

ENERGY, CLIMATE AND SUSTAINABLE DEVELOPMENT

*A Newsletter of
UNEP Risø Centre (URC)
and UNEP*

December 2011



Technology Needs Assessments

—Four countries to complete their action plans

The Technology Needs Assessment project is producing the first results. Four of the 36 participating countries—Morocco, Indonesia, Costa Rica and Mali—are finalizing their Technology Action Plans (TAPs). While Mali and Morocco's TAPs have been completed and are under review, Costa Rica and Indonesia will be completed by COP 17.

Funded by the GEF, the TNA project helps countries define what kind of technologies are best suited for their climate change mitigation and adaptation efforts, and what is the best way to get them up and running. TNAs also present an opportunity to track evolving needs for new equipment, techniques, knowledge, and skills for mitigating greenhouse gas emissions and reducing vulnerability to climate change.

Developing a high-quality TNA is a complicated endeavour, requiring familiarity with market conditions such as end-user characteristics, financial and institutional barriers, local capacity for innovation, regulatory policy, and frameworks. In addition to providing much needed support throughout the TNA process, the project also helps countries take the next step of developing TAPs that will enable and facilitate the smooth transfer of the selected technologies. TAPs include diffusion targets, investment requirements, practical solutions for removing policy, regulatory and technological barriers, and financial incentives for technology users, owners and suppliers.

Indonesia, Mali, and Costa Rica will be presenting their TAPs and explaining

their importance at a COP 17 project side-event on November 30 in Durban. At the same side-event, URC will launch Technology Transfer Perspectives, a new publication series that examines different approaches to technology transfer. The first two publications cover both mitigation and adaptation approaches respectively.

Other publications pertaining to the TNA project include the Handbook for Conducting Technology Needs Assessment for Climate Change (UNDP 2010), developed by UNDP in collaboration with UNEP, the UNFCCC Secretariat and the Expert Group on Technology Transfer, as well as four sector-specific guidebooks:

- Technologies for Climate Change Adaptation—Coastal Erosion and Flooding
- Technologies for Climate Change Adaptation—Water Sector
- Technologies for Climate Change Mitigation—Transport Sector, and
- Technologies for Climate Change Adaptation—Agriculture Sector

A fifth guidebook, on climate change mitigation in the agriculture sector, will be published soon. For more information about the TNA project and publications, please visit www.tech-action.org.

For more information, please contact:
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UNEP Risø Centre Turns 20!

On November 4, 2011, UNEP RISØ Centre (URC) celebrated its 20th anniversary in Copenhagen. The event commemorated two decades of “being a visionary institution,



From left to right: Mark Radka, Chief, Energy Branch, UNEP; Hans Larsen, Head of Division, Risø DTU; Anders Bjarklev, President, DTU; Christian Friis Bach, Minister for Development Cooperation(Denmark); John Christensen, Head UNEP Risø Centre(URC), and Danielle Violetti, Chief of Staff, UNFCCC Secretariat.

creating value through social and technical sciences,” in the words of Christian Friis Bach, the Danish Minister for Development Cooperation. The minister attended the celebration along with several leading climate change experts and representatives from UNEP, the World Bank, UNFCCC, Danish government ministries, NGOs, the private sector, and academia. The Minister saluted URC’s team of over 40 scientists from 16 countries, and their continued work on energy, climate, and sustainable development. Anders Bjarklev, President of Technical University of Denmark, the home of URC, pointed out that the ongoing discussion around green growth and low carbon development is as important and urgent as ever. The Minister agreed, noting that people around the world have taken tangible steps to address climate change and that there is every reason to be hopeful. “Green growth and sustainable development is possible,” he said, “and URC should continue to play its pivotal role in bringing in science as key to the solutions in this endeavour”.

FIRM— Supporting countries embarking on a Low Carbon Development path

Launched in July 2011, Facilitating Implementation and Readiness for Mitigation (FIRM) is already up and running, with scoping missions in Ghana and Morocco, two of the nine participating countries. Funded by the Danish government and jointly implemented by UNEP and URC, the project will support Costa Rica, Senegal, Ethiopia, Vietnam, Indonesia, Ghana, and Morocco strengthen their national mitigation plans and get a “quick start” on identifying and elaborating Nationally Appropriate Mitigation Actions (NAMAs). Collaboration with Mexico and South Africa will focus on using their experiences in a south-south collaboration. The programme builds on existing mitigation analyses, such as Technology Needs Assessments (TNAs), allowing partner countries to quickly engage and rapidly move from project planning to implementation.

FIRM helps countries overcome non-financial barriers to NAMAs with a package of support services that is complete, but flexible. Country activities support national climate and development plans and priorities, while results feed directly into the UNFCCC process, helping build confidence in broad multilateral solutions to climate change.

For more information, please contact:

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GNESD and IRENA—Working Together To Expand Renewable Energy Access

The UNEP-facilitated Global Network on Energy for Sustainable Development (GNESD) recently signed a Memorandum of Understanding with the International Renewable Energy Agency (IRENA), with the intent of pooling resources to improve renewable energy access in developing countries. This new partnership will work together to find renewable energy solutions to the energy access puzzle, sharing knowledge and pinpointing synergies that optimize both organizations' objectives.

The partnership's first joint undertaking will be an in-depth study examining ways to overcome the roadblocks obstructing access to renewable energy electricity programmes in developing countries. The final report will present overviews of sustainable rural electrification for Africa, Asia, and Latin America, and include several case studies.

For more information, please contact:
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Sustainability indicators and Low Carbon Transport in India



Sustainability indicators are essential tools for measuring just how sustainable a proposed transport system might be—which is why the Promoting Low Carbon Transport in India project has been putting them front and centre during recent stakeholder workshops. Designed to create a policy environment that is conducive to building sustainable transport systems in Indian cities, this year-old project has taken a decisive step forward by conducting two workshops that brought together the project's three main partner institutions—the Indian Institute of Management, Ahmedabad, the Indian Institute of Technology, Delhi, and CEPT University—with academics, experts, representatives from NGOs, and other stakeholders to identify the indicators necessary for measuring sustainability.

Identifying the right infrastructures and services is crucial to establishing a vision of India's low carbon transport future, and the biggest challenge is finding those that will accommodate the country's growing mobility demands while simultaneously reducing the negative impacts of that growth. A winning strategy requires an integrated approach using measures that enhance mobility while minimizing carbon intensity. The indicators selected during the workshops will help India make these important decisions, and steer its transport sector down a sustainable low carbon path.

Sustainability indicators make it possible to measure progress in terms of social, development, and environmental outcomes, instead of simply measuring economic performance. The project has established indicators on two levels: macro (or national) and city. On a macro level, the indicators address subjects like energy security, cost, subsidies, and air pollution. On a city level, indicators include passenger access, travel time, infrastructure, safety, land use, and public health, among other issues. Reports on the outcomes of both workshops are available on the project's website (see below for address).

The two workshops covered different topics. While the first, held in Ahmedabad last August, focused mainly on the sustainability indicators discussed above, the second, held in New Delhi in October, also examined an integrated assessment of the transport sector in India, using an integrated modeling framework that projects impacts from 2010 to 2050. This workshop also looked at methodologies for creating low carbon mobility plans for Indian cities. The low carbon mobility plans would provide a long term strategic approach for project development under the Jawaharlal Nehru National Urban Renewal Mission. This programme aims at helping cities expand and improve access to low carbon transport options like walking, cycling, and public transit.

Case studies were also highlighted during the New Delhi workshop, where examples of metro transport systems, bus rapid transit, and dedicated rail freight corridors were presented and discussed. Lastly, the final results of the discussions and surveys identifying sustainability indicators were presented. The macro indicators will be used to develop alternative scenarios for a low carbon pathway, making projections up to 2050, while the city indicators will be used for low carbon mobility plans, projecting ahead 20 years to 2030.

Promoting Low Carbon Transport in India is jointly implemented by UNEP and URC, and funded by the German government's International Climate Initiative. For more information, and to download documents pertaining to the sustainability indicators, workshops, and other issues, please visit the project's website: www.unep.org/transport/lowcarbon.

For more information, please contact:
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Scaling up carbon assets in Africa – ACAD



Woman holding a LED NURU light in Rwanda

The pilot phase of the African Carbon Asset Development (ACAD) Facility is coming to a close having already delivered impressive results: 14 carbon projects in 9 countries have received ACAD support and another 20 will soon be brought on board. In 2011 alone, ACAD arranged roughly US\$ 1 million in support to diverse, highly replicable GHG reduction projects across Africa. This has enabled landmark projects such as the Lake Turkana Wind Power project—Africa's largest

wind power deal—to get registered under the U.N. Clean Development Mechanism (CDM). Similarly, eco-entrepreneurs in Mozambique, Mali, Burkina Faso, South Africa, and Rwanda are using ACAD support for business and project feasibility planning in innovative ways that integrate carbon revenue into their business models. Over 300 bankers and other representatives of African financial institutions have similarly received advanced training on carbon investment at regional workshops, and benefited from the guidance of a full-time staff expert in Johannesburg.

Designed to help African banks and entrepreneurs overcome market entry barriers to the carbon market, ACAD shares the costs and early-stage risks of developing carbon projects. The facility offers a range of services, bridging the technical expertise on carbon and energy finance of UNEP & URC with the African footprint and banking know-how of Standard Bank Group. For example, ACAD offers hands-on training for local banks, technical support for project developers, and targeted grants for carbon project transaction costs.

In the scale-up phase, ACAD will bring another 20 projects to financial closure in Sub-Saharan Africa, two-thirds of which are expected to be located in least-developed countries. Co-funding for this next phase is in the final stages of being mobilized with a new call for projects planned for December 2011. For more information on ACAD's grant making and project successes, please visit the website: www.acadfacility.org

For more information, please contact:
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Two New Knowledge Tools:

A new knowledge tool for improving energy access

A new knowledge tool will be launched at COP 17: the GNESD Energy Access Knowledge Base. This new knowledge tool provides easy access to well structured and searchable information about energy access initiatives worldwide. It collects case studies in Africa, Asia and Latin America including policies, projects and programmes which have helped increase access to energy services for households, communities, and small-scale businesses.

The tool was designed for policy makers, researchers, practitioners, and others interested in the energy access issues. The GNESD Member Centres are the main contributors to the knowledge base; the website will be maintained by UNEP Risø Centre.

For more information, please contact
John Christensen, joch@risoe.dtu.dk

A platform for sharing knowledge: AfriCAN Climate

A consortium of 10 organizations from eight different countries—including URC—is set to create a vast web-based knowledge platform for climate change research in Africa. Coordinated by WIP Renewable Energies, the AfriCAN Climate Knowledge Platform aims to be interactive, multimedia, pan-continental, multi-lingual, and interdisciplinary, making it possible for stakeholders throughout Africa to access vital information on research results and good practices.

URC's role will be to identify mature and successfully implemented good practice cases. Given its experience in low carbon development and climate change issues in developing countries, URC has accumulated a large store of examples of good practices in Africa. By the time the knowledge platform is launched, it should include at least 30 case studies.

For more information, please contact
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URC partners with its new neighbour: The Global Green Growth Institute

In May 2011, the Global Green Growth Institute (GGGI) opened its Copenhagen branch at the Technical University of Denmark, Risø Campus—right next door to URC. GGGI is a non-profit organization dedicated to promoting “green growth,” i.e., economic growth that reduces carbon emissions, increases sustainability, and strengthens climate resilience. Its organizational structure is interdisciplinary, multi-stakeholder and driven by emerging and developing countries.

The first collaborative effort between URC and its new neighbour was the 2011 Perspectives report, *Progressing Towards Post-2012 Carbon Markets*. The publication focuses on the role of carbon markets in low carbon development and green growth, and how they can help fill sustainability gaps in a post-Kyoto world.

URC and GGGI are now working together on a project in the United Arab Emirates designed to develop a national Green Growth Plan. URC will lend a hand in the capacity-building component of this three-year partnership between GGGI and the UAE Ministry of Foreign Affairs.

Perspectives can be downloaded at www.acp-cd4cdm.org. For more information about GGGI, please visit the GGGI website at: www.gggi.org

The Green Facility focuses on the Maldives and Ghana

After a two-year first phase that provided CDM capacity development to five Sub-Saharan African countries, the Green Facility has now branched out into the Maldives and Ghana. Funded by Danida, the Green Facility was created to provide developing countries with technical assistance and capacity building so they can integrate the CDM into their national economic development plans and support the objectives of the Nairobi Framework.

In August 2011, the Maldives Ministry of Housing and the Environment signed an Agreement of Collaboration with URC with the aim of creating CDM projects and easing the Maldives' entry into the global carbon market. Once this capacity-building project is completed in 2013 the Maldives should be able to identify, design, approve, finance, implement, and monitor CDM projects that not only address their country's sustainable development priorities, but also offer a cost-effective way for carbon credit buyers to fulfill their obligations under the Kyoto Protocol.

One of the most exciting aspects of the Maldives collaboration is the Zero Carbon Action Plan, which sets a goal of achieving carbon neutrality by 2020. In order to reach this target, this plan will offer a two-track approach: immediate objectives for capping GHG emissions, and long term measures and policies for pursuing those objectives. At the time of going to the press, the launch was scheduled for the end of November 2011, with meetings planned to cover a range of issues effecting the electricity, tourism, transportation, and waste sectors, as well as setting down the basics of a Master Plan.

So far, the Green Facility in Ghana is focusing on supporting a low carbon development strategy and specific

CDM and NAMA projects, such as using bioenergy to fuel transport, Bus Rapid Transit schemes, and other ventures aimed at reducing GHG emissions.

The Green Facility is designed and implemented by URC and funded by the Danish government. For more information, please visit the project's website: www.uneprisoe.org/greenfacility.

**For more information, please contact:
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Navigating the CDM Process in Africa, the Caribbean, and the Pacific

URC is helping to make the Clean Development Mechanism (CDM) process more manageable for African, Caribbean, and Pacific (ACP) countries. A continuation of the successful CD4CDM project, the CDM Capacity Building Programme of the MEA ACP Project is helping developing ACP nations overcome CDM administrative hurdles and gain access to the carbon market through training, expert advice, and consultations on CDM project identification, design, and implementation.

Twelve countries are participating in the URC-implemented project: Angola, Belize, Botswana, Côte d'Ivoire, Cuba, Malawi, Nigeria, Rwanda, São Tomé and Príncipe, Trinidad and Tobago, Fiji, and Vanuatu. As the end of the first commitment period of the Kyoto Protocol approaches in 2012, these countries are diligently polishing national regulations and consolidating their national CDM project portfolios. As part of the project activities, URC is also supporting the development of national CDM project portfolios. Currently, 28 PINs have been developed in the energy and waste sectors (2 in Belize; 6 in Botswana; 3 in Malawi; 15 in Cuba; and 2 in Rwanda) and two

PDDs in Cuba, both in energy efficiency, are in the validation process (please see the PIN and PDD documents at www.acp-cd4cdm.org under 'other project sites' in country websites).

The project has also conducted a number of training workshops on various steps of the CDM project cycle. Verification and validation processes were the focus of workshops held in Belize (17–18 August), Botswana (7–8 September), and Nigeria (14–15 September). Two regional scope workshops were also held in Trinidad and Tobago (8–10 November) and Fiji (31 October–3 November).

The many facets of participating in the CDM were discussed in detail at the African Carbon Forum and the Latin American Carbon Forum, which took place in July and September, respectively (see article below).

For more information about the MEA ACP Project, please visit www.acp-cd4cdm.org, or contact Miriam Hinostroza at milh@risoe.dtu.dk

Carbon Forums – Everything you always wanted to know about the CDM

Complementing the efforts of the ACP-MEA project (see above), the Latin American Carbon Forum (LACF) and the African Carbon Forum (ACF) provide both established players and potential participants a chance to meet, exchange ideas, and learn new strategies for making the most of the global carbon market. In 2011, over 900 project developers, financers, entrepreneurs, forestry specialists, government officials, and others attended the LACF in San José, Costa Rica, which took place in September, while more than 1,100 participated in the ACF in Marrakesh, Morocco in July. Both outgrowths of the Nairobi Framework, the forums demonstrated the benefits

of regional cooperation in extending the CDM's reach. As Henry Derwent, President and CEO of the International Emissions Trading Association put it at the ACF, "For commercial as well as political reasons, the carbon offset market is now focused on Africa, whether for CDM projects or voluntary offsets, renewable energy, forestry, or land use. The ACF is helping Africa understand and seize these opportunities." The next Africa Carbon Forum is scheduled to take place in Addis Ababa, Ethiopia in April 2012.

For more information please see www.africacarbonforum.org

New Publications

Progressing towards post-2012 carbon markets



The annual Perspectives Series features a topic of pivotal importance to the global carbon market. The series seeks to communicate the diverse insights and visions of leading actors in the emerging global carbon market to better inform the decisions of professionals and policy makers. Progressing towards post-2012 carbon markets focuses on the role of carbon markets in contributing to low carbon development and new mechanisms for green growth.

A primer on Framing Nationally Appropriate Mitigation Actions (NAMAs) in developing countries



This UNEP primer aims to contribute to the clarification of NAMAs by presenting the basic principles, proposing some possible elements of a national LCDS and NAMA preparation process, and provides a template for NAMA articulation. These proposals are not presented as ultimate thoughts, but as specific ideas for discussion and practical testing.

Overcoming Barriers for Transfer and Diffusion of Climate Technologies



This guidebook provides practical and operational guidance on how to assess and overcome barriers facing the transfer and diffusion of technologies for climate change mitigation and adaptation. It is designed to support the analysis of specific technologies, instead of pursuing a sectoral (e.g. transport) or technology group (e.g. renewable energy) approach. Given that there is no single solution to enhancing technology transfer and diffusion policies need to be tailored to country-specific context and interests, this book presents a flexible approach, identifying various assessment options and tools for analysts and decision makers.

TNA Guidebook: Financing Mitigation Projects – Renewable Energy, Energy Efficiency, and Waste Management

This guidebook is developed to help countries identify and access financial resources for their climate change mitigation projects. Covering both multilateral and bilateral financing sources and private financing sources, it focuses on mitigation projects in the prioritised mitigation sectors of

renewable energy, energy efficiency, and waste management. It provides hands-on guidance on how to prepare high quality project proposals and will be useful to a broad range of stakeholders from government institutions, non-government organisations, and the private sector.

Diffusion of renewable energy technologies: Case studies of enabling frameworks in developing countries



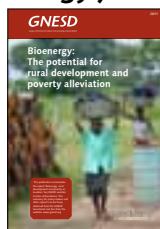
This edition of the Technology Transfer Perspectives Series focuses on how to create an 'enabling framework' for the diffusion of renewable energy technologies in developing countries, i.e., going beyond technology transfer to the scaling-up of investment. Through 9 articles including several case studies from around the world, this edition provides examples of policies for the diffusion of specific technologies such as solar, wind and biomass, as well as the establishment of broader frameworks targeting a portfolio of renewable technologies.

Technologies for Adaptation: Perspectives and Practical Experiences



This edition of URC's Technology Transfer Perspectives series brings 10 articles from a number of adaptation experts and practitioners around the globe. Each article presented discusses issues related to the definition and application of the concept of 'technologies for adaptation'. It is hoped that the insights, experiences and recommendations shared in this collection of articles will inspire a broader international debate on the concept and practical application of technologies for adaptation.

Bioenergy: The potential for rural development and poverty alleviation - a Summary for Policy Makers published by the Global Network on Energy for Sustainable Development (GNESD)



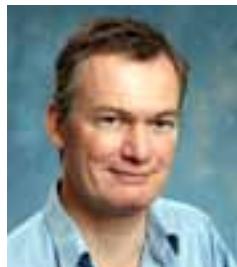
The publication 'Bioenergy and Rural Development for Poverty Alleviation' in which GNESD Centres in Africa, Asia and Latin America analyzes biomass resource potential and energy policies promoting the deployment of bioenergy and how bioenergy can be effectively employed in bringing about rural development and poverty alleviation in 18 countries across the globe. The publication provides policy recommendations for consideration by decision makers in promoting the use of bioenergy in developing countries and emerging economies.

Staff Changes



Cosmas M.O. Ochieng
Climate Change Expert

Cosmas Ochieng joined UNEP Risø Centre on 1st September 2011. He holds a DPhil in Development Studies from Oxford University. He previously worked on a number of development and environment policy issues (agriculture, land, water and international trade) for various organizations including Lancaster University, IFPRI (International Food Policy Research Institute), Ecoagriculture Partners and ActionAid, UK. At UNEP Risø Centre, he is a member of the Climate Strategies and Resilient Development Programme.



Søren Lutken
Senior Advisor

Søren Lutken has a background from private consulting in finance and environment related project development as well as almost 15 years of public administration in the Danish Ministry of Foreign Affairs. He holds a PhD in corporate investment strategies for CDM on the basis of which he administered the Danish bilateral climate change programme with China from 2006 to 2010. He is the author of 'Corporate Strategies and the CDM' (Edward Elgar © 2008). He joined UNEP Risø in August 2010 where he is a member of the Energy and Carbon Finance Programme.



Denis Desgain
Climate Change Expert

Denis Desgain joined UNEP Risø Centre on 1st August 2011. He holds an Msc in Life Sciences and a PhD in Agronomical Sciences and Biotechnology. From 1998 to 2004 he worked as a researcher in Europe and in Cuba on a number of scientific topics (plant physiology, plant molecular genetics, and water quality and sanitation). From 2005 to 2011 Denis worked for the UNDP Country Office in Cuba as Energy & Environment Programme Specialist. At UNEP Risø Centre, he is a member of the Energy and Carbon Finance Programme and works on different issues related to planning and climate change.



Daniel Puig
Senior Climate Change Expert

Daniel Puig joined the UNEP Risø Centre on 1st July, 2010. He holds a MSc in Biological Sciences and postgraduate degrees in environmental management and environmental legislation. In 1994, Daniel worked in Finland's Water and Environment Research Institute on water quality issues. He then worked for COWI A/S, a consulting company based in Denmark, on analyses of European Union environmental policies. Between 2001 and 2011 he worked for UNEP's Division of Technology, Industry and Economics, mostly on issues related to climate change mitigation. At the UNEP Risø Centre he is a member of the Cleaner Energy Development Programme.



Sudhir Sharma
Senior Climate Change Expert

Sudhir is working with Energy and Finance team at UNEP Risø Centre (Technical University of Denmark). His work is focussed on developing country mitigation strategies and actions, including market and non-market mechanisms to support them. He holds a doctorate in Development Economies and was trained as an Engineer. He brings with rich experience of negotiations from his association with UNFCCC, where he worked on CDM and supporting negotiations under the Bali Road Map, and extensive work before that on policies, developing projects and programmes, and implementation of climate change mitigation in developing countries.



Jyoti Painuly

After spending 14 years at URC, Jyoti is taking a break from the centre and moves to India to join Central Electricity Regulatory Commission (CERC; <http://www.cercind.gov.in/>) where he will work as an advisor.



Anne Olhoff

After two years in Washington DC, Anne has returned to URC to coordinate the work in the Climate Strategies and Resilient Development Programme.

Meet us during COP 17

30 Nov. Durban Country Club 14:30 to 16:30	Framework for Low Carbon Development in Developing Countries – Opportunities and Challenges
30 Nov. Durban Country Club 17:00 to 19:00	Technology Needs Assessment Project: Lessons learnt and presentation of Technology Action Plans (TAP)
2 Dec. IETA Pavilion @ Standard Bank office, Durban 15:30 to 16:45	ACAD Project: Scaling-up investments in the African carbon market
5 Dec. Durban Country Club 9:30 to 13:30	GNESD Network: Energy Access: Eradicating Global Energy Poverty
5 Dec. African Pavilion Room 3 18:15 to 21:30	Energy and Carbon Finance group: Scaling up Mitigation Actions from CDM to NAMAs
8 Dec. ICC, Room 1 16:45 to 18:15	Official Side event: GNESD, Foundation Bariloche and UNF Overcoming barriers to enable affordable and cleaner energy access for the poor

New Research Assistants



Lars Christensen
Climate Strategies and Resilient Development Programme



Pedro Filipe Paralta Carqueija
Energy and Carbon Finance Programme



Mathilde Brix
Cleaner Energy Development Programme



Jacob Ipsen Hansen
Energy and Carbon Finance Programme

E+ provides information on the activities at URC and UNEP. The views expressed here do not necessarily represent those of UNEP, DTU or Danida. Previous issues can be found at www.unepriose.org/newsletters.htm. To receive an electronic or printed copy of E+, please register on our website www.unepriose.org or contact Pia Ris at pirh@risoe.dtu.dk. For all other information or comment, please contact the editor, Mette Annelie Rasmussen (meta@risoe.dtu.dk).

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