



The TNA Project is supported and funded by the GEF

Editorial

I am honoured to introduce the 5th edition of the newsletter of the global Technology Needs Assessment project, which is supported by the Global Environment Facility (GEF).



Gheorghe SALARU

Moldova is now close to completing its TNA process, which focuses on investments needed in the country's transport, housing stock, agriculture and power sectors that will provide proportionally significant GHG reductions, as well as reduce the risk of damage to crops and human health caused by climate change. As with all TNA countries, Moldova's finalised list of prioritised technologies was arrived at through a consultative process, involving a broad range of stakeholders that agreed on a set of appropriate criteria.

Specific technologies that have been prioritised in Moldova include combined heat and power plants, the gasification of municipal solid waste for electricity and heat production and the uptake of hybrid electric vehicles.

More 'low-tech' solutions have been prioritised for the agricultural sector which include various methods of soil tillage and fertilizer use that can yield significant GHG reductions from what is the country's largest economic sector.

On the adaptation side Moldova is also focused on the agricultural sector as well as technologies that can minimise the risk to human health posed by extreme temperatures, including piped water in rural areas, medical units for temporary assistance and building codes to promote the use of passive energy and natural ventilation.

Moldova is using the TNA process to inform environmental policy making and is already working on measures to support the introduction and diffusion of specific climate technologies. However, as is the case with many smaller countries, Moldova faces a challenge when it comes to financing investments in new, cleaner technologies. Much of Moldova's energy infrastructure and public transport dates from the Soviet era and our building stock has low energy efficiency. Therefore, these sectors present 'easy' GHG mitigation opportunities and so we are hoping to attract investors from both the international public and private sectors. In common with most of the TNA countries, we are conscious that market-based reforms to our energy sector are a prerequisite for providing the right price signals to attract investors, as well as the need to minimise taxation and red tape.

Given the need for international cooperation on tackling climate change, it is my hope that countries like Moldova will be able to communicate their Technology Action Plans at the COP18 being held at Doha this year. More broadly, it is my hope that the UNFCCC will continue to provide an effective means for the international community to agree upon how clean and climate-friendly technologies can be transferred at low cost to lower-income countries like Moldova. We must remember that many of the technical solutions to tackling climate change are simple and low-cost, and can be provided in an equitable and business-friendly manner, provided that the right incentives are created at a global level.

Gheorghe SALARU,

Minister of Environment of the Republic of Moldova



Moldova - Trolleybus in Tiraspol

TNA Status update

by Jorge Rogat, URC and Lawrence Agbemabiese, UNEP

The period under review witnessed the continuing refinement of core methodologies and tools. The enthusiastic uptake of these resources yielded concrete results in the form of significantly improved Technology Needs Assessments (TNAs) and Technology Action Plans (TAPs). Specifically, 7 countries have to date completed their TAP reports, with a further 11 completions expected by the end of the year. It is expected that the overwhelming majority – if not all – of the remaining countries will have completed their TAP reports before the end of the project in April 2013. The period was also marked by a strong emphasis on establishing linkages with potential sources of funding for the most promising project concepts emerging from the TNAs-TAPs. To this end, a global workshop on experience-sharing and investment-focused knowledge dissemination targeting potential funders was held in Bangkok 10-12 September 2012. Participants included representatives from all TNA countries and the funding community. Organised in collaboration with UNFCCC and the Asian Regional Centre for TNA, the workshop not only facilitated sharing of implementation experience through interactive networking, but also, created a unique opportunity for the finance community to discuss potential funding for selected project ideas emanating from national TAPs.

For additional project information, please visit www.tech-action.org

Upcoming events

TNA side event at COP 18, 5 December, 18:30-20:00 Room 6

Building capacity for effective national planning and the deployment of clean technologies.

Technology development and transfer is at the heart of the UNFCCC process. The side event will showcase experiences with building national capacity and strengthening skills development for TNAs, TAPs and NAMAs in developing countries through south-south learning and international cooperation. During the side event the participating countries will present their final TAPs and plans for moving beyond TAP completion, to actual implementation of their Action Plans.

Final international dissemination workshop, May - June 2013.

Actions towards climate change adaptation and mitigation - results from the TNA Project

by Angel Valverde and Janeth Mora, Ministry of Environment, Ecuador

Ecuador selected its sectors and areas of study for the Technology Needs Assessment (TNA) project in response to climate change considering both its National Development Plan and National Environmental Policy, whose objectives include promoting climate change mitigation and adaptation actions by using environmental-friendly technologies.

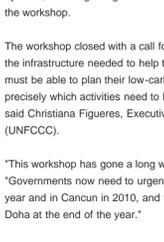
The Ministry of Environment of Ecuador has recently presented its first National Climate Change Strategy which together with the results of the TNA project contributes to the development of the National Plan and capacity building conditions with the objective of creating an implementation mechanism for climate change technology transfer and access to finance.



The three sectors selected for the TNA project were: Agriculture, Energy and Water Resources. Within those sectors the prioritized technologies for adaptation covered water supply for irrigation in agriculture, and management of water quality and quantity. The mitigation technologies, on the other hand, included management of solid and liquid waste in the livestock sector as well as power generation through municipal solid waste.

The preliminary result of the technology prioritization exercise showed the importance of technologies, such as irrigators, which serve as catalysts for both 'hard' and 'soft' technologies. This is especially pertinent when considering climate change adaptation actions that require greater involvement of different stakeholders from civil society.

How do the prioritized technologies and actions correspond with other development plans and initiatives in Mauritius?



Mrs Dominique Sin Lan NG YUH WING, Director of Environment and TNA Coordinator for Mauritius.

Synergies with existing development plans has been one of the key guiding principles of the fully inclusive multi-stakeholder participatory approach adopted within the TNA Project in Mauritius. It is thus no surprise that national stakeholders have, during the MCA process, allocated enhanced weights to those technologies that appear in their sectoral strategic documents and are aligned within the realm of their institutional mandates.

The mitigation technologies that have been retained for TAP, namely utility-scale wind, PV and waste heat recovery from boilers are thus closely linked with the Long-Term Energy Strategy 2009 – 2025 - the blueprint for the development of the energy sector in Mauritius.

It is to be stressed that the Action Plan that resulted from the energy strategy document, which provides the future orientations of Mauritius concerning GHG emission reductions, includes a combination of energy efficiency measures and renewables for the power sector. For instance, a total wind energy installed capacity of 100 MW is expected by 2025, while electricity generation from PV will be 2% of the power mix in 2025. A cumulative 10% efficiency gain in the consumption of electricity relative to the baseline year of 2008 is expected over the same time period. The Action Plan further mentions that guidelines for energy management in industry would be developed in 2012. Works completed in TAP would thus feed and fit into this process.

The 3 technologies prioritized for adaptation in the agriculture sector, comprising of up-scaling of locally proven integrated Pest Management technologies, decentralising pest and disease diagnosis, and gravity fed drip and Mini/Micro irrigation respectively are intrinsically linked to government initiatives to promote rainwater harvesting and conserve ecosystem services while also enhancing farm productivity and farmers livelihood.



All the three water technologies which have been retained for TAP – Rainwater Harvesting, Desalination, and Hydrological models fall within Government initiatives being promoted, e.g. the Government is encouraging the hotel sector to undertake rainwater harvesting as well as desalination of seawater as an alternative water source.

The identified technologies in the coastal zone sector, namely restoration of coastal vegetation, wetland protection, dune restoration and rock revetment have been put forward along with other technologies following a study on coastal erosion around Mauritius in 2003. These technologies have also been recommended in other studies and included in national reports.

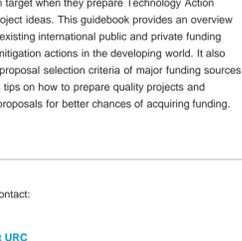
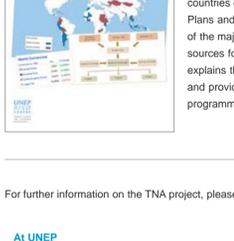
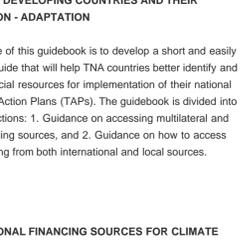
Moreover, the outputs of the adaptation-related technologies within the TNA project are being integrated within the National Adaptation Policy Framework being developed within the Africa Adaptation Programme in Mauritius.

Bringing the TNA community together

A three-day global experience-sharing workshop under the TNA project brought together experts from 36 countries in Bangkok, in September 2012. Organized by the UNEP Risa Centre (URC) and the UNFCCC, the workshop was an opportunity for participants to showcase best practices and share experiences of implementing the TNA project in their respective countries.

Participants not only highlighted the barriers and opportunities involved in the TNA process, but also presented a general outline of their Technology Action Plans (TAPs). For instance, in Georgia, an assessment of the energy sector generated TAPs on efficient construction, efficient wood stoves, and solar water heaters. An assessment of transport issues in Costa Rica resulted in a project idea for a Bus Rapid Transit system in the San José metropolitan area. Likewise, for Indonesia, the TNA process prompted three different project ideas for developing the photovoltaic sector.

In addition, the workshop provided an opportunity for participants to raise important points to be addressed in the future. While acknowledging the significance of the TNA project in engaging more stakeholders to combat climate change and take concrete actions, participants indicated funding of proposed actions as a major concern. "The request for capacity building and access to finance were two important points" said Mark Radka, Head of Energy Branch, UNEP. "UNEP's support does not stop with the TNA process. If called upon, we will work with governments and their relevant partners to support national processes to spearhead the transition to a green economy."



Participating countries called on the Technical Adaptation Committee to work with them to create synergies between international mitigation and executive policy actions such as Low Emission Development Strategies (LEDS) and nationally appropriate mitigation actions (NAMAs) so that future TNAs do not end up as stand-alone initiatives.

During the workshop, UNFCCC led a training session on preparing and presenting project proposals for financing based on the UNFCCC training manual and guidebooks. Four new guidebooks prepared by URC, including two guidebooks on finance for adaptation and mitigation, were also launched during the workshop.

The workshop closed with a call for greater support from the international community in order to build the infrastructure needed to help transform these ideas into reality. "People in developing countries must be able to plan their low-carbon and more climate-resilient futures, and to be able to assess precisely which activities need to be supported with science and technology by developed countries," said Christiana Figueres, Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC).

"This workshop has gone a long way to determine precisely what is required," she added. "Governments now need to urgently press ahead with implementing what they decided in Durban last year and in Cancun in 2010, and to put the finishing touches to the new Technology Mechanism in Doha at the end of the year."

Identifying prioritized technologies for developing NAMAs in Viet Nam

by Nguyen Khai Hieu, Deputy Director General, Department of Meteorology, Hydrology and Climate Change, Ministry of Natural Resources and Environment, Vietnam

Recognizing the role of the development of low-carbon economy and green growth in the context of climate change as well as contributing to the world community to achieve the ultimate objective of the UNFCCC in order to stabilize greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, Viet Nam is promoting preparation and implementation of activities to mitigate GHG emissions in line with Nationally Appropriate Mitigation Actions (NAMAs).

The first five 1.5 MW power generators of Tuy Phong wind power plant, Binh Thuan Province Viet Nam has completed the Phase 1 of the Technology Needs Assessments (TNA) Project funded by the Global Environment Fund and jointly implemented by the United Nations Environment Programme (UNEP) and the UNEP Risa Centre (URC) in August 2012.

The first five 1.5 MW power generators of Tuy Phong wind power plant, Binh Thuan Province Viet Nam has completed the Phase 1 of the Technology Needs Assessments (TNA) Project funded by the Global Environment Facility and jointly implemented by the United Nations Environment Programme (UNEP) and the UNEP Risa Centre (URC) in August 2012. Based on potential sectors to mitigate GHG emissions in Viet Nam such as Energy, Agriculture and Land Use, Land use change and Forestry (LULUCF), the prioritized technologies consistent with the context of Viet Nam have been identified during the implementation of the TNA Project. Two of the 10 prioritized GHG mitigation technologies identified are wind power and biogas. These technologies are evaluated as the most preferred technologies for development of NAMAs in the country.

The National Energy Development Strategy of Viet Nam has set a target to increase the proportion of new and renewable energies by 5% of the total commercial primary energies by 2020, and 11% by 2050. The target has proved that the two chosen prioritized technologies totally fit and will become significant contribution for implementation.

In order to promote outcomes of the TNA Project, the "Facilitating Implementation and Readiness for Mitigation (FIRM)" Project with financial support of the Danish International Development Agency (DANIDA), URC's implementing agency will be carried out in Viet Nam in the period of 2012 – 2013. The main objective of the project is to support international efforts to reduce GHG emissions. In particular, two NAMAs related to promoting the use of wind energy for energy generation, and facilitating biogas capture for energy use will be developed under the Project.

It is expected that the implementation of the FIRM project will provide tools, technical assistance and institutional capacity building for local authorities as well as facilitate the implementation of NAMAs in both energy and agriculture sectors, and finally aim to the development of low-carbon economy and green growth in Viet Nam in the coming years.

Sustainable Social Housing Pilot Project in Georgia

by Murman Margvelashvili - Project Manager Alexander Ramishvili - Architect

Territorial conflicts, environmental catastrophic events and deterioration of existing housing have resulted in a big number of socially vulnerable households in Georgia. More than fifty thousand households are deprived of decent living conditions and are applying to local and central governments for help. Energy costs constitute a high share in expenditures of low income families and therefore reducing energy consumption can substantially improve the quality of their life. Lack of efficient construction legislation and regulations is a lasting problem that prevents radical improvements in energy performance of buildings.

The pilot project promotes energy efficient construction (top priority technology under TNA) by implementing of the model energy efficient social housing for 20 vulnerable families in Georgia. Strong information component will be used to educate the specialists and businesses, provide relevant information to consumers and policymakers, to promote legislation changes. Open and transparent process will ensure fairness to beneficiaries.

Project activities include:

- A one week practical workshop on Sustainable design and construction for architects, students, developers and constructors, with lectures and practical development of competitive conceptual proposals for social housing settlement.
- Design of a typical multi-apartment social housing residential building for 20 families based on the winning proposal using EU efficiency standards aided by international experts.
- A conference-trade show for architects, developers, constructors and material suppliers and donors to demonstrate the developed design, negotiate construction and material prices and solicit the participation of material and equipment providers and funding by donors.
- Erection of 20 family residential houses for socially vulnerable families in Tbilisi.
- Monitoring of construction and operation of the building to generate the price and energy saving information illustrate the use of efficient construction methods and materials and assess the results.
- Transparent apartment allocation and development of financial support schemes including soft loans and revolving funds;
- Ongoing outreach about the project, design, construction process, costs and achieved energy performance.
- Policy analysis and policy recommendations.

The project will remove the main Information Barrier for Efficient construction technology and prepare the grounds for legislation on efficiency in construction. It addresses the needs of vulnerable population and provides relevant information to all market participants. It stimulates sustainable design and construction, promotes efficient materials industry, supports Tbilisi City Hall in meeting the obligations under the Covenant of Mayors, and stimulates the introduction of new efficiency standards in building code. The project can be easily replicated. Tbilisi City Hall supports this pilot proposal.

Recent TNA publications

TECHNOLOGIES FOR CLIMATE CHANGE MITIGATION IN THE AGRICULTURE SECTOR

This guidebook provides information on 26 technologies for mitigation to climate change in the agriculture sector. These 26 technologies are in the areas of cropland management, livestock management, manure and bio-solid management, and bioenergy. It describes what policy makers, agriculture experts and other stakeholders in countries should consider while determining a technology development path in agriculture. Written by eminent scientists from China, India and United States and based on an extensive literature review, this guidebook is expected to stimulate further work on identifying options for climate change mitigation in the agricultural sector within countries.

TECHNOLOGIES FOR CLIMATE CHANGE MITIGATION IN THE BUILDING SECTOR

The guidebook on mitigation for the building sector is set to serve as a platform to assist participating countries to carry out TNA in this sector. Based on the TNA, the Technology Action Plan (TAP) can be developed to identify barriers to the acquisition, deployment and diffusion of priority technologies. Logical and practical actions can then be determined to overcome these barriers, in order to fully materialise the building sector's mitigation potentials. The guidebook puts in place the hard-ware, software and org-ware in a systematic framework, which defines and structures the technologies and practices to mitigate climate change from the most feasible to more sophisticated levels in developing countries' context.

INTERNATIONAL FINANCING SOURCES FOR CLIMATE ACTIONS IN DEVELOPING COUNTRIES AND THEIR APPLICATION - ADAPTATION

The objective of this guidebook is to develop a short and easily accessible guide that will help TNA countries better identify and access financial resources for implementation of their national Technology Action Plans (TAPs). The guidebook is divided into two main sections: 1. Guidance on accessing multilateral and bilateral funding sources, and 2. Guidance on how to access private funding from both international and local sources.

INTERNATIONAL FINANCING SOURCES FOR CLIMATE ACTIONS IN DEVELOPING COUNTRIES AND THEIR APPLICATION - MITIGATION

There are numerous international funding sources developing countries can target when they prepare Technology Action Plans and project ideas. This guidebook provides an overview of the major existing international public and private funding sources for mitigation actions in the developing world. It also explains the proposal selection criteria of major funding sources and provides tips on how to prepare quality projects and programme proposals for better chances of acquiring funding.

For further information on the TNA project, please contact:

At UNEP

Lawrence Agbemabiese
Energy Branch, Division of Technology, Industry and Economics
Agbemabiese@unep.org

At URC

Jorge Rogat
Project Manager and Regional Coordinator- Latin America and Caribbean
jorr@dtu.dk

Ivan Nygaard
Regional Coordinator- Africa
ivny@dtu.dk

Subash Dhar
Regional Coordinator- Asia and CIS
sudh@dtu.dk

For additional project information please visit www.tech-action.org

For more information on UNEP and URC activities, please visit www.unep.org & www.uneprisa.org

The TNA Newsletter provides information on the activities and progress within the TNA project and beyond. The views expressed in the newsletter do not necessarily represent those of UNEP, UNEP Risa Centre or GEF.

TNA newsletter editorial team:

Mette Annelise Rasmussen, meta@dtu.dk
Jorge Rogat, jorr@dtu.dk
Lawrence Agbemabiese, lawrence.agbemabiese@unep.org
Surabhi Goswami, surgo@dtu.dk

