UNITED NATIONS

UNFCCC Framework Convention on Climate Change

Distr.
GENERAL

FCCC/SBSTA/2010/INF.3
25 May 2010

ENGLISH ONLY

SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE
Thirty-second session
Bonn, 31 May to 9 June 2010

Item 4 of the provisional agenda
Development and transfer of technologies

Report on information required for using the performance indicators to support the review of the implementation of Article 4, paragraphs 1(c) and 5, of the Convention

Note by the secretariat

Summary

This note by the secretariat presents information required for using the performance indicators to support the review of the implementation of Article 4, paragraphs 1(c) and 5, of the Convention. These indicators were developed by the Expert Group on Technology Transfer to monitor and evaluate the effectiveness of the implementation of the technology transfer framework. This note reports on data availability and includes an overview of data gaps relative to each performance indicator.

CONTENTS

I. Introduction

A. Background

1. The Conference of the Parties (COP), by its decision 3/CP.13, annex II, requested the Expert Group on Technology Transfer (EGTT) to develop, as part of its future programme of work, a set of performance indicators that could be used by the Subsidiary Body for Implementation (SBI) to regularly monitor and evaluate the effectiveness of the implementation of the framework for meaningful and effective actions to enhance the implementation of Article 4, paragraph 5, of the Convention (the technology transfer framework[1]), taking into consideration related work under the Convention.

2. The Subsidiary Body for Scientific and Technological Advice (SBSTA) and the SBI, at their thirty-first sessions, noted that the report on performance indicators prepared by the EGTT contains a set of indicators that could be used by the SBI as one of the tools to conduct the review and assessment of the effectiveness of the implementation of Article 4, paragraphs 1(c) and 5, of the Convention and to regularly monitor and evaluate the effectiveness of the implementation of the technology transfer framework, as requested by decision 4/CP.13.[2]

B. Mandate

3. The SBSTA, at its thirtieth session, requested the secretariat to prepare a report on the information required for using the performance indicators to support the review of the implementation of Article 4, paragraphs 1(c) and 5, of the Convention, in accordance with decision 13/CP.1 and to regularly monitor and evaluate the effectiveness of the implementation of the technology transfer framework, in accordance with decision 4/CP.13, and make it available for consideration by the SBSTA at its thirty-second session.[3]

C. Scope of the note

4. This report presents a compilation and synthesis of available information required for using the performance indicators to support the review of the effectiveness of the implementation of Article 4, paragraphs 1(c) and 5, of the Convention and to regularly monitor and evaluate the effectiveness of the implementation of the technology transfer framework. An overview of data gaps relative to the performance indicators is provided in the annex.

D. Possible action by the Subsidiary Body for Scientific and Technological Advice

5. The SBSTA may wish to consider this report and determine any further action.

II. Background

6. The overall objective of the work of the EGTT on performance indicators was to develop and test a balanced and robust set of performance indicators that could be used by the SBI to monitor and evaluate the effectiveness of the implementation of the technology transfer framework.

7. The final report of the EGTT on its work on performance indicators[4] presents a set of 40 performance indicators, an overview of the selection and testing process, and an indication of the resources involved in gathering the data required for each indicator. It also contains recommendations for using the indicators and possible steps for obtaining the data.

---

[1] Contained in decision 4/CP.7, annex, complemented by the set of actions set out in decision 3/CP.13, annex I.
[2] FCCC/SBSTA/2009/8, paragraph 25.
[3] FCCC/SBSTA/2009/3, paragraph 30 (b).
[4] FCCC/SB/2009/4.

8. The set of performance indicators was tested by the EGTT, using a standard methodological sheet as a tool to address the extent to which each performance indicator is specific, measurable, achievable, relevant and time-bound.

9. The major findings of the recent work of the EGTT are as follows:

(a) The process of developing and testing performance indicators is a learning curve;

(b) It is important that any performance indicators used to monitor and evaluate the effectiveness of the implementation of the technology transfer framework are designed to analyse causal relationships (in other words, to what extent observed changes can be attributed to technology transfer policies or measures);

(c) The performance indicators need to be formulated in a specific, measurable, achievable, relevant and time-bound manner;

(d) The major constraint in using performance indicators is the limited availability of data;

(e) The involvement of stakeholders in the process of developing and testing indicators is important for creating a sense of ownership of the results among those who are involved in carrying out activities and actions under the technology transfer framework;

(f) Capacity-building is needed at both the national level and the international level for operating a monitoring and evaluation system, including data systems and procedures for sharing and reporting information.

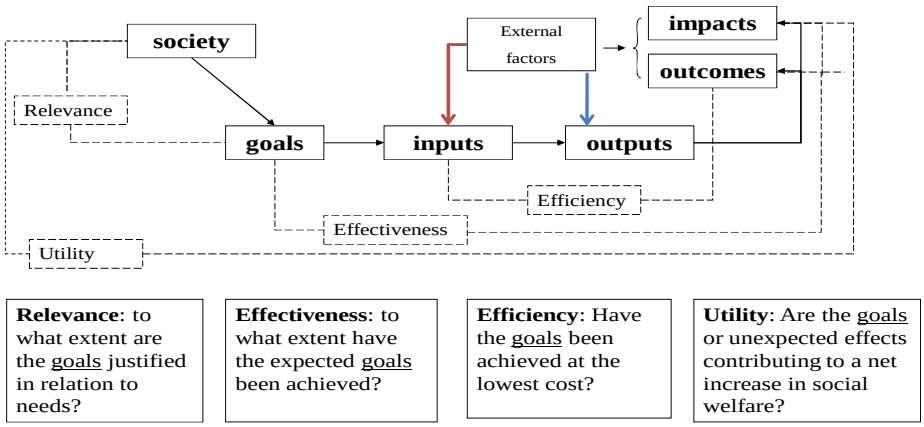
10. Furthermore, preparatory work undertaken during the testing period indicated that many of the data required for the initially selected indicators are currently not available, and that further work on data collection may be needed.

III. Methodology

A. Conceptual framework

11. The framework for monitoring and evaluating the effects of policymaking, contained in the final report of the EGTT on performance indicators and illustrated in figure 1, presents a model of the causal relationships that need to be taken into account when designing a set of performance indicators. It illustrates the relationships between the needs of society, the policymaking process, the evaluation of the policy and the effects of the policy on society.

Figure 1. Framework for monitoring and evaluating the effects of policies



Source: Adapted from figure 6 in: European Environment Agency. 2001. *Reporting on Environmental Measures: Are We Being Effective?* Environmental issue report no. 25. Copenhagen: EEA.
Note: The "goals" in this figure are equated to the vision, including the objectives, expressed in the technology transfer framework.

12. As concluded by the EGTT, "This model can be applied to activities and actions carried out as part of the technology transfer framework. The aim of monitoring and evaluating the effectiveness of the implementation of the technology transfer framework is to understand the extent to which the expected objectives have been achieved. Thus a chain of causality needed to be developed that links objectives of the technology transfer framework with impacts, outcomes and outputs. The performance indicators will measure means (i.e. methods to achieve objectives), ends (i.e. achievement of objectives) or a combination at any point along the continuum (inputs, processes, outputs, outcomes and impacts)."

B. Approach

13. The set of 40 performance indicators developed by the EGTT has been used as one of the tools for the review and assessment referred to in paragraph 2 above. The following describes the steps taken in compiling and synthesizing the information required for using the indicators, including by identifying data gaps relative to each performance indicator.

Identification of relevant information sources and documentation review

14. The first step involved identifying relevant information sources required for using the performance indicators.

Review matrix

15. A review matrix based on the performance indicators was used to collect the available data and identify preliminary gaps. This matrix identified the sources and means of data collection for each of the 40 indicators, as the basis for the data collection, as well as identifying data gaps for each indicator. The methodological sheets[5] prepared by the EGTT were taken into account in designing the review matrix.

[5] <http://unfccc.int/ttclear/jsp/EGTTDoc/sheets.pdf>.

On-line survey

16. An on-line survey was conducted with Parties not included in Annex I to the Convention (non-Annex I Parties) in order to capture the most recent information on the use of the performance indicators specific to non-Annex I Parties. The aim of this survey was to gather data for eight of the 40 performance indicators and to identify relative data gaps. The survey garnered responses from 11 Parties.

Written questionnaires

17. Written questionnaires to capture relevant information on the use of the performance indicators were sent to the Global Environment Facility (GEF), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). A response was received from each organization.

IV. Information required for using the performance indicators

18. Based on preliminary analysis of the compiled and synthesized data and information, a list of available data and data gaps relative to the performance indicators is presented in this chapter. Results are given for each indicator within each key theme of the technology transfer framework: (1) technology needs and needs assessment; (2) technology information; (3) enabling environments; (4) capacity-building; and (5) mechanisms for technology transfer. Consistent with the mandate for the work of the EGTT on performance indicators, results related to the indicators of financial flows are also presented.

A. Technology needs and needs assessments

19. Technology needs and needs assessments are a set of country-driven activities that identify and determine the mitigation and adaptation technology priorities of Parties other than developed country Parties, and other developed country Parties not included in Annex II to the Convention, particularly developing country Parties. The purpose of technology needs assessments (TNAs) is to assist in identifying and analysing priority technology needs, which can form the basis for a portfolio of environmentally sound technology (EST) projects and programmes that can facilitate the transfer of, and access to, ESTs and know-how in the implementation of Article 4, paragraph 5, of the Convention.[6]

1. Data availability

Amount of financial resources provided for the technology needs assessment process (PI-TNA-01)[7]

20. The GEF support for TNAs as a 'top-up' on national communications was initiated in 2000. Since then, according to information provided by the GEF, it has provided USD 16,163,862 for the TNA process. This financial support is allocated as shown by year and by region in table 1.

[6] Decision 4/CP.7, annex I.

[7] This is a unique code given to each performance indicator. PI = performance indicator; XXX = key theme of the technology transfer framework; YY = number of the performance indicator.

Table 1. Financial resources provided by the Global Environment Facility for the technology needs assessment process
(United States dollars)

Year	Latin America and the Caribbean	Asia and the Pacific	Africa and Middle East	Central and Eastern Europe	Total
2000	439 641	936 310	715 585	248 520	**2 340 056**
2001	436 218	300 840	679 615	395 670	**1 812 343**
2002	158 421	76 300	906 880	61 040	**1 202 641**
2003	115 540	152 055	411 475	305 985	**985 055**
2004	0	190 750	142 518	0	**333 268**
2005	0	0	54 500	0	**54 500**
2006	109 000	0	218 000	0	**327 000**
2007	54 500	0	54 500	0	**109 000**
2008					**0**
2009					**9 000 000**
Total	**1 313 319**	**1 656 255**	**3 183 073**	**1 011 215**	**16 163 862**

Number of programmes/projects for capacity-building for technology needs assessments in non-Annex I Parties (PI-TNA-02)

21. The GEF has provided funding for TNAs and capacity-building activities in more than 100 countries. To date, 68 TNAs have been reported by developing country Parties, including more than 200 project proposals and ideas.

22. To assist Parties in undertaking TNAs, UNDP, in collaboration with the Climate Technology Initiative (CTI), the EGTT and the secretariat, developed a handbook entitled *Conducting Technology Needs Assessments for Climate Change*, which was updated in 2009.[8]

23. CTI, in collaboration with UNDP, UNEP and the secretariat, organized three regional workshops in 2002 and 2003 to field-test and to further improve the TNA handbook. In 2005, the UNFCCC, in consultation with the EGTT, organized a workshop on financing the results of TNAs.

24. As part of the Poznan strategic programme on technology transfer, a TNA project concept was approved by the Least Developed Countries Fund/Special Climate Change Fund Council in April 2009. Following this approval, UNEP, as a GEF agency, developed a full project document, which was endorsed by the GEF Chief Executive Officer (CEO) in September 2009. Project implementation by UNEP started in October 2009 and is scheduled for completion within 30 months. The TNA project will provide targeted financial and technical support to assist 35 to 45 developing countries in developing and/or updating their TNAs.

Number of targeted non-Annex I Parties to build capacity for technology needs assessments (PI-TNA-03)

25. The GEF has supported 156 non-Annex I Parties in building capacity for TNAs. The number of non-Annex I Parties supported by the GEF is shown by year and by region in table 2.

[8] <http://unfccc.int/ttclear/jsp/TNAHandbook.jsp>.

Table 2. Number of non-Annex I countries supported by the Global Environment Facility on capacity-building for technology needs assessments

Year	Latin America and the Caribbean	Asia and the Pacific	Africa and Middle East	Central and Eastern Europe	Total
2000	6	14	11	3	**34**
2001	8	4	10	6	**28**
2002	6	1	12	1	**20**
2003	2	2	6	6	**16**
2004	0	2	2	0	**4**
2005	0	0	1	0	**1**
2006	2	0	4	0	**6**
2007	1	0	1	0	**2**
2008	0	0	0	0	**0**
2009					**up to 45[a]**
Total	**25**	**23**	**47**	**16**	**156**

[a] Support for this round of technology needs assessments (TNAs) involves both developing new TNAs and updating existing TNAs.

Number of published technology needs assessments completed or updated by non-Annex I Parties (PI-TNA-04)

26. A total of 68 TNAs have been completed by non-Annex I Parties. The regional distribution is as follows: Africa, 30; Asia and the Pacific, 14; Latin America and the Caribbean, 15; and Europe and Commonwealth of Independent States (CIS) countries, 9.

Synthesis report on technology needs made available by the secretariat and considered by the subsidiary bodies (PI-TNA-05)

27. The SBSTA considered the "Second synthesis report on technology needs identified by Parties not included in Annex I to the Convention"[9] at its thirtieth session. The first synthesis report was considered at the twenty-fourth session of the SBSTA.

Number of technology programmes/projects from technology needs assessments implemented by non-Annex I Parties (PI-TNA-06)

28. A total of 24 Parties developed concrete ideas, proposals and/or concepts for projects and/or programmes based on their priority technology needs as part of their TNAs. These Parties often focused on specific projects and commonly addressed the projects' objective, budget, benefits and linkage to national priorities.

29. According to the survey of non-Annex I Parties conducted as part of the review, Parties indicated that no projects or programmes from their TNAs have yet been implemented.

[9] FCCC/SBSTA/2009/INF.1.

30. On 25 March 2009, the GEF CEO circulated a call for proposals for technology transfer pilot projects to all national GEF operational focal points, as part of the Poznan strategic programme on technology transfer.[10] In response, 39 proposals were submitted to the GEF secretariat. These proposals requested a total of USD 102 million of GEF funding, including USD 81 million from the technology transfer funding window.[11] This sum far exceeded the amount of GEF funding available for technology transfer pilot projects.

31. Based on the selection criteria set out in the call for proposals, 14 of the 39 proposals were prioritized for funding, including one medium-sized project (USD 1 million or under) and 13 full-sized projects (over USD 1 million). Total GEF resources requested for these 14 projects amounted to USD 36.8 million from the GEF technology transfer window under the Poznan strategic programme on technology transfer, with an additional USD 21.2 million requested from the GEF Trust Fund. Total GEF funding for the 14 pilot projects amounted to USD 58 million, and total co-financing for these projects came to more than USD 195 million.

2. Analysis of data gaps

32. Data for indicators for technology needs and needs assessments have been made available for the review, indicating that that there are no significant data gaps regarding the six indicators for this key theme.

B. Technology information

33. The technology information theme of the technology transfer framework defines the means, including hardware, software and networking, to facilitate the flow of information between the different stakeholders to enhance the development and transfer of ESTs. The technology information theme of the framework could provide information on technical parameters, economic and environmental aspects of ESTs and the identified technology needs of Parties not included in Annex II to the Convention, particularly developing country Parties, as well as information on the availability of ESTs from developed countries and opportunities for technology transfer.

34. The technology information theme serves to establish an efficient information system in support of technology transfer and to improve the generation, quality and flow of, and access to, technical, economic, environmental and regulatory information relating to the development and transfer of ESTs under the Convention.

1. Data availability

Number of training programmes and workshops for building capacity in technology information (PI-TI-01)

35. The secretariat organized an expert workshop in 2002 on technology information, including options for the establishment of an information clearing house and enhancement of information centres and networks. In 2007, the secretariat organized a small seminar on networking among technology information centres to provide Parties with a clear understanding of the technical feasibility and cost implications of the networking/strengthening of technology centres in developing countries.

36. No data have been provided by Parties or intergovernmental organizations for this performance indicator and data to quantify this indicator is not synthesized in a specific report.

---

[10] FCCC/SBI/2009/3, annex.

[11] The Poznan strategic programme on technology transfer consists of three funding windows: technology needs assessments; technology transfer pilot projects; and dissemination of technologies and practices.

Number of national communications with information on technology transfer activities (PI-TI-02)

37. All the reporting Parties included in Annex I to the Convention (Annex I Parties) provided information on practicable steps to promote, facilitate and finance the transfer of, or access to, ESTs and know-how to other Parties in their fourth national communications (NC4s). Sixteen Annex I Parties included a separate section on transfer of technology in their NC4s, and the other Parties reported relevant information in their description of multilateral and bilateral cooperation. 11 Annex I Parties provided examples of technology transfer programmes and projects in their NC4s.

38. Information on technology needs was included in the national communications of 39 non-Annex I Parties. The national communications were completed between 1999 and 2009 and comprise 33 initial national communications, five NC2s and one NC3. Their regional distribution is as follows: Africa, 11; Asia and the Pacific, 13; Latin America and the Caribbean, 10; and Eastern Europe and CIS countries, five.

Synthesis report with information on maintaining, updating and developing TT:CLEAR, addressing gaps and user needs made available by the secretariat and considered by the subsidiary bodies (PI-TI-03)

39. One report was received by the SBSTA at its twentieth session concerning the results of a questionnaire survey to assess the effectiveness of the use of the UNFCCC technology information clearing house TT:CLEAR.[12] A separate report related to the pilot project on networking between TT:CLEAR and regional and national technology information centres was considered by the SBSTA at its twenty-sixth session.[13]

Number of technology information centres and networks connected to TT:CLEAR (PI-TI-04)

40. Currently, six centres or networks are connected to TT:CLEAR as a pilot project on networking between TT:CLEAR and national and regional technology information centres. The centres or networks are:

(a) Sustainable Alternatives Network;

(b) Clean Energy Portal of Canada;

(c) Climate Technology Cooperation Gateway of the United States of America;

(d) The International Technology Transfer Centre of Tsinghua University in China;

(e) The Caribbean Community Climate Change Centre;

(f) Tunis International Centre for Environmental Technologies and the Sahara and Sahel Observatory of Tunisia.

Number of users of TT:CLEAR from developing countries (PI-TI-05)

41. According to information provided by the secretariat, a total of 123,785 pages of TT:CLEAR have been visited in 2009 by users from non-Annex I Parties. Information on the number of users of TT:CLEAR from developing countries per year is not available.

[12] FCCC/SBSTA/2004/INF.8.
[13] FCCC/SBSTA/2007/INF.1.

2. Analysis of data gaps

42. For this key theme, there is no available information for the indicator PI-TI-01 (paras. 35–36 above) and there is an indication that this indicator will be difficult to monitor.

43. There is available information for indicators PI-TI-02 (paras. 37–38 above), PI-TI-03 (para. 39 above) and PI-TI-04 (para. 40 above). Regarding the indicator PI-TI-05 (para. 41 above), data for number of users of TT:CLEAR from developing countries are not available. However, the number of pages visited in 2009 could be used as a proxy indicator.

C. Enabling environments

44. The enabling environments theme of the technology transfer framework focuses on government actions, such as fair trade policies, removal of technical, legal and administrative barriers to technology transfer, sound economic policy, regulatory frameworks and transparency, all of which create an environment conducive to private- and public-sector technology transfer.

45. The purpose of the enabling environments component of the framework is to improve the effectiveness of the transfer of ESTs by identifying and analysing ways of facilitating such transfer, including the identification and removal of barriers at each stage of the process.

1. Data availability

Performance against each of the six World Bank governance indicators (PI-EE-01)

46. While the data for this indicator are readily available through the World Bank, they are not directly relevant to the synthesized objective[14] that the indicator seeks to monitor and it was not possible to identify an alternative or proxy indicator (see para. 65 below).

Total volume of joint research and development opportunities for environmentally sound technologies provided by (primarily developed country) governments (PI-EE-02)

47. Regarding the second indicator, the information, while potentially available, has not been systematically compiled into a database that could be used for reporting. Alternative or proxy indicators have not been identified. Joint research and development (R&D) opportunities cover a very wide range of potential activities that could occur in a myriad forms, sectors and technological domains.

48. The International Energy Agency (IEA) and the Organisation for Economic Co-operation and Development (OECD) prepared a synthesis report in 2005 entitled *International Energy Technology Collaboration and Climate Change Mitigation*,[15] which provides an overview of the situation in the energy sector and a number of case studies.

Presence of clear policy guidelines for the recipients of public funding on how to move from the research stage to the commercialization stage of the technology transfer process (PI-EE-03)

49. The majority of non-Annex I Parties that responded to the survey stated that they do not have clear policy guidelines for the recipients of public funding on how to move from the research stage to the commercialization stage of the technology development cycle.

---

[14] In order to design performance indicators that will assess the implementation of the technology transfer framework, the text of the technology transfer framework needed to be translated into more concrete objectives. The next step was to identify overlaps and to combine – if possible – similar objectives in the different parts of the framework. This resulted in a shorter list of 'synthesized objectives'.

[15] <http://www.iea.org/papers/2005/cp_synthesis.pdf>.

Number of bilateral and multilateral programmes that have helped developing countries in developing and implementing regulations that promote the use and transfer of and access to environmentally sound technologies (PI-EE-04)

50. The TNA component of the Poznan strategic programme on technology transfer involves the provision of financial and technical support and guidance to develop technology action plans that:

(a) Examine the contribution that different technologies could make to mitigation goals and the overall cost-effectiveness of each technology;

(b) Evaluate the technologies' alignment with national development goals and priorities, identify barriers to the acquisition, deployment and diffusion of prioritized technologies, and determine means to overcome those barriers.

51. As described for performance indicator PI-TNA-06, 14 proposals of technology transfer pilot projects were prioritized for GEF funding (details are given in para. 31 above).

52. In November 2008, the GEF Council approved the framework documents of the following three programmes: "Reducing industry's carbon footprint in South East Asia through compliance with a management system for energy (ISO 50 000)," which will assist five South-East Asian countries simultaneously in introducing the energy management standards of the International Organization for Standardization to accelerate adoption of best practices for energy use and efficiency; the global "Framework for promoting low greenhouse gas emissions from buildings", which includes actions to reduce the emissions and energy consumption of buildings by reducing the demand for energy services, increasing technical energy efficiency and integrating passive and active renewable sources of energy in the building system itself; and the "Strategic program for West Africa: energy component", which consists of a biodiversity component and a climate change component (with a focus on energy) covering a total of 18 countries in the region.

53. Two Parties from Asia stated in the survey of non-Annex I Parties referred to in paragraph 29 above that they have benefited from bilateral and multilateral programmes that have helped their country in developing and implementing regulations that promote the use and transfer of, and access to, ESTs.

54. While some information on bilateral initiatives was made available by Annex I Parties in their submissions and in their national communications, information on the number of such initiatives is currently unavailable.

Presence of tax preferences and incentives for imports/exports of environmentally sound technologies (PI-EE-05)

55. Regarding this indicator, 33 per cent of Parties that responded to the survey of non-Annex I Parties indicated that they have established tax preferences and/or incentives for imports of ESTs.

56. While there is the potential to collate information on tax preferences and incentives provided by Annex I Parties for the export of ESTs, such information is currently unavailable.

Volume of export credits to encourage the transfer of environmentally sound technologies (PI-EE-06)

57. According to information provided in the report of the EGTT on financing options, current annual export credit relevant to ESTs is estimated at just under USD 1 billion. This data was estimated based on assumptions concerning the relevance of particular sectors or technologies. Many Annex I Parties do not report to the OECD on this matter, or data provided are not comparable.

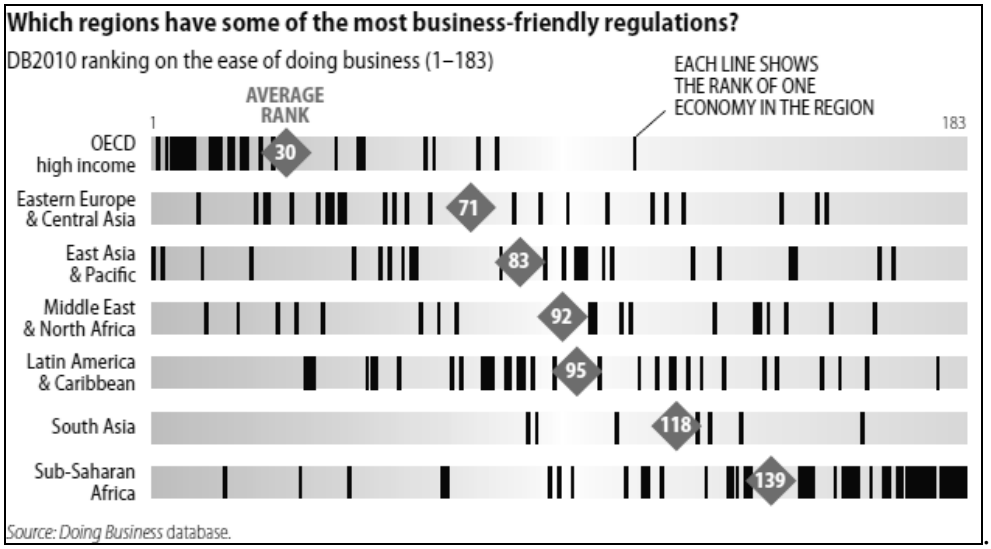
Whether mention of transfer of environmentally sound technologies is made in national sustainable development strategies (PI-EE-07)

58. According to a background paper prepared by the United Nations Department of Economic and Social Affairs (UNDESA) for an expert meeting on addressing climate change in national development strategies,[16] in a few cases, developed countries make concrete and specific offers for climate change related technology transfer and some developing countries identify sectors and technologies for which international collaboration is sought.

Rating of investment climate according to World Bank business indicators (PI-EE-08)

59. Extensive data are available through the Doing Business project established by the World Bank and the International Finance Corporation. Figure 2 presents data on the regions with the most business-friendly regulations in 2010.

Figure 2. Regions with the most business-friendly regulations



Source: World Bank. 2010. *Doing Business 2010*. Available at: <http://www.doingbusiness.org/documents/fullreport/2010/DB10-full-report.pdf>.

Proportion of budget for public procurement of environmentally sound technologies (PI-EE-09)

60. According to responses to the survey of non-Annex I Parties, the proportion of budget for public procurement of ESTs is mostly very low and close to zero per cent.

Degree of disclosure and transparency regarding the approval processes of technology transfer projects (PI-EE-10)

61. No relevant information has been found in national communications.

62. Regarding the GEF process for approval of technology transfer projects, the 14 new proposals for technology transfer pilot projects that will be funded have been chosen following selection criteria which were specified in the call for proposals.

[16] UNDESA. 2007. "Addressing climate change in national sustainable development strategies – common practices". Background paper for the Expert Group Meeting on Integrating Climate Change into National Sustainable Development Strategies, New York, 12–13 November 2007.

Number of technical studies that explore barriers, good practices and recommendations for enhancing enabling environments (PI-EE-11)

63. There are several studies on enabling environments that have been undertaken under the Convention and by various organizations. Technical studies on this matter under the Convention include a technical paper on enabling environments for technology transfer[17] and two synthesis reports prepared by the secretariat on technology needs identified by non-Annex I Parties. In addition, many technical studies on enabling environments have been undertaken outside the Convention.

Percentage of partnerships with thematic foci on climate change and sustainable development with meaningful participation by developing country Parties (PI-EE-12)

64. According to the partnership database of UNDESA, 103 partnerships with thematic foci on climate change have been identified. Among these partnerships, 88 (or 85 per cent) involve participation by developing countries.

2. Analysis of data gaps

65. Regarding the indicator PI-EE-01 (para. 46 above), during testing it was discovered that the related synthesized objective is not adequately reflected by this indicator. Further consultations on this subject with the World Intellectual Property Organization revealed that it is not possible to identify a single indicator reflecting the synthesized objective, owing to its wide scope.

66. Regarding the indicator PI-EE-02 (paras. 47–48 above), consultation with IEA and the Consultative Group on International Agricultural Research suggests that it would be difficult or impossible to collect the data required. The indicator could be reformulated as "Volume of joint R&D opportunities for ESTs posted by government agencies on TT:CLEAR". The secretariat could facilitate data collection for this indicator.

67. Regarding the indicators PI-EE-08 (para. 59 above), the EGTT originally considered using the World Bank's World Business Environment Survey. Consultations with the World Bank revealed that a more up-to-date indicator would be the investment climate as measured by the Doing Business project of the World Bank and the International Finance Corporation or the results of the World Bank's Enterprise Surveys. These are also indicators of the quality of the business environment in different countries.

68. There is a potential data gap regarding the indicator PI-EE-10 (paras. 61–62 above) at the national level, as no information is currently available in national communications on this matter.

69. For the indicator PI-EE-11 (para. 63 above), while it is possible to identify the number of technical studies on enabling environments that have been undertaken under the Convention, identifying the number of technical studies undertaken outside the Convention would be more challenging.

D. Capacity-building

70. As described in the technology transfer framework, within the context of enhancing the implementation of Article 4, paragraph 5, of the Convention, capacity-building is a process which seeks to build, develop, strengthen, enhance and improve existing scientific and technical skills, capabilities and institutions in Parties other than developed country Parties, and other developed Parties not included in Annex II to the Convention, particularly developing country Parties, to enable them to assess, adapt, manage and develop ESTs.

71. Capacity-building must be country-driven, addressing specific needs and conditions of developing countries and reflecting their national sustainable development strategies, priorities and

[17] FCCC/TP/2003/2.

initiatives. It is primarily to be undertaken by and in developing countries in accordance with the provisions of the Convention.

1. Data availability

Amount of financial resources provided for capacity-building in the development and transfer of technology (PI-CB-01)

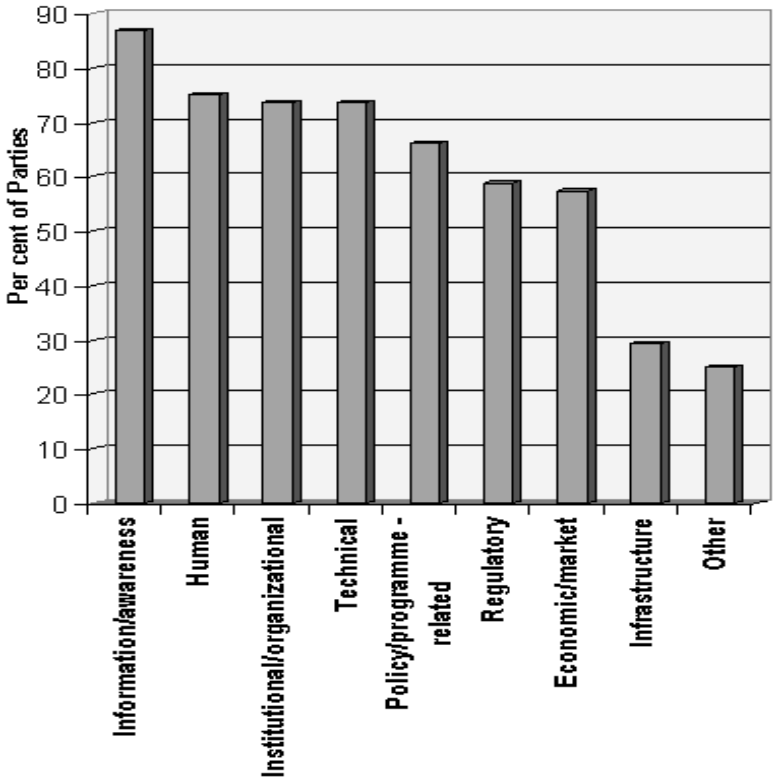
72. No information is available for this indicator. Capacity-building activities are often not specifically undertaken in support of the development and transfer of technology, but rather support a range of activities. Allocation of financial resources to capacity-building for the development and transfer of technology is not separate from those allocated to other capacity-building activities or from those allocated to other policies and measures, and is therefore difficult to assess.

Synthesis report on national capacity needs and priorities for capacity-building for development and transfer of technologies in line with the technology transfer framework (PI-CB-02)

73. The synthesis reports on capacity-building needs identified in national capacity self assessment reports, national communications and national adaptation programmes of action, do not isolate capacity-building needs and priorities for development and transfer of technologies.

74. The second synthesis report on technology needs identified by non-Annex I Parties[18] includes the identification of capacity-building needs. The need for capacity-building, access to information and greater public awareness was identified by 59 Parties and the need to build institutional capacity was identified by 50 Parties. Figure 3 shows the commonly identified capacity-building needs.

Figure 3. Capacity-building needs commonly identified by Parties in technology needs assessments



[18] FCCC/SBSTA/2009/INF.1.

Number of participants/experts in training programmes on the development and transfer of technologies (PI-CB-03)

75. Based on survey responses from non-Annex I Parties, data regarding this indicator are not available.

Number of new and existing national and regional institutions operating as centres of excellence in the development and transfer of technology (PI-CB-04)

76. Information on this indicator provided by non-Annex I Parties does not enable the identification of the number of national and regional centres of excellence.

2. Analysis of data gaps

77. There is a data gap for the indicator PI-CB-01 (para. 72 above), because the information on funding for capacity-building for the development and transfer of technology is not currently separated from other capacity-building activities.

78. Regarding the indicator PI-CB-02 (paras. 73–74 above), there is available information in the second synthesis report on technology needs identified by non-Annex I Parties.

79. Data for the indicators PI-CB-03 (para. 75 above) and PI-CB-04 (para. 76 above) were made available through the survey of non-Annex I Parties.

E. Mechanisms for technology transfer

80. As described in the technology transfer framework, the mechanisms for technology transfer are to facilitate the support of financial, institutional and methodological activities:

(a) To enhance the coordination of the full range of stakeholders in different countries and regions;

(b) To engage them in cooperative efforts through technology cooperation and partnerships (public/public, private/public and private/private);

(c) To facilitate the development of projects and programmes to support such ends.

1. Data availability

Number and volume of reported innovative public–private financing mechanisms and instruments (PI-MECH-01)

81. Parties do not systematically report on public–private financing mechanisms and there are no specific guidelines requesting these data.

82. At the regional level, there is an indication of the existence of such financing mechanisms and instruments, but no information has been reported about the number and volume of innovative public–private financing mechanisms and instruments.

83. The report of the EGTT on financing options[19] synthesized existing and proposed public–private financing mechanisms and instruments; however, comprehensive accounting of these was not possible.

[19] FCCC/SB/2009/2 and Summary.

Report on possible ways to enhance cooperation between the Convention and other multilateral environmental agreements (PI-MECH-02)

84. At the fourteenth session of the SBSTA, a Joint Liaison Group between the secretariats of the Convention on Biological Diversity (CBD), the UNFCCC and the United Nations Convention to Combat Desertification was endorsed. The group has met nine times and has reported on its activities.

85. Furthermore, a report on options for enhanced cooperation among the three Rio Conventions was prepared by the secretariats of the three conventions in 2004.[20]

86. Other reports and meetings include a UNFCCC workshop held in 2003 on synergy and cooperation with other conventions,[21] OECD's *The DAC Guidelines: Integrating Rio Conventions into Development Co-operation*[22] and the CBD report, "Interlinkages between biological diversity and climate change and advice on the integration of biodiversity considerations into the implementation of the United Nations Framework Convention on Climate Change and its Kyoto Protocol".[23]

Report on references made in national communications to objectives of other multilateral environmental agreements (*PI-MECH-03)*

87. No references to objectives of other multilateral environmental agreements have been synthesized from national communications from Annex I and non-Annex I Parties. Some Parties do make such references in their national communications but this information is currently not collected.

Number of reported barriers to, and good experiences in, the development of endogenous technologies (PI-MECH-04)

88. Specific reporting on the barriers to, and good experiences in, the development of endogenous technologies are not currently reported in a systematic manner in national communications. Information on barriers related to technology needs identified by non-Annex I Parties is available, although these barriers do not necessarily relate to the development of endogenous technologies.

89. However, in its national communication, Germany reported on the development and enhancement of endogenous capacities and technologies through the German Appropriate Technology Exchange, which aims at strengthening the technological competence of industry, non-governmental organizations and other groups, and promoting technologies that make best use of existing resources and respond to the ecological and socio-economic requirements of partner countries.

Report with guidance for reporting on joint research and development needs (*PI-MECH-05)*

90. There is no report with guidance for reporting on joint R&D needs.

2. Analysis of data gaps

91. There is a data gap for the indicator PI-MECH-01 (paras. 81–83 above), because Parties do not systematically report on public–private financing mechanisms and instruments and there are no specific guidelines requesting these data.

92. Data are also unavailable for the indicator PI-MECH-03 (para. 87 above); however, subsequent synthesis of national communications may be able to provide such data.

---

[20] FCCC/SBSTA/2004/INF.19.
[21] <http://unfccc.int/adaptation/adverse_effects_and_response_measures_art_48/items/3966.php>.
[22] <http://www.oecd.org/dataoecd/49/2/1960098.pdf>.
[23] <http://unfccc.int/files/meetings/workshops/other_meetings/application/pdf/execsum.pdf>.

93. A data gap also prevents reporting using the indicator PI-MECH-04 (paras. 88–89 above), because endogenous technologies are not isolated from other ESTs when Parties report on barriers to, or good practices for, their development.

F. Financial flows

94. The set of indicators developed by the EGTT also includes indicators of financial flows to support the development and transfer of technologies, which were developed consistent with the methodological approach used in the EGTT report on financing options.

1. Data availability

Total annual global investment and financial flows in climate change mitigation technologies (PI-FIN-01)

95. Regarding the first indicator for financial flows, the EGTT found that this information is not systematically collected. Table 3 lists a number of estimates, based on disparate sources and using different methods and assumptions. Estimates for government and business financing are shown separately where available, as are the estimates of the financing available globally and for developing countries.

96. Specific information on the demonstration of technologies is not currently available, and in some cases is included in estimates of funding for R&D. R&D estimates vary widely. All estimates suffer from a lack of a consistent typology of technologies included in various methodologies.

97. The biggest gap in the estimates is in private financing for deployment of technologies. The private financing for diffusion of technologies is possibly underestimated because internal funding for energy efficiency by large firms is not included in the estimates. The data for developing countries are also incomplete, especially for deployment and diffusion. The total estimate is USD 70–165 billion, but the actual figure could be higher or lower.[24]

[24] FCCC/SB/2009/2 and Summary.

Table 3. Estimates of current financing for mitigation technologies, by stage of technological maturity and source

(billions of United States dollars per year)

	R&D (total spending)	Demonstration (total spending)	Deployment (additional cost of climate technologies)		Diffusion (additional cost of climate technologies)		Total
	Global	Global	Global	Developing countries	Global	Developing countries	Global
Public	6[a] 10[b]	Included with R&D	33[c] 45[d] 30[e]	NA	19.5–27.0[f]	8.0–15.5[g]	55.5–82.0
Private	At least 9.8[h] 13[a] 40–60[i]	Included with R&D	NA	NA	12–22[h]	3.3[h]	21.8–82.0
Total	15.8–70		30–45	NA	31.5–49	11.3–18.8	77.3–164.0

Abbreviations: NA = not available, R&D = research and development.

[a] Based on a 2 per cent share of global R&D of USD 1,000 billion in 2006.

[b] International Energy Agency. 2008. *RD&D Budgets*. Available at: <http://wds.iea.org/WDS/ReportFolders/reportFolders.aspx>.

[c] Stern N. 2007. *The Economics of Climate Change: The Stern Review*. Cambridge: Cambridge University Press. p.347.

[d] Doornbosch R, Gielen D and Koutstaal P. 2008. *Mobilising Investments in Low-emission Energy Technologies on the Scale Needed to Reduce the Risks of Climate Change*. Paris: Organisation for Economic Co-operation and Development. p.5.

[e] UNFCCC. 2007. *Investment and Financial Flows to Address Climate Change*. Bonn: UNFCCC. p.7.

[f] This estimate is the sum of financing for mitigation technologies provided by the clean development mechanism, joint implementation, bilateral official development assistance (ODA), multilateral development banks (MDBs), export credit agencies (ECAs) and by the Global Environment Facility (GEF), plus the New Energy Finance estimate of investment in carbon funds for the purchase of emissions permits in compliance and voluntary markets in 2007. It is assumed that most GEF, bilateral ODA, MDB and ECA financing is additional; however, this is not always the case.

[g] Signifies all items included in the global amount except the investment in carbon funds for the purchase of emissions permits.

[h] United Nations Environment Programme. 2008. *Public Finance Mechanism to Mobilise Investment in Climate Change Mitigation*. Paris: UNEP-SEFI.

[i] IEA (International Energy Agency). 2008. *Energy Technology Perspectives 2008.* Paris: IEA. p.169. This figure includes some unspecified investments at the demonstration stage.

Total annual global investment and financial flows in climate change adaptation technologies (PI-FIN-02)

98. According to the EGTT, information on current spending for technologies for adaptation is unavailable and is likely to be included in the costs for the implementation of adaptation projects. Information on the financing available for implementation of adaptation projects in developing countries is summarized in table 4. The known financing for adaptation projects in developing countries is about USD 1 billion per year. The resources devoted to technology development and transfer for adaptation are likely to be a small share of the project implementation costs.

Table 4. Existing multilateral and bilateral adaptation instruments and funds
(billions of United States dollars per year)

Fund	Creation/closing date	Origin	Average funding per year[a]
Under the Convention			
LDCF	2001	UNFCCC	0.0244
Strategic Priority on Adaptation	2004	UNFCCC	0.0147
SCCF	2004	UNFCCC	0.0294
Adaptation Fund	2008–2012	Kyoto Protocol	0.08–0.3
Outside the Convention			
MDG Achievement Fund	2008–2011	Spain, UNDP	0.528
Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa	2008–2010	Japan	0.031
Australian International Adaptation Fund	2008–2011	Australia	0.032
Climate Change Initiative	2007	Rockefeller Foundation	0.014[b]
Global Climate Change Alliance	2008–2010	European Commission	0.028[b]
German International Climate Initiative	2008–2012	Germany	0.05[b]
Pilot Program for Climate Resilience	2009–2012	World Bank	0.06[b]
Total			**0.89–1.1**

Sources: Van Drunen M et al. 2009. *Financing Adaptation in Developing Countries: Assessing New Mechanisms*. Institute for Environmental Studies report; Le Goulven K. 2008. *Financing Mechanisms for Adaptation*. Stockholm: Secretariat to the Commission on Climate Change and Development. p.19; Müller B. 2008. *International Adaptation Finance: The Need for an Innovative and Strategic Approach*. Available at <http://www.oxfordenergy.org/pdfs/EV42.pdf>; and United Nations Development Programme. 2007. *Human Development Report 2007/2008. Fighting Climate Change: Human Solidarity in a Divided World*. Available at <http://hdr.undp.org/en/reports/global/hdr2007-2008/>.
Abbreviations: LDCF = Least Developed Countries Fund, MDG = United Nations Millennium Development Goal, SCCF = Special Climate Change Fund, UNDP = United Nations Development Programme.
[a] Where possible, a 2007 actual figure is provided, otherwise the figure is the annual average over the life of the programme.
[b] Estimate only.

Total annual investment and financial flows in climate change technologies – Convention financial mechanism (PI-FIN-03)

99. According to information provided by the GEF for this review, the GEF reported an amount of USD 2,196,755,000 of total funding for climate change technologies through the Convention financial mechanism during the 2000–2009 period. This total amount is divided by region and by year in table 5.

Table 5. Total annual funding for climate change technologies provided by the Global Environment Facility
(thousands of United States dollars)

Year	Latin America and the Caribbean	Asia and Pacific	Africa and Middle East	Central and Eastern Europe	Global and multi-country	Total
2000	33 854	23 551	38 389	22 912	16 364	**135 070**
2001	15 427	121 012	28 345	18 340	7 221	**190 344**
2002	10 369	53 505	45 740	25 986	2 995	**138 594**
2003	32 614	24 213	45 820	59 776	78 980	**241 403**
2004	72 011	56 286	18 801	9 927	866	**157 892**
2005	31 039	37 227	22 994	32 594	16 399	**140 253**
2006	93 302	111 794	1 093	65 303	31 091	**302 583**
2007	25 650	143 239	11 317	37 477	7 064	**224 747**
2008	51 939	110 554	80 226	48 486	0	**291 205**
2009	104 923	125 285	45 285	29 728	69 444	**374 664**
Total	**471 127**	**806 666**	**338 008**	**350 528**	**230 425**	**2196 755**

Total annual investment and financial flows in climate change technologies – Kyoto Protocol flexibility mechanisms (PI-FIN-04)

100. Although the Kyoto Protocol flexibility mechanisms contribute to technology transfer, agreed estimates of total annual investment and financial flows in climate change technologies through these mechanisms are not available.

101. The clean development mechanism (CDM) contributes to technology transfer by financing projects that use technologies that are not available in the host countries. The EGTT estimated that the CDM contribution is USD 4–8 billion for the development and transfer of mitigation technologies.

102. About 36 per cent of CDM projects, accounting for 59 per cent of the total annual emission reductions of all projects, claim to involve technology transfer. The total capital that has been, or will be, invested in CDM projects that entered the pipeline by the end of June 2008 is USD 94.7 billion. This figure includes some projects that are at the validation stage and there is a chance that some projects will not proceed. However, experience shows that the rate of failure is very low for projects that reach the validation stage. At the end of September 2008, 3,967 projects were in the CDM pipeline, including 1,170 registered projects. These projects are forecast to reduce emissions by 546 million tonnes of carbon dioxide equivalent (Mt CO_2 eq) per year.

103. The Adaptation Fund under the Kyoto Protocol has recently become operational and is expected to deliver USD 80–300 million per year, depending upon the demand for, and price of, certified emission reduction units and therefore the share of proceeds flowing into the fund.

104. At the end of September 2008 there were 175 joint implementation (JI) projects in the pipeline, including 22 registered projects, with expected annual emission reductions of 67 Mt CO_2 eq. According to the EGTT, JI projects could contribute just under USD 0.5 billion each year to the development and transfer of mitigation technologies. The total capital that has been, or will be, invested in JI projects that

had entered the pipeline by the end of June 2008 is USD 7.7 billion. The estimated revenue for projected annual emission reductions is USD 98 million for 2006 and USD 418 million for 2007.

Total annual investment and financial flows in climate change technologies – bilateral sources (PI-FIN-05)

105. The EGTT has reported that total annual investment and financial flows for climate change technologies from bilateral official development assistance (ODA) in developing countries could be estimated at USD 2 billion and from Export credit agencies at just under USD 1 billion. This figure applies to mitigation technologies only.

Total annual investment and financial flows in climate change technologies – national sources (PI-FIN-06)

106. The EGTT reported that the total annual investment and financial flows for climate change technologies from national sources could be estimated at USD 36–45 billion (including investments from both developed and developing countries). This figure applies to mitigation technologies only.

Total annual investment in climate change technologies – multilateral sources (PI-FIN-07)

107. The EGTT reported that the total annual investment and financial flows for climate change technologies from multilateral sources could be estimated at USD 1–3 billion (multilateral ODA only). This figure applies to mitigation technologies only.

Total annual investment and financial flows in climate change technologies – private sources (PI-FIN-08)

108. According to information provided in the report of the EGTT on financing options, the total annual investment and financial flows invested in climate change technologies from the private sector could be estimated at USD 26–83.7 billion. This figure applies to mitigation technologies only.

2. Analysis of data gaps

109. There is a preliminary data gap for the indicator PI-FIN-01 (paras. 95–97 above), because information regarding total annual global investment and financial flows for climate change mitigation technologies is not systematically collected. There is a significant likelihood of double counting between the different sources of finance and that data sets leave some financial flows unaccounted for.

110. The EGTT report on performance indicators also suggested that data on financial flows should be presented for the following variations of the indicators used above:

(a) Total financial flows by country;

(b) Total financial flows by state of technological maturity;

(c) Total financial flows by technology;

(d) Total public and total private financial flows;

(e) Total financial flows both under and outside the Convention.

111. However, this information is not readily available from the EGTT report on financing options, although it would be possible to construct some of these data sets.

112. Another major data gap related to indicators PI-FIN-02 to PI-FIN-08 (paras. 98–108 above) is the lack of data for technologies for adaptation. This is a serious flaw in the data and prevents comprehensive evaluation of financial flows for climate change technologies.

113. A data gap has also been identified for the indicator PI-FIN-04 (paras. 100–104 above). Agreed estimates of total annual investment and financial flows in climate change technologies through the Kyoto Protocol flexibility mechanisms are not available. In this case an agreed methodology is required.

V. Key findings and conclusion

114. With regard to the 40 performance indicators developed by the EGTT, data have been found for many of the indicators for each key theme of the technology transfer framework.

115. Data gaps have been identified for 26 of the 40 performance indicators, most notably in the themes of enabling environment, capacity-building, mechanisms for technology transfer and financial flows.

116. Regarding the performance indicators for non-Annex I Parties, there are significant challenges in accessing the required data. In some cases data do not exist, or the administrative systems for recording data are not present or require strengthening.

117. Regarding data relevant to Annex I Parties, in most cases guidance and reporting methodologies have not been established, or require strengthening, to support the provision of data through national communications. This is also an issue affecting the availability of data from non-Annex I Parties.

118. Generally, the data used for the 40 performance indicators lack agreed data protocols, and data sharing agreements with and between the custodians of data have not been established. Methodologies for data collection and analysis, while partially established by the EGTT through the methodological sheets for each indicator, require further work in consultation with data custodians and providers.

119. The indicators have been developed to monitor the synthesized objectives derived from analysis of COP decisions and the elements of the technology transfer framework. As such they measure specific products or activities that the COP has identified, rather than broad trends, impacts and outcomes that the COP seeks to achieve in relation to the implementation of Article 4, paragraphs 1(c) and 5, of the Convention. For this reason the indicators may need to be supplemented with broader indicators relating to technological outcomes and impacts.

Annex

Overview of data sources, data availability and data gaps for using the performance indicators

Performance indicator unique code (ID)	Performance indicator	Data sources	Parties directly involved in providing data	Data availability	Data gaps
Technology needs and needs assessments					
PI-TNA-01	Amount of financial resources provided for the technology needs assessment process	Multilateral: GEF, UNDP, UNEP	None	Yes	No
PI-TNA-02	Number of programmes/projects for capacity-building for technology needs assessments in non-Annex I Parties	Multilateral: GEF, UNDP, UNEP	None	Yes	No
PI-TNA-03	Number of targeted non-Annex I Parties to build capacity for technology needs assessments	Multilateral: GEF, UNDP, UNEP	None	Yes	No
PI-TNA-04	Number of published technology needs assessments completed or updated by non-Annex I Parties	Secretariat, GEF, UNDP, UNEP	None	Yes	No
PI-TNA-05	Synthesis report on technology needs made available by the secretariat and considered by the subsidiary bodies	Secretariat	None	Yes	No
PI-TNA-06	Number of technology programmes/projects from technology needs assessments implemented by non-Annex I Parties	Secretariat, GEF and implementing agencies	Non-Annex I Parties	Yes	Yes
Technology information					
PI-TI-01	Number of training programmes and workshops for building capacity in technology information	Multilateral: GEF, UNDP, UNEP, UNIDO	None	Yes	Yes
PI-TI-02	Number of national communications with information on technology transfer activities	NCs	All Parties	Yes	No
PI-TI-03	Synthesis report with information on maintaining, updating and developing TT:CLEAR, addressing gaps and user needs made available by the secretariat and considered by the subsidiary bodies	Secretariat	None	Yes	No
PI-TI-04	Number of technology information centres and networks connected to TT:CLEAR	Secretariat	None	Yes	No

Performance indicator unique code (ID)	Performance indicator	Data sources	Parties directly involved in providing data	Data availability	Data gaps
PI-TI-05	Number of users of TT:CLEAR from developing countries	Secretariat	None	Yes	Yes
Enabling environments					
PI-EE-01	Performance against each of the six World Bank governance indicators[a]	World Bank and/or WIPO	None	NA	NA
PI-EE-02	Total volume of joint research and development opportunities for environmentally sound technologies provided by (primarily developed country) governments[b]	Mitigation: IEA (or consolidated via TT:CLEAR) Adaptation: CGIAR (or consolidated via TT:CLEAR)	All Parties	Yes	Yes
PI-EE-03	Presence of clear policy guidelines for the recipients of public funding on how to move from the research stage to the commercialization stage of the technology transfer process	NCs	Non-Annex I Parties	Yes	Yes
PI-EE-04	Number of bilateral and multilateral programmes that have helped developing countries in developing and implementing regulations that promote the use and transfer of and access to environmentally sound technologies	NCs	All Parties	Yes	Yes
PI-EE-05	Presence of tax preferences and incentives for imports/exports of environmentally sound technologies	NCs	All Parties	Yes	Yes
PI-EE-06	Volume of export credits to encourage the transfer of environmentally sound technologies	NCs	Annex I Parties	Yes	Yes
PI-EE-07	Whether mention of transfer of environmentally sound technologies is made in national sustainable development strategies	UN-DESA or secretariat	None	Yes	No
PI-EE-08	Rating of investment climate according to World Bank business indicators[c]	World Bank	None	Yes	No
PI-EE-09	Proportion of budget for public procurement of environmentally sound technologies s	NCs	Non-Annex I Parties	Yes	Yes

[a] During testing it was realized that the related synthesized objective is not reflected well by this indicator. Further consultations on this subject with WIPO revealed that it is not easy to find a single indicator reflecting the synthesized objective, owing to its wide scope.

[b] Consultation with IEA and CGIAR suggests that it would be difficult or impossible to collect the data required. The indicator could be reformulated as "Volume of joint R&D opportunities for ESTs posted by government agencies on TT:CLEAR".

[c] The Expert Group on Technology Transfer originally considered using the World Bank's World Business Environment Survey, which has evolved over the past 10 years. A more up-to-date indicator would be the investment climate as measured by the Doing Business indicators of the World Bank or the results of its Enterprise Surveys. These are also indicators of the quality of the business environment in different countries.

Performance indicator unique code (ID)	Performance indicator	Data sources	Parties directly involved in providing data	Data availability	Data gaps
PI-EE-10	Degree of disclosure and transparency regarding the approval processes of technology transfer projects	NCs	Non-Annex I Parties	Yes	Yes
PI-EE-11	Number of technical studies that explore barriers, good practices and recommendations for enhancing enabling environments	Secretariat	None	Yes	Yes
PI-EE-12	Percentage of partnerships with thematic foci on climate change and sustainable development with meaningful participation by developing country Parties	UN-DESA or secretariat	None	Yes	No
Capacity-building					
PI-CB-01	Amount of financial resources provided for capacity-building in the development and transfer of technology	Multilateral: IGOs	None	No	Yes
PI-CB-02	Synthesis report on national capacity needs and priorities for capacity-building for development and transfer of technologies in line with the technology transfer framework	NCSAs, NCs, NAPAs, TNAs	Non-Annex I Parties, LDCs	Yes	Yes
PI-CB-03	Number of participants/experts in training programmes on the development and transfer of technologies	NCSAs, NCs	Non-Annex I Parties	Yes	Yes
PI-CB-04	Number of new and existing national and regional institutions operating as centres of excellence in the development and transfer of technology	NCs	Non-Annex I Parties	Yes	Yes
Mechanisms for technology transfer					
PI-MECH-01	Number and volume of reported innovative public–private financing mechanisms and instruments	NCs	All Parties	Yes	Yes
PI-MECH-02	Report on possible ways to enhance cooperation between the Convention and other multilateral environmental agreements	Secretariat	None	Yes	No
PI-MECH-03	Report on references made in national communications to objectives of other multilateral environmental agreements	NCs	All Parties	Yes	Yes
PI-MECH-04	Number of reported barriers to, and good experiences in, the development of endogenous technologies	NCs, NAPAs	Non-Annex I Parties, LDCs	Yes	Yes
PI-MECH-05	Report with guidance for reporting on joint research and development needs	Secretariat	None	Yes	No

Performance indicator unique code (ID)	Performance indicator	Data sources	Parties directly involved in providing data	Data availability	Data gaps
Financial flows					
PI-FIN-01	Total annual global investment and financial flows in climate change mitigation technologies	Secretariat	All Parties	Yes	Yes
PI-FIN-02	Total annual global investment and financial flows in climate change adaptation technologies	Secretariat	All Parties	Yes	Yes
PI-FIN-03	Total annual investment and financial flows in climate change technologies – Convention financial mechanism	GEF, secretariat	All Parties	Yes	Yes
PI-FIN-04	Total annual investment and financial flows in climate change technologies – Kyoto Protocol flexibility mechanisms	UNEP, secretariat	All Parties	Yes	Yes
PI-FIN-05	Total annual investment and financial flows in climate change technologies – bilateral sources	OECD	All Parties	Yes	Yes
PI-FIN-06	Total annual investment and financial flows in climate change technologies – national sources	NCs	All Parties	Yes	Yes
PI-FIN-07	Total annual investment in climate change technologies – multilateral sources	World Bank, regional development banks, OECD	All Parties	Yes	Yes
PI-FIN-08	Total annual investment and financial flows in climate change technologies – private sources	UNCTAD, OECD, UNEP	All Parties	Yes	Yes

Abbreviations: CGIAR = Consultative Group on International Agricultural Research, ESTs = environmentally sound technologies, GEF = Global Environment Facility, IEA = International Energy Agency, IGOs = intergovernmental organizations, LDCs = least developed countries, NA = not applicable, NAPAs = national adaptation programmes of action, NCs = national communications, NCSAs = national capacity self-assessments, non-Annex I Parties = Parties not included in Annex I to the Convention, OECD = Organisation for Economic Co-operation and Development, TNAs = technology needs assessments, TT:CLEAR = technology information clearing house, UNCTAD = United Nations Conference on Trade and Development, UN-DESA = United Nations Department of Economic and Social Affairs, UNDP = United Nations Development Programme, UNEP = United Nations Environment Programme, UNIDO = United Nations Industrial Development Organization, WIPO = World Intellectual Property Organization.