

Current status of the implementation of the results of TNAs including success stories.

Summary:

- This background paper informs on the current status of the implementation of the results of TNAs including success stories.
- The objective of this paper is to support the TEC in preparing its recommendations on guidance on policies and programmes, when reviewing the technology needs from various sources.
- The TEC may wish to consider information contained in this paper when implementing its work plan.

I. Introduction

A. Background

1. To enhance implementation of Article 4.5 of the Convention a framework for meaningful and effective actions (technology transfer framework) was agreed at COP 7, as part of the Marrakesh Accords. The framework aims to develop actions to implement Article 4.5 by increasing and improving the transfer of and access to environmentally sound technologies and know-how.
2. Such actions require a country-driven integrated approach, at national and sectorial levels, cooperation by various stakeholders including governments, multilateral and bilateral institutions, academic and research institutions, the private sector, the donor community and non-governmental organizations. The technology transfer framework covers five key themes, including technology needs and needs assessments.
3. According to the framework the purpose of the TNAs is to assist in identifying and analysing priority technology needs which can form the basis for a portfolio of environmentally sound technologies (ESTs) projects and programmes which can facilitate the transfer of, and access to, the ESTs and know-how.
4. In line with the decision 2/CP.4 the GEF provided funding for more than 90 non-Annex I Parties to conduct TNAs through its interim funding for capacity building in priority areas – enabling activities (phase II) also known as the top-up funding. Within this process UNEP assisted 14 countries and UNDP assisted 78 countries to conduct and report TNAs.
5. In 2008 GEF council requested the GEF to work with UNEP and UNDP to provide an analysis of the experiences and lessons learned from the TNAs carried out by countries that received the GEF funding. The report on experiences and lessons learned was prepared by the end of May 2008 and it includes analysis of TNAs under the top-up project documents, key lessons learned from the TNAs, challenges in TNA work and reporting, financial analysis, and distribution of top up projects by regions.
6. The UNFCCC secretariat was requested by the Conference of Parties (COP) by its decision 3/CP.13 to provide regular updates on progress of the implementation of the results of technology needs identified in TNAs, **including success stories for consideration by the SBSTA at its subsequent sessions**, as appropriate.
7. The COP also decided by its decision 1/CP.16, that the Technology Executive Committee (TEC) shall further implement the framework for meaningful and effective actions to enhance the implementation of Article 4.5 of the Convention adopted by decision 4/CP.7 and enhanced by decision 3/CP.13.
8. The COP by its decision 1/CP.16 decided that one of the functions of the TEC is to provide an overview of technological needs and analysis of policy and technical issues related to the development and transfer of technologies for mitigation and adaptation.
9. The rolling work plan for 2012-2013 of the TEC includes an activity to review technology needs from various sources with a view to strengthen the understanding of technology needs, complement process for national communications nationally appropriate mitigation actions, and national adaptation plans, and support the TEC in preparing its recommendations, guidance, policies and programmes.

B. Scope of the note

10. The note informs on the current status of the implementation of the results of TNAs including success stories.

C. Objective of the paper

11. The objective of this paper is to support the TEC in preparing its recommendations on guidance on policies and programmes, when reviewing the technology needs from various sources.

D. Possible action by the TEC

12. The TEC may wish to consider information contained in this paper when implementing its work plan.

II. Project proposals identified in the first round of TNAs

13. In 2009, the secretariat prepared the Second synthesis report on technology needs identified by Parties not included in Annex I to the Convention¹, for consideration by the SBSTA at its thirtieth session (hereinafter referred to as the synthesis report).

14. Although not considered compulsory by the guidelines² followed by most of the countries when preparing the technology needs assessment, the synthesis report identified that 24 countries presented in their TNA reports concrete project and programme ideas and proposals. The countries often focused on specific projects in their TNAs and commonly addressed the projects' objective, budget, benefits and linkage to national priorities.

15. In total, 266 project ideas were mentioned in the TNA reports, which included large-scale energy and industry individual projects, but also small-scale or low-cost initiatives, and information dissemination technology and programmes, with a total estimated budget of over 11 billion USD.

16. The project proposals covered the major economic sectors such as energy production and consumption, land-use (agriculture and forest management), transport, industry and waste management. Some countries also identified project ideas for technologies for adaptation to climate change, in the areas of crop management, health, systematic observation and monitoring, water management, and information and awareness campaigns. Most of the project proposals took into account the importance of capacity building, public awareness and education, and community development.

III. First survey on implementing TNA results

A. Process

17. At the time the first survey was conducted some 69 non-Annex I Parties had completed their TNA reports. The secretariat prepared in 2010 an inventory of project proposals presented in TNAs.

18. In order to monitor progress in implementation of the TNA results and to ensure the accuracy of the information on project proposals included in the initial TNA reports, the secretariat developed a fact sheets with a questionnaire for TNA coordinators.

19. In response to the request by the COP, the secretariat prepared in June 2010 a survey to follow-up on the status of implementation of the projects proposals identified in the initial TNA reports of the 69 non-Annex I Parties.

20. The secretariat, when undertaking its first survey, contacted by e-mail all 69 Parties which conducted and reported their initial TNA reports. To simplify identification of these reports, the

¹ FCCC/SBSTA/2009/INF.1

² Handbook on Conducting technology needs assessments for climate change; UNDP and GEF, 2004

secretariat also posted these TNA reports on the UNFCCC technology transfer clearing house web-platform, TT:Clear.

21. The secretariat asked TNA project developers to complete the fact sheets online at the special purpose web page³. The replies were provided for each of the projects developed, based on the information in the TNA reports. TNA project developers then sent all the completed fact sheets back to the secretariat.

22. In the questionnaire it was stated that information sharing is one of the key factors to monitor the implementation of technology transfer activities in the context of the Convention. Therefore active cooperation of the TNA coordinators in this survey would assist in highlighting the implementation potential of the TNA results.

B. Results of the first survey

23. By October 2010, 11 out of 69 countries responded to the survey. Of these, four provided information on several projects that have been implemented or were still under implementation at the time of the survey, five countries admitted that none of the project ideas mentioned in their TNAs have been implemented, and two countries considered the project of preparing the TNA as the first step towards future technology transfer implementation, but have not provided any other details of subsequent projects.

24. Of the countries that provided positive responses, Armenia identified 3 projects that have been already terminated (Capacity-building for Climate Technology Transfer and Clean Development Mechanism in Armenia; Yerevan Combined-Cycle Power Plant, and a wind energy project of 2.6MW), 2 on-going ones (Improvement of energy efficiency of municipal heat supply system in Armenia and Utilization of methane from Yerevan city landfill for electricity and heat production) and 1 that was planned to commence in 2010 (a hydropower plant of 80MW capacity).

25. Chile provided details on 6 projects (some still in the design stage, some on going, and some already implemented), all in the transport sector, part of a greater long-term cleaner transport strategy.

26. Jamaica reported a project on the introduction of renewable wave energy technologies for the generation of electric power in small coastal communities in Jamaica, which was at the implementation stage at the time of the survey.

27. Two other projects have been implemented in Uzbekistan (one solar district boiler project and one reforestation project) with a total budget of about 75,000 USD.

28. The financing for these projects came from various sources world-wide, including the Japan Bank of International Cooperation (1 project), Canadian International Development Agency (2 projects), other developing countries governments (Iran, 1 project), World Bank in collaboration with USAID (1 project), the GEF (3 projects, including one in TT-Pilot, GEF-4), and national governments and local institutions of countries these projects were implemented in (7 projects). Two of the projects come under the Clean Development Mechanism scheme (one funded by UNDP, one by a private company in Japan).

29. With regards to the projects reported as not been implemented yet, most of the countries identified the lack of financing opportunities as the main barrier to implementation. Lack of sufficient resources (technical, human and financial ones) has also been highlighted as a barrier that hindered the implementation of the projects.

³ <http://www.surveymonkey.com/s/TNAimplementation>.

IV. Second survey on implementing TNA results

A. Process

30. One of the lessons learned from the first survey was that there did not seem to be a procedure in place by the implementing agencies to track the coordinators of the initial TNA reports. Hence it was challenging to contact the right persons during the first survey. This was reflected in the limited responses to the facts sheets.

31. An opportunity to gain more results came with the final phase of the global TNA project implemented by the UNEP on behalf of the GEF. During this project the contacts of the national teams were provided to the secretariat and facilitated enhanced information exchange between countries and the secretariat.

32. The UNFCCC secretariat contacted in early February 2013 national TNA coordinators of 21 countries which updated their already existing TNA reports within the global TNA project⁴.

33. The secretariat prepared a survey to collect information on the status of the implementation of the results of TNAs of Non-Annex I Parties as identified and reported in the first round of TNAs, from 1999 to 2009, including success factors.

34. The two essential elements of the assistance from countries to the secretariat were to identify whether some of the project ideas which countries reported in the initial TNA report, were implemented; and the main factors which contributed to the successful implementation of these project ideas.

35. The explanatory letters, which included a web links to their initial TNA reports, were sent to the countries. In order to simplify and also harmonize countries' effort, an easy-to-fill template including a questionnaire was developed by the secretariat and attached to the letters.

36. Countries were asked to fill the templates in accordance with questions provided for each of the project ideas identified in the initial TNA report, and send it back to the secretariat. The template was developed for implemented and not implemented project ideas. Two sets of separate questions were developed for each of the two categories.

37. In the case of implemented project ideas, the questionnaire asked for the time when the project was implemented, the budget of the project, the financier of the project, and the success factors that facilitated project implementation.

38. In the case that project ideas were not implemented, the questionnaire covered the following: whether the project idea was submitted to a financial provider, the budget of the project idea, whether the implementation has ever started or whether it has never started, and barriers (failure factors) that hindered the project proposals from implementation.

39. In the questionnaire it was stated that the contribution of the countries to this survey was essential to assist Parties, and relevant bodies under the Convention, including the TEC and the CTCN, to understand the status of the implementation of the TNA results from the initial round of the TNAs, and to learn and build on them when assisting Parties in conducting, reporting and implementing their TNAs in future.

B. Results of the second survey

40. By the beginning of March 2013 the secretariat received 12 replies from 12 countries and 40 filled fact sheets from 6 countries. General responses were provided by Azerbaijan, Bhutan, Georgia,

⁴ Azerbaijan, Bhutan, Cambodia, Cote D'Ivoire, Dominican Republic, Ecuador, El Salvador, Ethiopia, Georgia, Ghana, Indonesia, Kenya, Lebanon, Mali, Mauritius, Lao People's Democratic Republic, Peru, Senegal, Sri Lanka, Thailand, Vietnam.

Ecuador, El Salvador, Indonesia, Kenya, Lebanon, Mali, Senegal, Sri Lanka, and Vietnam. The 40 facts sheets were delivered by Azerbaijan, Ecuador, El Salvador, Georgia, Lebanon, and Vietnam. From the 40 fact sheets, 32 claimed implemented projects, and 8 stated that the projects proposals have not been implemented.

41. The filled fact sheets have shown that several project proposals from the TNA reports have been implemented. As also reported in the fact sheets, some of the policy and programme related TNA results facilitated creation of new energy policies on the national level supporting environmentally sound technologies including renewable energy technologies and energy efficient technologies on both demand and supply sides.

42. More specifically the implemented projects, based on project proposals reported in the TNA reports, included projects to increase energy efficiency in brewery in Vietnam, to build capacities in order to develop guidelines for a national climate change strategy on adaptation drought technologies a in El Salvador, to increase energy efficiency in the bread industry and to rehabilitate transmission electricity system in Georgia, to increase energy efficiency in thermal power plans, to develop communal policies focusing on reforestation, energy from waste production, and landfill projects in Azerbaijan, and to develop pilot projects on energy efficient lighting, create centres for inspection and monitoring of vehicles, disseminate solar water heaters technologies, establish a network for national air quality monitoring and conduct a national wind energy atlas in Lebanon.

43. The projects were financed mostly by combination of the domestic public funds for development and recovery of national economies with external funding. The external funding was provided by both public and private funding. The public funding included European Union funding, bilateral funding including Norwegian, Spanish, Greek and Japanese (NEDO) public funding, multilateral funding organizations such as the Global Environment Facility and European Bank for Reconstruction and Development, and official development assistance funds, provided by JICA, and KfW. Private funding was provided mostly by domestic investment enterprises and donors.

44. Budgets of the implemented projects ranged from 100.000 USD budget for a capacity building project in El Salvador to some 34 million USD investments for a programme to construct a series of small hydro power plants and wind farms in Azerbaijan.

45. The following **success factors** that facilitated implementation of the project proposals from the TNA were stated by the countries:

- (a) Availability of domestic and/or international funding,
- (b) Ability to reach political and institutional consensus when deciding on implementation priorities,
- (c) Interest of national stakeholders to build capacities,
- (d) Involvement of relevant state authorities in the project development from the beginning,
- (e) A pro-active and knowledgeable project champion supporting the investment process by his capacity and also as a source of funding, if possible.
- (f) A high priority for government and/or municipality of the proposed project or particular technologies involved in the project (such as street lighting, of energy efficient technologies for housing and construction).
- (g) Opportunities to benefit from the CDM.

46. The following **failure factors**, which prevented projects from implementation, were reported by countries:

- (a) Some TNA reports were prepared by teams of consultants and no state authority was involved when proposing the projects which resulted in the lack of ownership of state authorities and hence no interest to implement the prosed projects,
- (b) Environmental issues not considered a priority for the government,

- (c) A high investment and/or low rate of return of the proposed projects,
- (d) Low visibility of the projects reported in the TNAs to possible donors,
- (e) Low attractiveness of some innovative technologies, such as for example combined heat and power production, due to availability of cheaper alternatives.
- (f) Unclear ownership of facilities,

V. Lessons learned from the survey

47. From the process of organizing the surveys it was found that the availability of a focal point on a national level that is knowledgeable of the proposals, and of the project teams who elaborated the TNA reports, is of a paramount importance.

48. Some countries stated difficulties to track the progress of the project ideas reported in their initial TNAs due to personal changes at the relevant institutions (Governmental, consultants) since their TNAs were conducted.

49. Most of the replies contained rich information on the project ideas and allowed to monitor each particular project proposed by the country. Information also included budgets and success and failure factors of the implementation process.

50. One country asked for a financial assistance to undertake the activities requested in the survey. It said that there would be a rationale to discuss such assistance to countries in future.

51. Experiences gained from the surveys shown that:

- (a) Political support on national or regional level is crucial for TNA implementation,
- (b) High priority for government and/or municipality of the proposed project, or particular technologies involved in the project, is very important to gain public recognition and support.
- (c) Interest of national stakeholders to build national capacities in developing and implementing projects, programmes and policies,
- (d) Probability of a successful implementation tends to be high where there is a strong signal from donors or investors regarding the availability of financing for the specific prioritized technologies.
- (e) Availability of domestic public or private funding is often a key driver behind initial implementing efforts.
- (f) A high investment and/or low rate of return can hamper the attractiveness for financial providers to support the project,
- (g) Availability of a pro-active and knowledgeable project champion supporting the investment process by its capacity and, if possible, by funds was considered of a paramount importance for the implementation process,
- (h) Creating an efficient mechanism for delivering targeted information about funding opportunities linked to prioritized technologies would be an important implementation support factor,

52. These findings were based on the responses received from 22 countries which participated in the two surveys. One may assume that in the case more countries would have responded to these surveys a more in-depth analysis could have been undertaken to track the status of implementation of the projects reported in the TNAs of non-Annex I Parties.

53. These surveys were undertaken to support the TEC in preparing its recommendations on guidance on policies and programmes, when reviewing the technology needs from various sources.

Annex I

A. Compilation of the information from the fact sheets including implemented projects and the success factors

(a. project name; budget; b. Funders c. Success factors d. Other lessons learned)

1. Azerbaijan

- (a) Reform I energy sector of the country supported with dozens of projects in the areas of renewable energy sources including wind, solar, biomass and small hydro power plants (SHPP), large hydro power, energy efficiency projects at thermal power plans, reduction of GHG by exploration of natural gas, and reforestation projects including developing of communal policies, waste energy production, and landfill projects; 17 Mio USD + 34 Mio USD for hydro power for SHPP.
- (b) Domestic funding, support of the EU, GEF, EBRD, JICA, KfW, private investors;
- (c) Implementation of environmentally sound technologies, including renewable energy production technologies, energy efficient technologies for buildings, indoor lighting.

2. El Salvador

- (a) Guidelines for a national climate change strategy on adaptation (drought) technologies; Institutional arrangements and strengthening on the interagency task force for implementation of the UNFCCC Convention; Identification of needs of national capacities in climate change; 0,1 Mio USD
- (b) GEF
- (c) Availability of financing; Political and institutional consensus; interest of national stakeholders to build capacities. Relevant state authorities involved in the project development from the beginning.
- (d) Additional lessons learned – two additional studies on renewables and wood market developed to be used for future implementations;

3. Georgia

- (a) Increase energy efficiency in the Bread Industry; A partial implementation of the project on Adoption of Energy efficient technologies for street and indoor lighting. Energy efficient lamps for street lighting were implemented in Tbilisi; Rehabilitation of transmission electricity system 86 units of switchers; Overall budget of 10,67 Mio USD 0,9 Mio USD.
- (b) Domestic public funding and Norwegian grant, public municipal funds, National public funds and private donors.
- (c) Pro-active and knowledgeable project champion supporting the investment process by his capacity and also funding sources. Relatively low investment. Availability of funding and high priority of the project for the municipality. High priority of the project for Government.

4. Lebanon

- (a) Pilot projects on energy efficient lighting, Development of centres for inspection and monitoring of vehicles, Dissemination of solar water heaters, Network for national air quality monitoring, National wind energy atlas; Overall budget of 0,786 Mio USD.
- (b) Government of Lebanon through the development and recovery funds, GEF, the Government of Spain, and the Government of Greece.

- (c) Availability of funding, legal requirements.
- 5. Vietnam
 - (a) Increase energy efficiency in a brewery in Than Hoa; 3,64 Mio USD
 - (b) Japanese funding (NEDO)
 - (c) Intended for CDM however not accepted

B. Compilation of failure factors

- 6. Ecuador
 - (a) None of the 15 proposed projects (proposed budget more than 15 Mio USD) were submitted to the national financing authorities. TNA report was made by consultants and possibly no state authority was involved when proposing the projects resulting in the lack of ownership of state authorities and hence no initiation of the implementation.
- 7. Georgia
 - (a) Lack of financing, lack of interest from potential donors or investors. Environmental issues not considered a priority for the government, high investment / low rate of return. Low visibility of the projects reported in the TNAs to possible donors. Low attractiveness of some innovative technologies, such as CHP, due to cheap availability of some renewable energy, such as hydropower. Unclear ownership of the facilities (such as plants or buildings).

Annex II

Project implementation fact-sheet

Please name the project and the expected period of implementation, as it appears in the TNA report:

Name	Beginning	Ending

Was the project implemented?

Yes	When was the project implemented?
	Which institution(s) financed the project? (Public and/or private funds?)
	What was the budget of the project (in USD)?
What were the success factors that facilitated the project implementation ?	
Additional information about the project	

Was the project implemented?

No	Was the project proposal submitted to a financial authority? When?
	What was the budget of the project (in USD)?
	Was the project started and postponed or it never started?
	Name barriers (failure factors) that hindered the project from implementation.
	Additional information about the project