



**UNITED
NATIONS**



**Framework Convention
on Climate Change**

Distr.
GENERAL

FCCC/SBI/2007/6
22 February 2007

Original: ENGLISH

SUBSIDIARY BODY FOR IMPLEMENTATION

Twenty-sixth session

Bonn, 7–18 May 2007

Item 4 (a) of the provisional agenda

National communications from Parties not included in Annex I to the Convention

Work of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention

**Cost-effective and comprehensive training strategy to support the
preparation of national communications**

**Note by the Chair of the Consultative Group of Experts on National Communications
from Parties not included in Annex I to the Convention**

Summary

This document contains recommendations of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) on the design and approaches for short- and long-term training strategies to support Parties not included in Annex I to the Convention in the preparation of their national communications. It also contains analyses of current training programmes, needs and priorities identified by Parties and available resources. This report is based on the lessons learned in the organization of six CGE regional hands-on training workshops on greenhouse gas inventories and vulnerability and adaptation assessments and a global workshop on mitigation, as well as information contained in national communications.

CONTENTS

| | <i>Paragraphs</i> | <i>Page</i> |
|--|-------------------|-------------|
| I. INTRODUCTION | 1–4 | 3 |
| A. Mandate | 1–2 | 3 |
| B. Scope of the note | 3 | 3 |
| C. Possible action by the Subsidiary Body for Implementation . | 4 | 3 |
| II. BACKGROUND | 5–14 | 3 |
| A. Purpose and goals of the training strategy..... | 5–8 | 3 |
| B. Provision of training | 9–14 | 4 |
| III. ANALYSIS OF TRAINING NEEDS | 15–28 | 6 |
| A. Assessment of regional hands-on training workshops | 15–18 | 6 |
| B. Priority training needs | 19–28 | 7 |
| IV. COMPREHENSIVE TRAINING STRATEGY | 29–64 | 8 |
| A. Training design and approaches | 30–35 | 8 |
| B. Training content | 36–43 | 9 |
| C. Training resources | 44–56 | 11 |
| D. Policy delivery options: responding to the need for sustainable professional development | 57–64 | 13 |
| V. CONCLUSIONS | 65–66 | 15 |

I. Introduction

A. Mandate

1. The Conference of the Parties (COP), by its decision 3/CP.8, mandated the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) to provide technical advice and support, by organizing hands-on training workshops at the regional level with the objective of improving the process of preparing the second and subsequent national communications. In response to decision 3/CP.8, the CGE, in its work programme 2003–2007, to date has completed six regional hands-on training workshops on national greenhouse gas (GHG) inventories and vulnerability and adaptation, and one global workshop on mitigation involving 325 experts from 125 Parties not included in Annex I to the Convention (non-Annex I Parties).

2. At the twenty-third session of the Subsidiary Body for Implementation (SBI), Parties encouraged the CGE to develop a cost-effective and comprehensive training strategy and other technical support, such as local training and networking of experts, to assist non-Annex I Parties in preparing their national communications in cooperation with the National Communications Support Programme (NCSP) of the Global Environment Facility, the United Nations Development Programme and the United Nations Environment Programme, and with other relevant organizations based on lessons learned in conducting the regional hands-on training workshops.

B. Scope of the note

3. This note contains analyses of the implementation of the CGE hands-on training workshops, the training given by the NCSP and the United Nations Institute for Training and Research (UNITAR), the training needs that Parties identified in their national communications and the training needs of experts from non-Annex I Parties to prepare the second and, where appropriate, third national communications. It also contains recommendations on how to enhance the efficiency and effectiveness of resources in training activities.

C. Possible action by the Subsidiary Body for Implementation

4. The SBI may wish to consider the recommendations and provide advice thereon. It may also wish to encourage bilateral and multilateral agencies and international organizations to implement the recommendations.

II. Background

A. Purpose and goals of the training strategy

5. Presently, the CGE and the NCSP provide training directly aimed at strengthening the capacity of experts in developing countries to prepare the national communications based on the guidelines contained in decision 17/CP.8. In recognizing the successful outcomes of the CGE regional hands-on training workshops, Parties encouraged the CGE to develop a cost-effective and comprehensive training strategy incorporating the lessons learned and recommendations for bilateral and multilateral agencies and other international organizations to consider in providing technical support to non-Annex I Parties.

6. As most non-Annex I Parties are expected to be in the process of preparing their national communications within the next two years (2007–2008), it is important to put in place a training strategy to assist experts to complete their work within the timetable contained in decision 8/CP.11 on the submission of second and, where appropriate, third national communications. In addition to the imminent needs concerning the preparation of these national communications, this paper addresses the

longer-term training strategy for strengthening the capacity in non-Annex I Parties to improve the process of preparing subsequent national communications.

7. The overall goal of the cost-effective and comprehensive training strategy is to enhance the quality and effectiveness of training resources, and the cost-effectiveness and efficiency of training activities relating to the preparation of national communications and to sustain capacity at the national and regional level.

8. The target audience for training activities has tended to be those directly involved in the preparation of national communications. These individuals will remain the main recipients of training, but the scope must be broadened to include those responsible for the implementation of relevant climate measures within diverse sectors such as energy, agriculture, water supply, coastal management and health. This would ensure more effective and timely preparation and improved quality of the national communications. The target groups for the comprehensive training strategy include:

- (a) National climate change focal points;
- (b) Project coordinators of national communications;
- (c) Experts in vulnerability and adaptation, GHG inventory and mitigation and other relevant climate- and adaptation-related disciplines;
- (d) Development planners and policy makers;
- (e) Educators from national colleges or universities and training institutions.

B. Provision of training

9. The CGE workshops conducted to date (see table 1) cover the main aspects of national communications content, ensuring country teams have a broad overview of all issues that must be considered. The workshops provide a solid backbone, alongside which other programmes can add more detailed training on specific topics. This is an effective structural model, guaranteeing a common approach and definition of the task while providing abundant scope for pertinent supplementary training to be added.

10. Materials from all CGE training activities and workshops are distributed widely and sent out to a number of project coordinators of national communications. One thousand CDs containing all the training materials used at the CGE regional hands-on training workshops were distributed at COP 11. The training materials were also posted on the CGE website of the UNFCCC.¹ The translation of all the CGE hands-on training materials into, at least, French and Spanish, is envisaged.

11. The NCSP provides technical assistance to non-Annex I Parties for the preparation of national communications by enhancing the knowledge and skills of national experts through the provision of technical and policy relevant materials, and sustaining capacity-building efforts through knowledge management, sharing good practices, communications and outreach.²

12. The NCSP organized two workshops to initiate the preparation of national communications for non-Annex I Parties. The workshop for the Europe and Central Asia region was held in Tbilisi, Georgia, from 26 to 28 October 2005, and the workshop for the Africa region was held in Pretoria, South Africa, from 13 to 15 September 2006. The NCSP also organized an in-depth training workshop on the LEAP (Long-range Energy Alternatives Planning) model held in Cairo, Egypt, from 3 to 7 April 2006, and a

¹ <http://unfccc.int/resource/cd_roms/na1/start.htm>.

² <<http://ncsp.undp.org/about.asp>>.

workshop on vulnerability and adaptation for countries in Europe and the Commonwealth of Independent States region held in Tashkent, Uzbekistan, from 17 to 19 October 2006. The planned in-depth training sessions aim to complement the CGE training workshops, at the request of non-Annex I Parties. It is considered by these countries that, while the CGE package provides comprehensive guidance on the design of the various components of the national communications project and on the range of methods and tools available for use in preparing national communications, it requires further technical detail on particular methods and tools that would enable in-country experts to work with them independently. This provides a useful indication of the role of the CGE workshops in providing a framework within which other initiatives can operate.

Table 1. Overview of CGE training hands-on training sessions 2004–2006

| Event | Area covered | Date | Location |
|---|---|----------------------|--------------------------|
| Hands-on training workshop for the Latin America and the Caribbean region | National greenhouse gas inventories | 25–29 October 2004 | Panama City, Panama |
| Hands-on training workshop for the Asia region | National greenhouse gas inventories | 8–12 February 2005 | Shanghai, China |
| Hands-on training workshop for the Africa region | Vulnerability and adaptation assessment | 18–22 April 2005 | Maputo, Mozambique |
| Global Workshop | Mitigation assessments | 26–30 September 2005 | Seoul, Republic of Korea |
| Hands-on training workshop for the Asia region | Vulnerability and adaptation assessment | 20–24 March 2006 | Jakarta, Indonesia |
| Hands-on training workshop for the Latin America and the Caribbean region | Vulnerability and adaptation assessment | 14–18 August 2006 | Asuncion, Paraguay |
| Hands-on training workshop for the Africa region | National greenhouse gas inventories | 18–22 September 2006 | Pretoria, South Africa |

13. UNITAR, through its Climate Change Programme,³ is one of the international organizations that provide training to non-Annex I Parties. It aims to assist in enhancing or creating regional pools of expertise in the developing countries, as well as strengthening the infrastructure for delivering capacity-building activities and developing the human resources. The Climate Change Programme gives priority to southern research institutions and non-governmental organizations that have expertise in the area of climate change and are committed to building capacity at the national and regional level. UNITAR activities fall into three areas: developing climate change training capacities for Asian and African partner institutions; advancing capacity to support climate change adaptation; and technical assistance to UNFCCC focal points in least developed countries to produce national adaptation programmes of action (NAPAs).

14. The above-mentioned initiatives highlight the role of the CGE in providing an overarching framework within which other initiatives providing supplementary training complement the core provision of the CGE workshops and related materials can operate. The comprehensive training strategy should build on this overarching framework.

³ <<http://www.ccp-unitar.org>>.

III. Analysis of training needs

A. Assessment of regional hands-on training workshops

15. In an effort to evaluate the training workshops, the CGE undertook an assessment of each event. To this end, at the completion of each CGE workshop, participants were requested to respond to five evaluation questions concerning content of presentation; benefit of module content in furthering understanding of subject matter; quality of supporting materials; competence of the trainer; and appropriateness of time allocated.

16. In addition to evaluation criteria, respondents were also asked to provide suggestions on how to improve discrete workshop modules. In this manner, individual sessions within each workshop were evaluated, enabling strengths and weaknesses to be highlighted, with the aim of improving subsequent training sessions. Key conclusions can be summarized as follows:

- (a) Trainer competence generally received highest levels of participant satisfaction across all sectors for all workshops;
- (b) There was an increased participant satisfaction over time with regard to four of the five key areas considered (all areas except supporting materials), suggesting that remedial action has generally been successful;
- (c) Despite initial improvements, comprehensive, effective and appropriate training materials may still be developed;
- (d) Lowest levels of participant satisfaction were recorded for 'quality of supporting materials' and 'appropriateness of time allocated'.

17. The participant feedback highlighted a number of key areas and suggestions for future CGE training delivery:

- (a) More case studies are needed;
- (b) Country-specific data and examples should be provided to illustrate information in presentations;
- (c) Participants should be requested to supply country-specific data to directly input into inventory software for complete hands-on training;
- (d) More time is required for practical exercises and facilitation of discussion. Presentations should generally be shorter and more concise. More practical hands-on software tutorials would be beneficial. More step-by-step guidance is needed. More time for each sector is required;
- (e) Materials should be provided to participants ahead of the workshop (this includes all documents, software and hard copies of instruction manuals). Supplementary material must be improved in terms of both quality and quantity;
- (f) Need to develop trainers for each country to undertake in-country trainings.

18. The CGE recognizes the need for a country-driven approach, taking into account specific capacity-strengthening requirements at the national level. It is becoming increasingly important, though, in another sense, as adaptation takes a more prominent position in the national communications. Adaptive measures are often critically dependent on the local context. A country-driven approach must also ensure that full consideration is given to the national context in which a national communication is

produced. This requirement should inform the training process; it may influence the content of the training and the method of delivery.

B. Priority training needs

19. The CGE has underlined the need to link support for the preparation of national communications with broader issues at the country level in its recent reports and surveys, specifically, in its report on the examination of 41 initial national communications (FCCC/SBI/2006/4), as well as the CGE survey on financial and technical support for the preparation of national communications and individual country evaluations of the national communications preparation process.

20. These assessments indicate that the training provided to date under the auspices of the CGE and other programmes and institutions has proved effective in meeting the initial needs of non-Annex I Parties and is rated as a high priority by these countries.

21. The CGE also noted from these assessments that there is a strong argument for refocusing and/or expanding the training agenda, in particular to ensure consistency between the outcomes of the national communications and national sustainable development plans or strategies. This would contribute substantially to enhancing the quality of the national communications and is consistent with the recommendations of workshop participants.

22. The report of the CGE on the examination of 41 initial national communications also concluded that, in the context of mitigation, it was necessary to ensure that climate measures “are consistent with national sustainable development goals” and that, in the context of vulnerability and adaptation, it was necessary “to facilitate and promote the adoption of reliable measures within development programmes to cope with climate change”.

23. In the same document, the CGE noted that in producing national communications, “activities were constrained by the lack of effective coordination among the different ministries involved and limited awareness among policymakers”, a problem that would be mitigated by better awareness of the relevance of climate measures.

24. The CGE survey on financial and technical support for the preparation of national communications concluded: “There is a need for countries to use the information in the national communication to mainstream climate change into national development plans. This would facilitate the financial and technical support from national governments and donors.”

25. The NCSP has identified discussion of linkages between the national communications and national development planning as an important element of their ‘initiation’ workshops, so that “countries are prepared from the outset... for making conscious efforts to link the national communication process to national development planning”.

26. Other recommendations emerging from these assessments include:

- (a) Additional support for socio-economic analysis;
- (b) The need to make cost-effective use of limited training resources;
- (c) A long-term and sustained effort to support training programmes;
- (d) The development of training expertise (‘training the trainers’).

27. The final two recommendations emphasise the need to take a broader view of the national communications training process. National communication training can be seen to be an integral part of capacity-building that will lead to the production of practitioners who will be acknowledged, and

possibly professionally accredited, for their awareness, level of understanding, skills, practical experience and problem-solving attitudes in addressing the challenges arising from climate change.

28. In time, this will see the formal recognition of the different competencies needed when working in areas such as GHG mitigation and climate change adaptation as part of the package for tertiary institutions to accredit professionals in these fields. It follows that there will be a need to maintain flexibility in meeting changing training requirements, a criterion for any successful training strategy.

IV. Comprehensive training strategy

29. For the purposes of this report, training is defined as a set of systematic processes designed to meet learning objectives pertaining to knowledge, skills and attitudes. The training process can be structured in terms of assessment of needs; training design; preparation of materials; implementation; and monitoring and evaluation.

A. Training design and approaches

30. To match country-specific training needs and the local context with the availability of training resources at the global level on a cost-effective basis, the main elements of the training design process may consist of:

- (a) The development of a database of training resources (undertaken at the global level);
- (b) A needs analysis carried out through the identification of generic requirements for the preparation of national communications (global level), the definition of national priorities and individuals to be trained (national level) and the integration of national needs to identify commonalities for regional training;
- (c) The information resulting from the needs analysis, matched against the availability of relevant training resources in the global database, would form the basis for the design of the training programme/s, including full programme specifications, learning outcomes and quality assurance (global/regional training panels).

31. Thus, development of a training plan would be based on consideration of the availability of suitable resources (through the global resource databank) and regional/national priorities and requirements. Initially, the training plan would rest on existing resources, though new materials would need to be developed. The training process itself is likely to result in the improvement of existing training resources and the generation of new training materials, particularly because it is designed to bring to light the significance of local contexts.

32. The training would be directed towards immediate objectives, in keeping with the proven philosophy that training is most effective when based on 'just in time' delivery.⁴ Hence, the training would, as occurs at present, follow the life cycle of the national communications development process. Training delivery may be based on a range of cognitive and behavioural approaches, the main approaches of relevance here being:

- (a) Face-to-face workshops;
- (b) Collaborative methods⁵ (including sharing experience);

⁴ 'Just in time' training is based on the observation that training is most effective when it can be applied immediately to a well-defined objective.

⁵ Collaborative learning describes approaches that involve joint intellectual effort by trainees or by trainees and trainers. Groups work together in searching for understanding or solutions to problems.

- (c) E-learning (through web-based materials or free-standing software packages, perhaps involving virtual classroom techniques as well as self-paced learning);
- (d) Distance learning, including e-learning;
- (e) Combined traditional and distance/e-learning approaches;
- (f) Simulations (including games and role-playing);
- (g) On-site or 'on the job' training;
- (h) Mentoring, facilitation, coaching and peer group support (primarily through electronic means such as moderated bulletin boards);
- (i) Manuals, standards, accounts of good practice and guidelines;
- (j) Follow-up training through dedicated staff/helpdesks to take and respond to technical queries through on-site and distance support and knowledge networks.

33. Given workshop participants' desire for interactive forms of training (such as practical, hands-on exercises), it is recommended that training packages start with face-to-face sessions lectures, demonstrations and guided hands-on exercises, where possible, followed by self-paced exercises and learning materials, including via e-learning or distance education methods, supported by a team that answers questions and provides technical support, as well as grading.

34. Bearing in mind the high costs of face-to-face training, it is proposed that sessions be recorded and made available online, and web-based or computer-based courses developed to reach a much wider pool of trainees. E-learning is unlikely to supersede face-to-face workshops in the near future, but can act to enhance learning by offering refresher courses, and by offering necessary background training to a broader set of stakeholders involved in climate change activities in general, at the national level. These materials would also help support educational efforts in national colleges and universities by providing high-quality standard resources materials for everyone.

35. These considerations apply to all potential training participants, whether team members of national communications or other stakeholders. It is noted, however, that distance or e-learning techniques could be most effectively used to deliver training to a large audience of stakeholders who require little more than a sectoral overview (for example, those working in government departments implementing sustainability measures but without direct involvement in climate concerns). E-learning materials would be most appropriate for refresher courses for participants in earlier workshops who wish to update their knowledge.

B. Training content

36. To date, the training provided by CGE has been focused on key aspects of the national communications such as GHG inventories, mitigation assessment and vulnerability and adaptation assessment, and has been needs-driven. This approach has proved largely successful and will remain at the core of the training strategy.

37. In examining the initial national communications, the CGE noted that: "Many Parties indicated the need for assistance to enhance national capacities for better policy formulation and planning, or the integration of climate change issues into sustainable development. Parties also identified the need for capacity-building to prepare national GHG inventories, to conduct analyses of impacts, adaptation and mitigation, and to identify and implement measures to address climate change" (FCCC/SBI/2006/4, para. 59).

38. It is proposed that mainstreaming climate concerns into national development plans, which includes policy formulation and planning, should become a new element of the comprehensive training strategy in order to enhance the quality of the national communications, and be based on the above examination. This would require the development of new training methods and materials for a broader target audience.

39. In order to enhance the long-term sustainability of the capacity-building activities, it is also proposed that a cascade training programme, training the trainers, become the second new element of the training strategy. This would ensure the comprehensive training strategy is cost-effective and sustainable and that it meets the need for providing in-country training.

40. The comprehensive training strategy would, thus, cover five themes: GHG inventories, vulnerability and adaptation assessment, mitigation assessments, mainstreaming climate into national sustainable development plans and training the trainers on these issues.

41. Authorities and experts in the various sectors, such as coastal zones, water resources and energy, that are relevant to the preparations of national communications and/or an assessment of the implications of the national communications for their sector are the target participants for the training on mainstreaming climate change into national sustainable development plans. The development work undertaken by the NCSP in this area is noted and covers part of the agenda defined here. It is envisaged that the additional training in mainstreaming would include at its core:

- (a) Briefing workshops for sectoral policy makers, planners and managers, including an overview of climate science, general implications for their sector and emerging outcomes of the relevant national communication, led by national climate experts;
- (b) Training in technical communication for national communication team members to facilitate and enhance interaction with sectoral policymakers, planners and managers;
- (c) As part of the training process, dialogue between national communication teams and sectoral experts, including definition of national sustainable development priorities in relation to emerging outcomes of national communication on policies and measures in the sector.

42. The cascade approach for training the trainers would largely use blended learning methods, given the importance of personal contact in this technique, with e-learning materials as the main vehicle for the transfer of knowledge, skills and attitudes. The development of high-quality training materials to support this approach, including trainers' manuals, as well as best practice guides, is essential and represents a second short-term goal, the importance of which is underlined by the workshop participants' observations of existing supplementary materials.

43. There are three other areas where development is needed:

- (a) A specific need has been identified for additional training in socio-economic aspects of mitigation and vulnerability and adaptation; that is, the human dimension. This should be incorporated into existing training on mitigation and adaptation and would probably require greater involvement of social scientists and economists;
- (b) A demand for training in greater depth on specific methods and techniques, met through the organization of additional thematic workshops by NCSP, has emerged and is expected to persist with new workshops needed, particularly in the area of vulnerability and adaptation. The responsive nature of the structure of the training model, defined in

training design and approaches above, is intended to meet this need, largely through the co-option of training resources developed through other programmes;

- (c) There is a pressing need to examine critically the provision of supplementary training materials relating to the existing CGE workshops and to identify and support means of improving the quality and quantity of these important materials. This can draw, as a starting point, on the global database of resources, covered above. Effective use should be made of synergies with other training initiatives through shared use and/or development of resources.

C. Training resources

44. The secretariat has published a user manual to facilitate the use of UNFCCC guidelines in preparing national communications from non-Annex I Parties (decision 17/CP.8). It has also produced the software for GHG inventories and compiled tools and methodologies needed to prepare national communications.⁶

45. In addition to the training materials on national GHG inventories, vulnerability and adaptation assessments and mitigation produced for the regional hands-on training workshops of the CGE, the group has also prepared the following technical reports as requested by the SBI to aid Parties in preparing their national communications:

- (a) Ways to improve the reporting of projects identified in national communications from Parties not included in Annex I to the Convention (FCCC/SBI/2007/7);
- (b) Template on cross-cutting themes in national communications from non-Annex I Parties (FCCC/SBI/2007/3).

46. The NCSP organizes a series of 'initiation' workshops to brief countries as they start their national communications process. At these workshops, the new UNFCCC guidelines for preparing national communications from non-Annex I Parties, and an inventory of methodological frameworks, methods and tools are presented. This process provides an important platform on which to build further training activities in mainstreaming climate change with national development plans.

47. Thematic workshops organized by the NCSP complement the standard CGE workshops by providing greater depth in particular themes. A global database of training resources, which might enable the provision of in-depth training across a broader range of needs, would enable the NCSP to identify and develop thematic workshops.

48. The NCSP is currently preparing a series of technical and policy relevant documents for dissemination. These include guidance documents on policy issues such as linking the national communication process to national development planning, and on technical issues such as how to develop climate scenarios for vulnerability and adaptation assessments. Thematic knowledge networks are being developed to facilitate the dissemination of technical materials, exchange of knowledge and experience, and sharing of good practices. The NCSP is also planning to make the networks interactive so as to allow country teams to interact with each other, with the NCSP and with individual national, regional, or international experts.

49. The NCSP already plays an integral role in relation to the comprehensive training strategy, working closely with individual country teams to provide sustained 'on-the-job' support and in-depth training, complementing the core training provided by the series of CGE workshops.

⁶ <http://unfccc.int/national_reports/non-annex_i_natcom/training_material/methodological_documents/items/349.php>.

50. For the least developed countries, support is also being given by various agencies in the development of national adaptation programmes of action,⁷ which will provide an important component of future national communications. In addition to workshops and a primer, a database of local coping strategies has been created.

51. The United Nations Decade of Education for Sustainable Development (DESD) has environment as a key action theme.⁸ The overall goal of the DESD is to integrate the principles, values and practices of sustainable development into all aspects of education and learning. Coordination with relevant activities under the DESD would provide access to the resources necessary for the development of the mainstreaming strand.

52. The United Nations Centre for Regional Development (UNCRD) offers short courses in, for example, the development of management strategies at the country or regional level.⁹ One of the main goals of UNCRD is mainstreaming environmental consideration into the overall planning and development process at the local/national level. Coordination with UNCRD will be important in developing the mainstreaming strand.

53. E-learning and blended approaches can provide a cost-effective solution, although it is noted that e-learning for climate change is still in its infancy. The OpenCourseWare Consortium¹⁰ provides a valuable resource covering both climate change and sustainable development that could well prove useful in meeting specific needs, as well as providing materials for core training workshops, etc. The United Nations University has developed OpenCourseWare modules on specific sustainable development topics.¹¹ The Global Virtual University offers self-paced e-learning courses, including on climate change,¹² which could be useful for briefing development planners. The Sustainable Development Communications Network fosters resources such as the SD Gateway, which provides an online listing of sustainable development courses and other educational events,¹³ and on-line training resources.¹⁴

54. The Global Environment Information Centre runs various workshops on environment and development topics, including climate change¹⁵ and global environment issues.¹⁶ Non-governmental networks, such as SouthSouthNorth,¹⁷ run capacity-building workshops in related areas. There are many regional organizations with a mandate to develop capacity in sustainable development, such as the Southern African Development Community Regional Environmental Education Programme.¹⁸

55. Individual universities, such as Rhodes University in South Africa,¹⁹ and Imperial College London,²⁰ offer short courses on relevant topics. Discussion with course providers would be an effective starting point in identifying sources of 'off-the-shelf' or easily-modifiable training resources.

⁷ <<http://napa.undp.org/about.asp>, <http://www.unitar.org/ccp/napaworkshops/index.htm>>.

⁸ <http://portal.unesco.org/education/en/ev.php-RL_ID=27552&URL_DO=DO_TOPIC&URL_SECTION=201.html>.

⁹ <<http://www.uncrd.or.jp/wha/index.html#060904africa>>

¹⁰ <<http://www.ocwconsortium.org/use/index.html>>.

¹¹ <<http://www.onlinelearning.unu.edu/content/view/115/119/>>.

¹² <<http://gvu.unu.edu/courses.cfm?pageid=1031&courseid=1001>>.

¹³ <<http://www.sdgateway.net/events/>>.

¹⁴ <<http://www.sdcn.org/substantive.htm>>.

¹⁵ <<http://geic.hq.unu.edu/env/training.cfm?type=1>>.

¹⁶ <<http://gvu.unu.edu/courses.cfm?pageid=1031&courseid=1003>>.

¹⁷ <<http://www.southsouthnorth.org/home.asp>>.

¹⁸ <<http://www.sadc-reep.org.za/>>.

¹⁹ <<http://campus.ru.ac.za/index.php?action=category&category=1421>>.

²⁰ <http://www.ic.ac.uk/templates/front_index_3.asp?P=178>

56. It is important to note that there is a number of additional international organizations with important roles in providing training with specific relevance to national communications, for example United Nations Research Institute for Social Development and United Nations Educational, Scientific and Cultural Organization. It may be assumed that the development of a mechanism to harness the potential of the delivery capabilities of such agencies to deliver training will be an important focus of CGE activities in coming years.

D. Policy delivery options: responding to the need for sustainable professional development

57. Climate change is now widely acknowledged as a major threat to the sustainability of natural and human systems on a global scale. As pointed out in previous sections, international and national responses to this major challenge have given a strong impetus to the implementation of mitigation and adaptation strategies through the policy and planning instruments available to the public and private sectors. The role of national communications, and the support of these by the CGE, will play a critical role in this regard.

58. One of the barriers to meeting this universal requirement is the overall low level of embedded professional capacity and capability available to governments, industry and communities to address pressing climate change issues. This problem resulted in the observation that “most Parties highlighted the need to train local scientists and technical and managerial staff in order to incorporate climate change issues into everyday life” (FCCC/SBI/2006/4, para. 47). It also underlines requests by non-Annex I Parties for a long-term commitment to the training process. In effect, the sustainability requirement is for structured capacity-building rather than a series of training opportunities.

59. Inherent in the policy mix of options for delivering capacity-building is the underlying need to develop a ‘system of systems’ to effectively initiate training and educational programmes, promulgate, publicize, track and evaluate training and professional development activities. Having a system of systems acknowledges that there should be a hierarchy of training and professional development activities to meet different needs in different places and over different timescales. The cascade aspects of training the trainers have been addressed in section IV B above in relation to priority technical training. There is now a need to examine the long-term professional development requirements as part of the policy mix of options for capacity-building.

60. The delivery options hierarchy could be structured to produce a wide range of tangible outcomes including a documented product as output from training and educational courses to meet national reporting commitment as follows:

- (a) **Intensive short courses** to address the immediate reporting and assessment requirements of the UNFCCC. This would be done with the full understanding that there will be a high level of attrition over the coming years and a loss of capacity within national organizations due to staff movements. Inherent in this option is the acknowledged need to keep repeating courses at different time intervals to ensure that there is always a pool of technically and professionally adapt personnel;
- (b) **Professionally mentored in-service ‘learning by doing’ initiatives** to re-equip and re-acquaint personnel who were involved in the last round of national reporting. Mentors could be deployed from regional bodies or recruited in-country. Ideally, this should build on the capacity gained through the intensive short courses;
- (c) **Sustainable long-term professional development programmes** delivered by institutions with staff who have acknowledged expertise and experience in capacity-building with respect to greenhouse gas mitigation, inventory preparation and climate change adaptation;

- (d) **University courses and programmes** (undergraduate and postgraduate) to provide more in-depth theoretical and practical experience in the areas in which reporting is required.

61. The need for sustainable professional development is highlighted in observations made in relation to capacity-building outcomes from short training programmes delivered to Pacific Island countries (to meet the immediate needs for the last round of national reporting). This revealed that there has been a significant loss of trained in-country professionals to undertake the current round of reporting. Thus, there is limited capacity to prepare funding applications and to work on the implementation of adaptation strategies as recommended through the national reporting processes. Addressing this deficiency requires long-term sustained support for capacity-building supplied through regional centres that can provide a focus on geographically relevant climate change and environmental issues.

62. As indicated in the preceding section, a considerable number and range of capacity-building training programmes have been initiated to address immediate needs for international reporting at national and regional scales. An appreciation of the situation leads to the conclusion that if the long-term needs of governments, commercial interests and civil society are to be met, then there is a rapidly emerging requirement to provide tertiary education programmes leading to the professional accreditation of practitioners in the area of climate change adaptation. This needs to be done over the next five years through regional tertiary institution partnership arrangements within and between participating countries. These sustainable capacity-building activities would be built on the solid foundation provided by the intensive short courses delivered to meet immediate needs. This will ensure an extension of professional knowledge and the consolidation of skills through the continuity of articulated linking of training and education.

63. As a practical outcome from articulated tertiary education programs, graduates should be well equipped to meet existing and emerging professional challenges and be able to, inter alia:

- (a) Appreciate and interpret international and national understanding of global warming and the emerging trends in risk and vulnerability assessment to support measures to manage the effects of climate change;
- (b) Better understand international and national obligations, commitments to apply risk reduction and vulnerability assessment processes and integrated management systems as they relate to climate change;
- (c) Proactively address the implications of the management of greenhouse emissions and the implementation of adaptation measures to address the risks arising from climatically induced changes and document these matters in the national reporting processes pursuant to obligations under the UNFCCC;
- (d) Utilize the integrated adaptive assessment and integrated management tools and techniques designed to achieve continuous improvement in natural and production systems outcomes;
- (e) Utilize environmental simulation modelling and decision support tools and prepare assessment and management plan documentation that meets professional and statutory requirements;
- (f) More effectively assess and manage the impacts of climate change in relation to complex agricultural, industrial, infrastructure, recreational and urban development project proposals using statutory and best practice processes and procedures;

- (g) Gain recognition as a climate change adaptation practitioner from an appropriate professional accreditation body.

64. As a key human resource, these graduates should enjoy greater stability in employment as climate change adaptation practitioners and contribute to the ongoing reporting and implementation processes on national, regional and local level. This should go a long way to reducing the loss of capacity and the need to continually train people to prepare national communications.

V. Conclusions

65. Abundant training materials and opportunities already exist that would provide a basis for further development of training materials within the comprehensive training strategy. The CGE proposed that a twin-track approach could be used in developing resources, based on:

- (a) Close collaboration with key programmes and organizations, particularly the NSCP and UNITAR;
- (b) Adapting existing training materials into self-paced packages, particularly e-learning packages.

66. Specifically, it recommends that:

- (a) The Group works closely with the NCSP in developing training materials on mainstreaming climate into national sustainable development plans. The CGE continues to provide the basic training on five themes (GHG inventories, mitigation assessment, vulnerability and adaptation assessment, mainstreaming climate into national sustainable development plans and training the trainers) to support the preparation of national communications while the NCSP provides an in-depth training into these themes;
- (b) In developing training in socio-economic and other thematic areas, the CGE identifies relevant resources, including through the proposed global resource database, the development of which is regarded as a priority;
- (c) The development of cascade training in the four main areas (GHG inventories, mitigation assessments, vulnerability and adaptation, and mainstreaming) should be designed to facilitate self-paced learning such as through e-learning delivery methods.
