than expected. The disbursement rate was 14%.

Table 3. NCF3 projects.

Grantee	Project
Viegand & Maagøe A/S (Denmark)	NAMA and Innovative Energy Optimisation in the steel sector in Bangladesh
University of Copenhagen – Department of Plant and Environmental Sciences (Denmark)	Promoting cañahua in the Andean highland: a highly nutritive crop with a great market potential, adapted to extreme climate conditions, Bolivia
Danish Technological Institute (Denmark)	Ecological Food Processing Unit, Burkina Faso
Nordic Foundation for Development and Ecology, NORDECO (Denmark)	Cambodian Farmland Carbon (CAFACA) Project
Finland Futures Research Centre (Finland)	Scaling up low carbon household water purification technologies in the Mekong Sub Region, Cambodia and Laos
C.F. Nielsen A/S (Denmark)	Biomass Green Briquette Fuel (GBF) Production (BidiePa) under Kitchen Efficiency Programme, Ghana
Pöyry Management Consulting Oy (Finland)	Pilot Project: Efficiency Enhancement and Entrepreneurship Development in Sustainable Biomass Charcoaling in Ghana
SINTEF (Norway)	Rain Water Harvesting (RWH) for resilience to climate change impact on water availability in Ghana
Niras Natura AB (Sweden)	Business Development Closing the Rural-Urban Nutrient and Carbon Dioxide Cycles, Kenya
Vi-Skogen, The Foundation Vi Planterar Träd (Sweden)	ADAPTea: Climate Change Adaptation for FAIRTRADE Tea Producers in East Africa
DanChurchAid, DCA (Denmark)	Mainstreaming climate-smart agriculture in solar irrigation schemes for sustainable local business development, Malawi
Danish Forestry Extension (Denmark)	Developing low community based innovative solutions to mitigate and adapt with climate change while creating viable local business solutions, Nepal
Norges Vel, The Royal Norwegian Society for Development (Norway)	From Waste to Local Business Development and Vigorous Soil, Tanzania
Gaia Consulting Oy (Finland)	Sustainable charcoal business development, Tanzania

3.5. Fourth call for proposals

3.5.1. Objectives and expected results

NCF4 was approved by the NDF Board of Directors in September 2013. In principle, the rationale of NCF4 under the theme of *Inclusive green growth projects contributing to private sector development* remained the same as in NCF3. The overall objective is to support low-income countries' capacity to mitigate and adapt to climate change and to contribute to sustainable development and poverty reduction, while supporting private-sector participation in development efforts through partnerships.

Projects financed under NCF4 are expected to promote green growth that stimulates low carbon development, alleviates poverty and/or reduces vulnerability and increases resilience to climate change. The rather broad theme includes three focus areas:

- 1) Material and resource efficiency
- 2) Climate-smart agriculture
- 3) Leapfrogging technologies and mechanisms.

Based on the lessons learned and the NCF external evaluation, some changes and fine-tuning have been made to NCF4 design. The proposals will be scored by an evaluation team without NEFCO representatives in order to keep selection of the projects and project management separate. In-kind co-financing has been limited to 10%⁶ and the implementation time extended to 30 months. Stakeholder consultation and monitoring aspects will be further strengthened.

3.5.2. Marketing

The fourth call for proposals was launched in a mini-seminar titled “Nordic Climate Facility (NCF) - Experiences, lessons learnt and the future arranged by NDF, NEFCO and the Finnish Water Forum on 13 November 2013.

The deadline for submitting a pre-qualification proposal was 31 January 2014 via a new online application platform⁷, which was launched and opened to applicants on 9 December 2013. Less information is also required at the pre-qualification phase to reduce the burden for applicants as well as for evaluation. This will also reduce administration costs. Applicants registered for the platform had a possibility to ask questions related to the call by 10 January 2014. It is also likely that many non-eligible pre-qualifications will be eliminated as the platform does not allow submission if the key minimum requirements are not met.

The launch of the fourth call was advertised through the usual communication channels of NDF and NEFCO, their respective websites and social media channels, the climate-I email list, and previous NCF applicants. Nordic cleantech networks, green growth actors and other relevant stakeholders were especially targeted in order to attract new potential applicants for NCF. A small flyer/postcard on the call was also printed and distributed at different events by NDF and NEFCO staff.

4. ORGANISATION AND ADMINISTRATION

4.1. Financial administration

The Funds Administration Agreement between NEFCO and NDF had been amended twice since the launch of the NCF programme. In December 2013, a Restated and Amended Funds Administration Agreement was signed bringing the total funding for four calls to EUR 22.3 million (including some interest earned). The administration is carried out cost-effectively as confirmed by the NCF Evaluation.

The bulk of the implementation, administration and monitoring work related to NCF has been carried out by NEFCO. All final decisions and approvals related to the NCF programme have been taken by the NCF Management Committee chaired by NDF.

4.2. Evaluation of NCF

An external evaluation of NCF started in September 2012 and was completed by the beginning of April 2013. The assignment was carried out by the Nordic Consulting Group, Norway. The evaluation was

⁶ This requirement is likely to reduce the average co-financing share of NCF4, but expected to support ownership.

⁷ www.ncfapplication.org

based on an examination of portfolio data, interviews with different stakeholders, a web survey and field trips to seven NCF project sites.

The evaluation findings stated that NCF fits well within NDF's strategy and targets. The findings also indicated that NCF is a cost-effective scheme which has been successful in delivering results, although it is still too early to say much about the impact and sustainability of most projects under implementation. NCF also compares favourably with a number of other call-based schemes and provides added value as a rather unusual mechanism combining innovation, leverage and partnership. The replies to the web survey confirm that the partners involved have perceived NCF as a useful mechanism.

The report also provided NDF and NEFCO with recommendations for further streamlining of NCF as well as on harmonisation, most of which were incorporated into NCF's operations and affected especially the design of NCF4. Evaluation also noted that the original two-year implementation period is not sufficient – as also supported by practical experience from NCF1 and NCF2.

4.3. Reporting

As before, NEFCO prepared NCF MC Minutes, quarterly reports and the annual reports (Grant Report and public Annual Review) covering the year 2012. NEFCO also filled in NCF project completion reports for each completed project.

Project reporting was based on the progress and financial reports by the grantees linked to milestones. In addition, the grantees prepared a brief NCF Project Summary Report in connection with final reporting. The project specific key results have also been published on the respective project web pages, and more material and updates are being added to the project descriptions. For NCF4, log frame based reporting will be strengthened.

4.4. Dissemination

The progress of NCF projects was mainly disseminated via the respective, regularly updated websites including specific material linked to completed NCF1 projects. A news item was also published on NDF's and NEFCO's websites on some completed NCF projects such as the Naps System's NCF1 project. NCF was also introduced at various meetings and through presentations by NDF and NEFCO staff.

As with NCF1 and NCF2, a Newsletter was prepared on the 14 NCF3 projects selected for implementation. The Newsletter was disseminated to relevant NDF and NEFCO stakeholders in various seminars and meetings, as well as made available electronically through the institutions' web sites. NCF3 projects were also presented individually on NDF's website and linked also to NEFCO's relevant web page.

NCF was also highlighted in NEFCO's Carbon Finance and Fund 2013 Annual review, with a case study on recycling electronic scrap in Ghana. Furthermore, several articles were drafted in 2013 for completed NCF1 projects and there are plans to publish these in various media in 2014.

In 2013, NCF was also subject to some benchmarking, comparison, and awards. The UK's Department for Energy and Climate Change (DECC) and Department for International Development (DfID), who

jointly manage the UK ICF, launched a study into benchmarking and maximising value for money and ensuring robustness of the key indicators in international clean energy and energy efficiency projects.

NCF operations were also studied by FFEM (Fonds Français pour l'Environnement Mondial/the French Global Environment Facility). FFEM supports French cooperation and development policy for global environment protection and provides grants to sustainable development projects in areas relevant to the multilateral agreements on the environment signed by France. NCF was also used as one of the case studies in Practical Methods for Assessing Private Climate Finance Flows study (yet to be published). The study by Gaia Consulting Oy and Overseas Development Institute (ODI) commissioned by the Nordic Working Group for Global Climate Negotiations (NOAK) under the Nordic Council of Ministers, explores the question of mobilised private climate finance through the UNFCCC and within the wider goal of contributing to improved understanding of the role of public finance in mobilising private investment.

In November 2013, Petra Wadström from Solvatten, Sweden, won the Polhem Prize for her innovative water treatment technology. NCF1 project in Kenya was one of the earliest Solvatten projects implemented. The Polhem Prize is Sweden's oldest award for technological innovation and is awarded every other year by the Swedish Association of Graduate Engineers.

In addition, Solvatten's project 'Enhancing capacity for adaptation to and mitigation of climate change in Kibera, Nairobi' was 'highly commended' in the best investment project category of the 2013 Environment, Ethical, Social & Governance Investment (ESGI) Awards.

Linked to NCF3 projects, Hydrologic Social Enterprise Ltd in Cambodia received the National Energy Globe Award for Cambodia 2013. Hydrologic is a Local Partner in Finland Futures Research Centre's ceramic water filter project. The NCF component supports scaling-up of the already on-going Hydrologic's water filter activities in Cambodia (in addition to similar activities in Laos).

5. CONCLUSIONS

Completed NCF1 projects do show tangible climate and development benefits, albeit typically small in absolute terms. Some have more development and/or climate impacts, whereas other projects are seen as more innovative. While in many projects targets are practically fully met, there is some underperformance in a few projects. This is not untypical for development projects.

For completed mitigation projects, the annual direct CO_{2e} reductions vary between 100 t tonnes a year and 4000 a tonnes a year, with considerable indirect reduction opportunities identified via scaling-up and replication potential. For adaptation, the results vary from comprehensive studies, climate modelling, and adaptation strategy work to concrete water harvesting, sustainable agricultural, safe water access, tree planting and erosion control activities – typically closely linked with development impacts.

It is very evident that the multiple criteria used in project selection lead to very different outcomes. Projects are not directly comparable and there is major diversity at the portfolio level – as also noted by the external evaluation. On the other hand, the diversity can be seen as a key feature and strength of the NCF programme.

NCF has shown that it is possible to implement projects in two years in developing countries. In most cases, however, 2.5-3 years would be seen as more feasible as indicated by delays especially in NCF2.

This was also noted by NCF external evaluation and the implementation period for NCF4 has been extended to 2.5 years.

Taking into account the short implementation period, the innovative nature of the programme, the challenging project countries, and new partnerships, some delays, further challenges and underperformance can be expected in the continued implementation of the NCF programme. Especially NCF3 is likely to be challenging, and the actual results are yet to be assessed as to how successfully business ideas can be combined with direct climate and development benefits in developing countries.

Supported by findings of the external evaluation, NCF4 was launched in 2013 for inclusive green growth projects based on NDF's Board of Directors' decision, which also led to an amended NCF administration contract between NDF and NEFCO. Several evaluation recommendations were taken into account in NCF4 design as well as in general NCF work processes.

Administrative costs have been reasonable as also confirmed by the evaluation. However, some further streamlining is planned. Project monitoring and reporting by the grantees will also be fine-tuned. In general, however, no major needs to change the administrative processes have been identified. Some additional needs have been recognised to strengthen the due diligence and supervision processes.

Some further dissemination and increased NCF visibility are also planned in order to support replication of NCF project ideas and to attract new stakeholders to apply for NCF funding.

NCF continues to provide additionality to existing climate financing through supporting new projects and concepts and leveraging co-financing – including private - to NDF grant funding. It is worth noting the balanced portfolio between mitigation and adaptation. NCF has also improved Nordic visibility, as is evidenced by continued interest in NCF funding. NCF has provided new business opportunities to Nordic companies and institutions, and created new North-South partnerships via partnership projects.