United Nations
Educational, Scientific and
Cultural Organization

REPORT AND RECOMMENDATIONS

EXPERTS MEETING ON CLIMATE CHANGE EDUCATION FOR SUSTAINABLE DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN

12-14 MAY 2015, SAN JOSÉ, COSTA RICA

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Earth Charter Centre for Education for Sustainable Development
University for Peace
San José, Costa Rica

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Contents

Acronyms

CA: Central America

CARICOM: Caribbean Community and Common Market

CC: Climate change

CCAD: Central American Commission for Environment and Development

CCE: Climate Change Education

CCESD: Climate Change Education for Sustainable Development

CELAC: Community of Latin American and Caribbean States

COP: UNFCCC - Conference of the Parties

DRR: Disaster Risk Reduction

ECLAC: Economic Commission for Latin America and the Caribbean

ESD: Education for Sustainable Development

EU-CELAC: Summit between the European Union and the Community of Latin American and Caribbean states

IPCC: Intergovernmental Panel on Climate Change

LAC: Latin America and the Caribbean

MERCOSUR: Southern Common Market

NGO: Non-governmental organization

OECD: Organisation for Economic Co-operation and Development

SICA: Central American Integration System

UNEP: United Nations Environment Programme

UNFCCC: United Nations Framework Convention on Climate Change

INTRODUCTION

Introduction

A meeting on education for climate change and sustainable development was held in Costa Rica from 12 to 14 May 2015, involving more than 100 experts from 25 Latin American and Caribbean countries.

Through discussion sessions and conversations among the participants, the meeting analysed the main challenges of climate change for the education systems of the Latin American and Caribbean region, as well as the role to be played by education in climate change adaptation and mitigation (see Annex I, Agenda).

Find the speakers' presentations and the photo gallery through these links

Presentations

Photos

The meeting's main objectives were to:

- promote the important contribution that education can make to climate change adaptation and mitigation in the Latin American and Caribbean countries;
- foster the mainstreaming of issues relating to climate change and disaster risk reduction in education programmes and school curricula in the Latin American countries;
- identify climate change adaptation and mitigation needs and the responses of education systems and teaching institutions, including infrastructure and resource management and allocation;
- draw attention to strategies to improve communities' resilience;
- promote the sharing of experience and good practices in climate change education (CCE) among ministries, teachers, professionals and young people; and
- identify opportunities for creating associations among schools, non-governmental organizations (NGOs), United Nations bodies and UNESCO networks to improve formal and informal education programmes on climate change.

The Minister of Education of Costa Rica, Sonia Marta Mora, attended the second day of the meeting. She reaffirmed her government's commitment to promoting cooperation among the countries of the region in order to make progress on this issue. The Director of the

Earth Charter Center for ESD Facilities

UNESCO Cluster Office for Central America and Mexico, Pilar Álvarez-Laso, was also present. She underlined the importance of the event in the coordination of the new education agendas and priorities that were being developed in the current year in various United Nations forums.

Other participants included renowned researchers and communicators working on the same subject, in addition to government officials and representatives of the entire region's organizations of young people, indigenous people and civil society. Also taking part was Adriana Valenzuela, the representative of the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), and representatives of UNESCO Headquarters in Paris and the Santiago and Brasilia offices of UNESCO (see Annex II, List of participants).

The participants had the opportunity to visit a number of projects that illustrate the subjects discussed in the plenary sessions; details of these projects are provided later in this report.

The event, organized by UNESCO in collaboration with Earth Charter International, took place thanks to financial contributions from the Government of Japan and the Government of Denmark. It was held on

the premises of the Earth Charter Centre for Education for Sustainable Development at the University for Peace, Ciudad Colón, Costa Rica.

The following is a summary of the various papers and recommendations given by participants in relation to the subjects discussed.


Seeds of Peace


Seeds of Peace
UPEACE


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critical moment
UPEACE

OPENING OF THE MEETING

Opening of the meeting

The Executive Director of Earth Charter International, Mirian Vilela, opening the meeting, emphasized its importance in the current context of global governance for sustainability, especially in relation to the Sustainable Development Goals (SDGs) (specifically, Goal 4.7 on education for sustainable development [ESD]), the World Education Forum 2015 (Republic of Korea) and the upcoming 21st session of the Conference of the Parties to the UNFCCC (COP 21).

All these processes reflect the intention to promote the international community's commitment to sustainable development and its cooperation in that area. While education may not be seen as a priority area in processes such as COP 21, the speaker mentioned three aspects that were necessary to promote greater global cooperation:

1. a shared vision of the problem and how to deal with it;
2. basic understanding of sustainability and its challenges; and
3. an ethical framework and shared values as the basis for action; the Earth Charter could be a useful reference tool in that regard.

To promote participation by all the participants in this initial session, the speaker invited them to discuss the following questions in small groups for a few minutes:

What is the role of education in tackling the challenges facing us in the area of climate change and sustainability?

What are the challenges facing us in seeking to mainstream sustainability and climate change in educational processes?

Following the group discussions, a number of participants shared their viewpoints. These included the need to:

- Rethink the role of education so that it would not only train professionals to join the market economy. Education must produce critical thinkers who could influence and motivate social actors to bring about paradigm change.
- Strengthen schools that had become weakened, especially in the public sector.

Mirian Vilela, Earth Charter International

- Put education policies and processes in context, since they are often disconnected from reality.
- Generate spaces to move forward in understanding the issue of climate change, in approaches to the subject and how it affects us all (not only polar bears).
- Combine passion and knowledge.
- Mainstream the ethical dimension in educational processes.
- Build bridges for communication between climate change experts and educators.

Lastly, the speaker appealed to participants to think of the school teachers who actually bring so many of these subjects into the classroom, and to seek ways of simplifying the great task of implementing in practice the agendas that are discussed in international forums.

CONTEXT AND OBJECTIVES

Next, Julia Heiss, a programme specialist in the Section of Education for Sustainable Development at UNESCO Headquarters, Paris, and Astrid Hollander, a programme specialist in the Section of Education for Sustainable Development at the UNESCO Office in Santiago de Chile, spoke on the global education initiatives on which the current meeting was based, and on its objectives and working methods.

Julia Heiss, UNESCO Headquarters, Paris

Ms Heiss commented on the **Global Action Programme on ESD (GAP-ESD)**, which follows up the work of the United Nations Decade of Education for Sustainable Development. The programme, adopted at the World Conference on Education for Sustainable Development, held in Nagoya, Japan, in November 2014, has been connected with a number of UN sustainability initiatives, including Article 6 of the UNFCCC, which relates to education and communication.

One of the programme's main objectives is 'to reorient education and learning so that everyone has the opportunity to acquire the knowledge, skills, values and attitudes that empower them to contribute to sustainable development'.

The programme comprises five Priority Action Areas:

- incorporating ESD into public policies;
- transforming learning environments;
- building capacities of educators;
- empowering and mobilizing youth; and
- accelerating sustainable solutions at local level.

To move forward towards the objectives of ESD and CCE, which are interrelated, collaboration is needed among various actors. Currently, applications have been received from 400 potential partners for the programme, and efforts will be made to work with them jointly.

Regional meetings such as this one are another way of generating partnerships (communities of practice) and moving forward in the implementation of the programme. Meetings on CCE and ESD have been held in four regions: Asia and the Pacific (Philippines), the Arab States (Lebanon), Small Island States (Bahamas), and Latin America and the Caribbean (Costa Rica).

The objectives include supporting countries in capacity building on climate change and ESD for decision-makers, teacher training institutions and specialists in curriculum development and education planning.

To provide an example of capacity-building work, Mariana Alcalay, of UNESCO Brasilia, presented the results of a pilot project in education on climate change and sustainable development in Itajaí, Brazil. Brazil has a long record of promoting environmental education, but an analysis conducted five years earlier on the national environmental education strategy showed that it failed to provide clear guidance on climate change adaptation and that educators lacked sufficient tools for the purpose. Consequently, together with the Education

Mariana Alcalay, UNESCO Brasilia

Department of Itajaí and the Environmental Education Department of the Ministry of Education, UNESCO implemented in 2014 a pilot course to train educators on the subject of climate change and sustainable development. Some 100 educators took part during that pilot phase, whose duration was 40 hours, of which 36 were class hours and 4 were spent on educational visits. Itajaí, where it was held, served as a useful example because it is an area affected by floods.

Astrid Hollander presented the objectives of the meeting, mentioned above in the Introduction, and the working methods for the three days of the meeting. Five thematic plenary sessions were organized, after which the participants worked in groups, each of which analysed one of the themes and made recommendations.

To conclude the opening session, participants watched a video titled Aprender a afrontar el cambio climático (Learning to tackle climate change). (*https://www.youtube.com/watch?v=wCzbBflUMi4*)

Astrid Hollander, UNESCO Santiago

KEYNOTE PRESENTATIONS

Keynote presentations

- **'Climate change education or education for regenerative development?'** Eduard Muller, University of International Cooperation (Costa Rica)

- **'Education and communication on climate change: An approach based on social perceptions'** Edgar González-Gaudiano, University of Veracruz (Mexico)

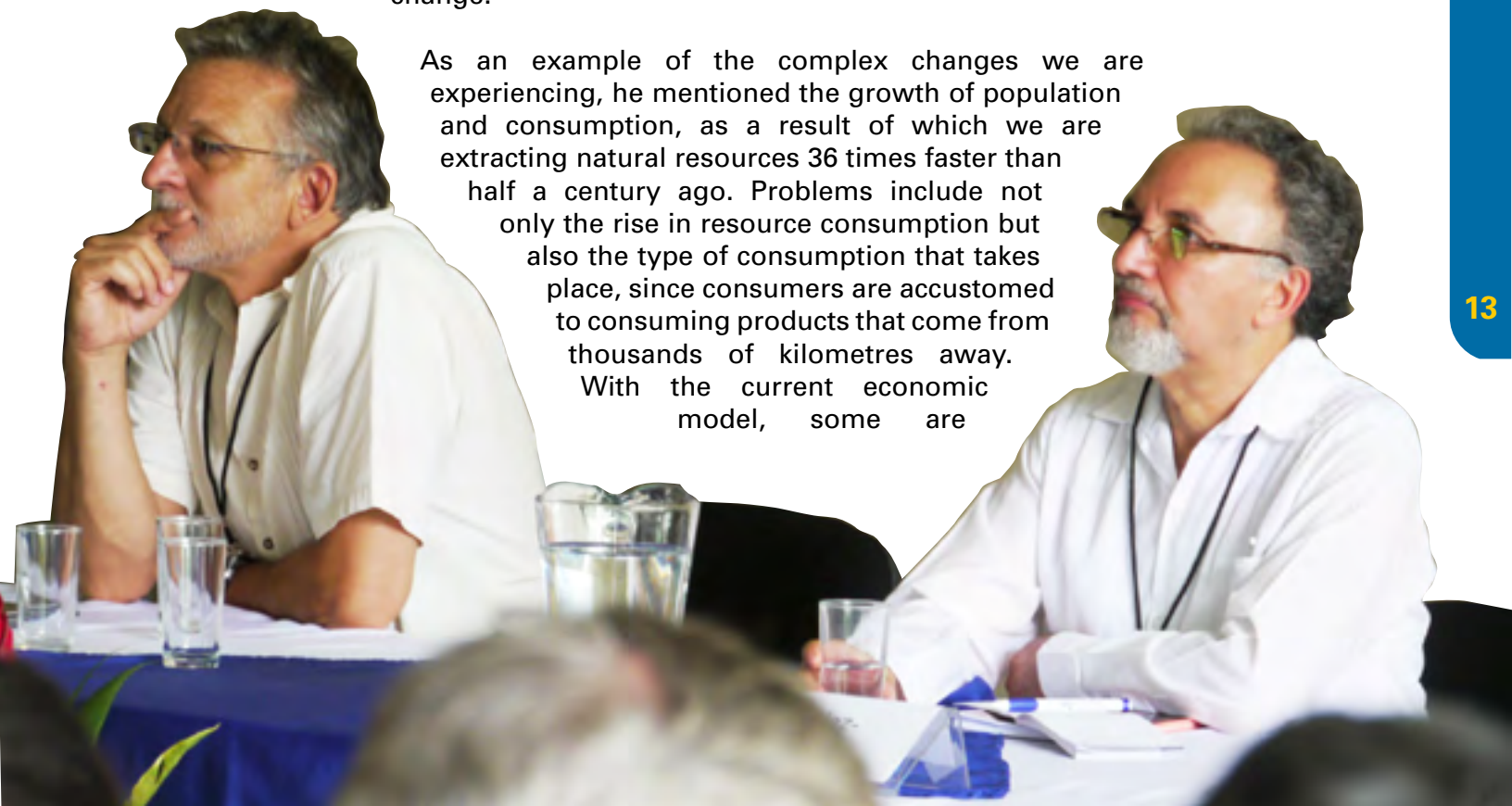
Moderator: Alicia Villamizar, member of the Intergovernmental Panel on Climate Change (IPCC) and of Simón Bolívar University (Bolivarian Republic of Venezuela)

Summaries of the presentations:

'Climate change education or education for regenerative development?'
Eduard Muller, University of International Cooperation (Costa Rica)

Eduard Muller provided a broad picture of what he refers to as 'global change'. Using information on the nine planetary boundaries, among which the integrity of biodiversity still has the greatest impact, with climate change in third place, he said that the situations of those boundaries are highly interrelated and all of them make up global change.

As an example of the complex changes we are experiencing, he mentioned the growth of population and consumption, as a result of which we are extracting natural resources 36 times faster than half a century ago. Problems include not only the rise in resource consumption but also the type of consumption that takes place, since consumers are accustomed to consuming products that come from thousands of kilometres away. With the current economic model, some are



exploiting nature very heavily without understanding or respecting its capacities.

He also shared interesting data and views, including the following:

- Costa Rica ceased to be sustainable in the 1970s. Central America has lost half of its biodiversity.
- Because of deforestation, the Amazon rainforest freed the same quantity of carbon dioxide (CO2) in 2005 as China and the Russian Federation. These global changes have serious consequences for the oceans. The seas are becoming warmer and more acidic, and as a result, irreversible thawing is taking place in Antarctica.
- The sea level on the west coast of the United States of America is rising by 6 cm per year.
- Food production is affected by temperature changes but also by the shortage of pollinators (owing to pesticide use) and the use of genetically modified organisms (GMOs).

The speaker emphasized that we are all involved in these impacts on nature and conscious of the damage we are doing, but the broad awareness of this that would be needed to achieve the necessary changes is not yet present. This is where education plays an important role: to make people face up to their responsibility within the great complexity of the situation and contribute to finding solutions.

The speaker asked his audience, 'Which way must we go?' The responses included the use of social networks to put pressure on politicians on these matters. On the subject of adaptation (which he

considers more difficult than mitigation), we need to know how to use information for appropriate land-use planning, by producing risk maps, for example. He emphasized the need to value communities' traditional knowledge so that they feel empowered to take decisions regarding their adaptation to new conditions.

Generally, he said that the model to be followed, with all the aforementioned actions, was one of regenerative development, taking into account not only social, environmental and economic dimensions but also spiritual and political ones. This was truly holistic development, breaking the barriers of reductionism and understanding that the basis of life is the integrity and functioning of all the ecosystems providing services essential for life on the planet. Its starting point was therefore land and its functionality, through creative management based on participatory governance with intense use of knowledge, seeking to achieve equity, justice and peace for true human well-being (happiness). It absolutely must serve the six pillars of development integrally, not separately.

Making progress towards a regenerative development model required education to seek to achieve, among other things, a multidisciplinary approach, complex thought and the promotion of multiple forms of intelligence.

'Education and communication on climate change: An approach based on social perceptions' Edgar González-Gaudiano, University of Veracruz (Mexico)

Edgar González-Gaudiano, considering educational programmes related to climate change, noted that they were usually based on processes of scientific literacy, providing information on the discoveries of climate science and the consequences for natural systems. These educational processes, however, have had little impact in terms of achieving behavioural changes in order to reverse the situation; they have failed to take account of social experience or of the social and cultural factors and processes involved in building social perception of climate change.

As an example, he noted that the Green at 18 programme, surveying 15-year-olds in the developed countries of the Organisation

for Economic Co-operation and Development (OECD), found that they had absorbed much information on complex systems, biodiversity, GMOs and other matters. The survey assessed whether they knew how to transfer that knowledge into their daily lives, and it transpired that they knew how, but did not actually do it.

Thus, he added, although we are asking educational systems to make progress in scientific literacy on global changes, this does not ensure that anything will change. The main barrier to the needed social change is the complex structural nature of the problem, comprising moral, socio-political, cultural, sociocognitive and psychosocial obstacles that affect the population's social perception of the problem and make it harder to achieve significant changes in individual and collective lifestyles relating to human activities that cause climate imbalance.

The speaker commented on a research project in which he was taking part, together with other universities, considering climate change as an object of social perception among university students. It showed that students more generally associated climate change with the climate rather than, for example, with losses in food production, rising poverty and disease.

The speaker identified the following obstacles to improved understanding of climate change and the possible ideas for taking action:

1. The name of the phenomenon: it has been called the greenhouse effect, global warming, climate crisis, global change and climate change. In the United States, academics, government officials and the private sector deliberately use different terms. It would be better to define an appropriate term that could help to give effect to actions in daily life.

2. Association with the ozone layer: many people continue to associate the two phenomena, believing that climate change is due to the hole in the ozone layer. It may be that the press and leaders of opinion associated with the two phenomena are causing the confusion.

3. We continue to think the atmosphere is very large, and this makes it hard for people to understand its fragility. To demonstrate how thin and fragile it is, schools should use the simile of an apple peel rather than orange peel.

4. There is also confusion between the concepts of weather and climate. A two-degree rise in the weather is not very serious,

since larger variations can occur in one day. A two-degree rise in the climate, however, would involve huge changes.

5. In educational processes, we are faced with questions such as 'why should I change when others are not going to do so?' and 'what can I do?' We suffer from tragic optimism, which will not make things easy, as De Souza put it, but we must trust our ability as social actors to achieve change.

6. Most people fail to see the connection between climate change and poverty, inequality, disease and lifestyles. They believe that the impact is far away, at the North and South Poles, and not so much in their own localities.

7. Insidious denial: much of what is slowing our global action against climate change is that there are still many who deny its reality or timing. They question climate science and denounce errors and the political nature of IPCC. 'Hard scientists' are not great communicators. This is what makes it hard to improve public awareness of these messages. Climate change deniers promote non-alarmist reports on the subject. What is said in the media, in informal contexts, is having more impact than what is said in schools.

SESSION I:

Policies, strategies and partnerships on climate change education in Latin America and the Caribbean

Session I:

Policies, strategies and partnerships on climate change education in Latin America and the Caribbean

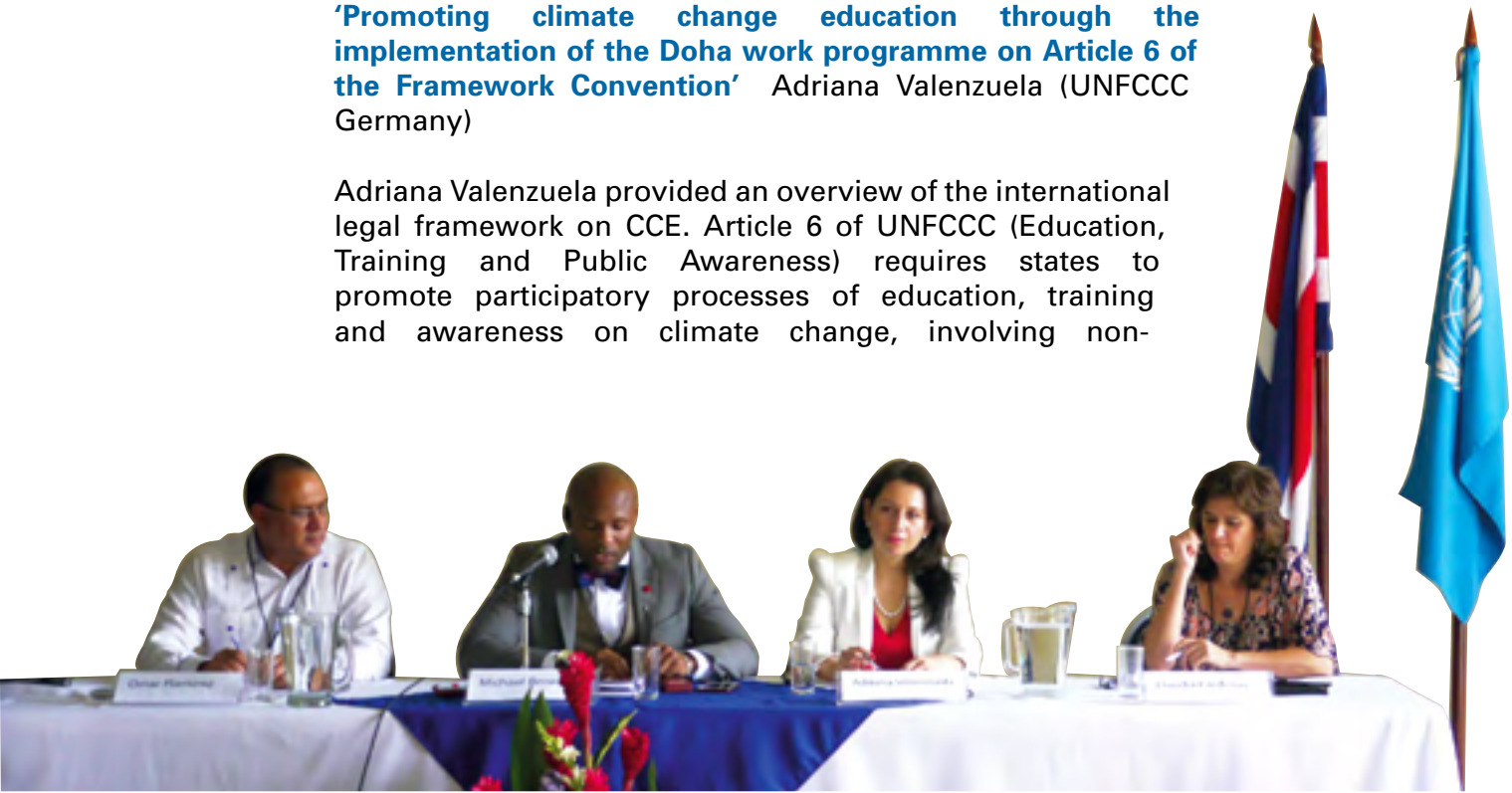
Presentations:

- **'Promoting climate change education through the implementation of the Doha work programme on Article 6 of the Framework Convention'** Adriana Valenzuela (UNFCCC Germany)
- **'Establishing a Regional Learning Programme on Climate Change in Central America (SICA)'** Omar Ramírez, National Council for Climate Change and Clean Development Mechanism (Dominican Republic)
- **'SICA efforts on climate change education'** Claudia Cárdenas Becerra, Central American Educational and Cultural Coordination, SICA

Moderator: Michael Browne, Minister of Education, Science and Technology (Antigua and Barbuda)

'Promoting climate change education through the implementation of the Doha work programme on Article 6 of the Framework Convention' Adriana Valenzuela (UNFCCC Germany)

Adriana Valenzuela provided an overview of the international legal framework on CCE. Article 6 of UNFCCC (Education, Training and Public Awareness) requires states to promote participatory processes of education, training and awareness on climate change, involving non-



governmental actors. Regarding the history of Article 6, she noted that work programmes for its implementation had been conducted since 2002. The Doha work programme, launched in 2012, is currently under way and will continue until 2020; a midterm review will take place in 2016.

The Doha work programme is based on the principle of common but differentiated responsibilities. It proposes that actions relating to Article 6 should be included in national and regional climate change strategies and that partnerships should be created with other conventions and other sectors. It emphasizes six areas of action: education, training, awareness, international cooperation, public access to information and public participation.

The Secretariat of UNFCCC, at Bonn (Germany), does not carry out actions but provides support in the various areas of work (such as the implementation of the Doha work programme), and is committed to providing access to information on that. It has proposed that each country should designate a focal point for Article 6, to be nominated by the convention focal points in each country. Since 2012, to support the implementation of actions, the secretariat has organized annual forums for dialogue among Article 6 focal points for the sharing of experience and knowledge.

Ms Valenzuela added that the Lima Ministerial Declaration on Education and Awareness-Raising, adopted at the 20th session of the Conference of the Parties, had given a major boost to the implementation of Article-6, urging states to give increased attention to the areas of action of the Doha work programme.

She also drew attention to good practices adopted by governments and other interested parties to illustrate how Article 6 had influenced education policies and practical actions, such as:

- The national carbon neutrality strategy of Costa Rica, which includes a section on each component of Article 6.
- Uganda's national strategy on CCE, and the strategy of the Dominican Republic (presented at Session II of this meeting).
- The project titled Education for the Future provides an example of ministerial cooperation between Italy and a number of African countries. Exchanges have been promoted between Italian schools and those of several African countries, which have created a network called SUSTAIN.
- A model project in the Seychelles, supported by the United Nations Environment Programme (UNEP), where work has

been done with ten schools to define climate change adaptation measures such as catching rainwater from school roofs.

- A youth movement called CliMates, involving young people from all over the world who participate actively in the Conferences of the Parties, plans to hold a parallel youth conference on climate change in late 2015 in Paris. Young people have an important role in generating information and concrete actions in relation to solving today's climate change issues.

In the area of challenges and opportunities, the speaker mentioned that considerable efforts are needed to raise public awareness and that financial resources, institutional capacities and inter-agency coordination were needed in order to make progress in the implementation of Article 6. During the current year, at COP 21, a new climate agreement will be signed that will change the current dynamic because all countries will be committed. It will not only be an agreement on mitigation but will also propose adaptation measures.

For further information, see: *www.unfccc.int*

Contact information: *article-6@unfccc.int*

'Establishing a Regional Learning Programme on Climate Change in Central America (SICA)' Omar Ramírez, National Council for Climate Change and Clean Development Mechanism (Dominican Republic)

Speaking as the representative of the Government of the Dominican Republic on processes relating to climate change, Omar Ramírez described the Regional Learning Programme on Climate Change, an initiative that SICA has decided to support.

The idea arose out of a programme titled UNCC Learn promoted by the Secretariat of UNFCCC, supported by the Government of Switzerland through the United Nations Institute for Training and Research (UNITAR). The objective of the programme is to help to strengthen institutional capacities to tackle climate change. During its pilot phase (2011-13) it worked with five countries in different regions of the world; the only one of them in Central America was the Dominican Republic.

On the basis of the experience of the Dominican Republic with the UNCC Learn project, it was decided that the regional climate change strategy for Central America should include the creation of a regional learning programme on the subject. The areas of action of the regional strategy in relation to education, training and awareness-raising are:

1. secondary and higher education;
2. the media and the public; and
3. sharing experience within the region.

These areas of action are the basis of the proposed Regional Learning Programme on Climate Change, whose objectives are to:

- improve personal and social resilience and bring about high-quality public debate on climate change in Central America;
- leverage the experience of SICA member states in learning on climate change, create shared initiatives and gain access to funding; and
- strengthen the region's diplomacy and coordination on climate change.

Through the Central American Commission on Environment and Development (CCAD), SICA will implement that regional programme, beginning with a pilot phase (2015-17) including a survey and assessment of requirements for learning on climate change, regional forums, resource mobilization and implementation of concrete learning activities.

'SICA efforts on climate change education' Claudia Cárdenas Becerra, Central American Educational and Cultural Coordination, SICA

Following on from the previous presentation, Claudia Cárdenas described the efforts of the various parts of SICA to promote CCE and disaster risk reduction. The member states of SICA are Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and Panama.

One part of SICA, which acts as its secretariat and is responsible to the Council of Ministers of Education and Culture, is the Central American Educational and Cultural Coordination System (CECC). CECC has two projects:

- a project on disaster risk reduction and principles of protection, working with education ministries; and
- creation of the Environment and Education Area to work within CECC.

The education ministries asked CECC to work on two policies to mainstream the subject of climate change: a Comprehensive Risk Management Policy and a Central American Education Policy. There are five ministerial agreements concerning these matters.

The Central American University Council (CSUCA), a specialized entity within SICA, has a university programme on risk management. This consists of 48 university projects at 21 universities, working on mainstreaming the subject of risk management in curricula, outreach programmes and safe universities.

The speaker mentioned challenges facing education ministries in working on climate change and disaster risk reduction, including:

- creating awareness among senior officials in education ministries in order to focus greater efforts towards knowledge and responsibility in dealing with climate change;
- persuading governments to invest more in CCE, impacts on livelihoods and adaptation measures; and
- education on the right to live in a healthier and more balanced world from early childhood and at all levels of education, including initial teacher training.

Recommendations

Two groups were formed to analyse this session. The moderators were Lorna Oliver Down, Faculty of Education, University of the West Indies (Jamaica); Rosa María Chacon, Simón Bolívar University (Bolivarian Republic of Venezuela); Wendy Calderón, Technical Secretary, Mario Molina Centre (Mexico); and Corrina Grace, Supporting Ecological Resilience and Environmental Sustainability (SERES) (Guatemala). The following recommendations were made on the subject of Session I:

- Establish national working groups to coordinate activities relating to CCE.
- Identify and list policies at the regional and national levels relating to climate change (with the education component).
- Review the regional climate change policy of the Caribbean Community Climate Change Centre, with emphasis on reviewing the centre's curriculum.
- Connect plans on CCE and ESD with national development policies and policies on innovation, science and technology.
- Promote partnerships among education and environment ministries, NGOs and educators.
- Identify implementation strategies for CCE and ESD policies.
- Make use of young people's enthusiasm and commitment to involve them in promoting policies that incorporate CCE and ESD.
- Work collectively with the various actors for CCE and ESD projects.

Key institutions in the region that may have convening abilities:

a) international organizations such as UNESCO, the Union of South American Nations (UNASUR), SICA, the Organization of American States (OAS) and UNEP;

b) educational organizations such as universities, the Latin American Faculty of Environmental Sciences (FLACAM), the Latin American Platform on Climate (LAPC) (http://intercambioclimatico.com/en/about-lapc.html) and the Alliance of Ibero-American University Networks for Sustainability and the Environment (ARIUSA); and

c) NGOs such as the Independent Association for Latin America and the Caribbean (AILAC).

SESSION II:

Training and awareness-raising on climate change

Session II:

Training and awareness-raising on climate change

Presentations:

- **'Declaration of carbon neutrality in the framework of the country programme and national climate change strategy'** Kathia Aguilar, Environment Ministry (Costa Rica)
- **'Climate change and education for sustainable development, challenges and opportunities'** Marianela Curi, Latin American Future Foundation (Ecuador)
- **'Experience of development and implementation of the national strategy for climate change education in the Dominican Republic'** Andrea Griselda Rincón, National Teacher Training Institute (INAFOCAM) (Dominican Republic)

Moderator: Ofelia Flores, Department of Climate Change, Ministry of Energy, Natural Resources, Environment and Mines (Honduras)

'Declaration of carbon neutrality in the framework of the country programme and national climate change strategy' Kathia Aguilar, Environment Ministry (Costa Rica)

Kathia Aguilar, from the Climate Change Department of the Environment Ministry of Costa Rica, presented the country programme on carbon neutrality, part of the national climate change strategy.

The national strategy has implementation components at the national level (mitigation and adaptation) and the international level (political impact and attraction of external resources).

She added that the carbon neutrality programme is part of the mitigation agenda, seeking to reduce emissions. The sectors facing the greatest challenges are transport, agriculture and waste management. The programme comprises a national standard created by the Technical Standards Institute of Costa Rica (INTECO), an adapted form of the

ISO 14064 standard, which provides for the issuing of a certificate to all those wishing to prove their carbon neutrality. The process requires measurement of emissions and plans for reduction and offset. There are three degrees of emissions: direct degree 1 (for example, in fuels used for transport), indirect degree 2 (energy) and indirect degree 3 (third-party emissions that are therefore not measured).

There are three offset schemes:

- CER: Certified Emission Reduction
- VER: Voluntary Emission Reduction
- UCC: Costa Rican Offset Units. Carbon offset purchases on a local market that is not responsible solely to the government body, the National Forestry Financing Fund (FONAFIFO).

The speaker explained the process of achieving carbon neutrality (see her presentation) and noted that the programme was an incentive for generating public-private partnerships. The production sector and the government have entered into the Alliance for Carbon Neutrality, which will build businesses' capacities to achieve reductions in greenhouse-gas emissions. These partnerships generate institutional informal learning processes on carbon neutrality.

Since the programme began in 2012, the numbers of businesses and civil-society bodies obtaining certification have increased steadily.

In the area of adaptation, the speaker mentioned that the national climate change strategy provided for the creation of an adaptation fund. Funding would be provided through Fundecooperación and

would be used in projects with the agricultural sector, in the water sector, in coastal and fishing zones, and in capacity building, which would be given priority at the subregional level.

'Climate change and education for sustainable development, challenges and opportunities' Marianela Curi, Latin American Future Foundation (Ecuador)

Marianela Curi began her presentation with some thoughts on the principles to be taken into account in CCE and ESD:

1) a holistic vision and an integrated approach;
2) the precautionary principle;
3) shared and differentiated responsibility;
4) equity;
5) participation;
6) subsidiarity; and
7) an intercultural approach.

In accordance with these principles, the Latin American Future Foundation has promoted processes in the area of climate change, seeking to:

- strengthen leadership and facilitate the coordination of views and policies on sustainable development in Latin America;
- promote a culture of dialogue and systems of good governance for mainstreaming climate change in national and subnational development agendas;

- generate information and share learning for decision-making in response to climate change; and
- generate and strengthen capacities among decision-makers and civil-society actors to tackle the challenges of climate change.

The foundation's capacity-building work has focused on decision-makers in the region's national and subnational governments and various areas of civil society. This effort has been based on the generation of information and evidence for decision-making for climate-compatible development and capacities in climate-change-related areas, within national climate change agendas and strategies; it has also conducted capacity-building activities relating to understanding international negotiations on climate change and participating with improved capacities.

As part of its work in the area of climate change, the foundation functions as the executive secretariat of the LAPC and the regional coordinator of the Climate and Development Knowledge Network (CDKN) for Latin America and the Caribbean. Through these initiatives, it seeks to narrow the gap between science and politics in the interest of climate-compatible development. Colombia is an example of a state that is moving in that direction.

In terms of lessons learned on the work it has carried out, the speaker mentioned the importance of strengthening ESD processes to include the subject of climate change and that work on public policy is important to accelerate change, but experiences on the local scale should contribute to public policies on the basis of concrete practice.

'Experience of development and implementation of the national strategy for climate change education in the Dominican Republic'
Andrea Griselda Rincón, INAFOCAM (Dominican Republic)

Andrea Griselda Rincón provided more detail on the experience, mentioned by Omar Ramírez during the previous session, of the national strategy on learning for climate change conducted by the Government of the Dominican Republic in 2012, with support from the One UN Climate Change Learning Partnership (UN CC: Learn) initiative and from the office of the president.

The activities include a training and awareness campaign with some 40 social communicators in coordination with the Dominican Journalists' College and the Press Workers' Union (May 2013). There was also a training programme for primary- and secondary-school

teachers; to date, over 1,000 teachers have been trained and climate change has been incorporated into the official curriculum. There have also been partnerships with a number of universities, which have held workshops for university-level teachers who will provide training for teachers currently in service.

INAFOCAM, a decentralized institution which coordinates teacher training and instruction activities, has undertaken training of 3,000 new teachers in 2016 using US$1 million of its own funds.

The speaker added that in this programme, teacher training is approached from an environment and health viewpoint, where people are encouraged to:

- identify human behaviours that have consequences for the environment;
- adopt an ethical, critical and positive attitude to actions and risk factors that affect community health, ecosystem health, climate change and biodiversity;
- take action to preserve natural resources; and
- adopt rational consumption habits in accordance with their needs and the available resources.

As Omar Ramírez explained during the previous session, in light of the success of this experience, SICA has officially requested a process of capacity transfer based on this initiative for all the Central American countries.

Recommendations

Two working groups were organized to analyse this session. Their moderators were: Diego Diaz Martín, Vitalis (Bolivarian Republic of Venezuela); Aura Barba, Association of Amazonian Universities (UNAMAZ) (Plurinational State of Bolivia); Carlos Rojas, Minister of the Environment (Peru); and Olga Maria Bermudez, Institute of Environmental Studies (IDEA), National University (Colombia). The following are some of the main recommendations:

- Promote the implementation of online courses on CCE and ESD.
- Promote multicultural master's degree courses for environmental managers, to complement scientific knowledge with popular wisdom and traditional knowledge.
- Provide technical assistance to educators on the relationship between climate and water resources, so that schools can form links and generate databases to learn about microclimate change.
- Generate methodologies for the interpretation of social perceptions.
- Promote certification or accreditation of teachers in subjects related to sustainability and climate change.
- Deinstitutionalize teaching practices and bring them closer to everyday life, and strengthen training in political subjects that can change people's lives.
- Promote the sharing of experience (job fairs and internships).
- Promote 'schools of nature'.
- Produce spaces for exchanges between communicators and teachers through educational networks and complementary training methods.
- Promote partnerships with the private sector, connecting the latter to issues of social responsibility.
- Provide increased financial support from international agencies and greater technical assistance.
- Document good practices in the area of sustainability and climate change.
- Promote a differential approach to safeguard human rights and rights of nature, and recognize biological and cultural diversity and the decolonization of thinking.
- Update contents and provide training in the development of new ways of teaching on sustainability, including traditional knowledge.
- Promote internships and the sharing of successful experiences.
- Create large and well-designed campaigns via the mass media and social networks.

The working groups identified about 55 experiences in training and awareness-raising on climate change in the region. These and the specific recommendations put forward may be found here: *http://www.earthcharterinaction.org/invent/details.php?id=1011*

SESSION III:

The role of various groups in promoting climate change education: Promoting collaboration

Sesión III:

The role of various groups in promoting climate change education: Promoting collaboration

Presentations:

- **'Education for young people in climate change'** Santiago Ismael Vega Ruiz, Climate and Cryosphere Programme (CliC) (Costa Rica)
- **'Good Living and indigenous peoples dealing with climate change'** Lorena Terrazas, Red Paz, Integración y Desarrollo (Peace, Integration and Development Network) (Plurinational State of Bolivia)
- **'The role of consumers' associations in climate change education'** Luis Flores, Consumers International (Chile)
- **'Strengthening collaboration between groups for climate change education at the local level'** Gabriela Batista, Environment Secretariat, Government of Brasilia (Brazil)

Moderator: Javier Urbina Soria, National Autonomous University of Mexico (UNAM)

'Education for young people in climate change' Santiago Ismael Vega Ruiz, Climate and Cryosphere Programme (CliC) (Costa Rica)

The speaker shared his experience of the involvement of young people in politics. CLiC is a movement of young people in Latin America and the Caribbean who are concerned about climate change. He underlined the importance of empowering young people and involving them in issues of social and environmental development. There are many ways of doing so in both formal and informal contexts. Innovation is required in education, incorporating different information sources and ways of exercising power in terms of decision-making. He cited the example of young people who currently hold highly influential government posts and young activists who have had an effect on historic processes of change such as the Arab Spring, events where social networks and informal positions of power managed to achieve change.

CLiC is made up of young people from 13 Latin American and Caribbean countries, and seeks to do the following:

- take a 'bottom-up' approach;
- develop and share projects and ideas rather than emphasizing research; and
- collect the opinions of young people in Latin America and the Caribbean and build them into an influential lobby in the region.

CLiC has conducted training for participation in COP 21 in Paris and will hold a regional meeting in Mexico before the session of the Conference of the Parties. CLiC is trying to make sure that people understand that young people can come to power, and will do so, without boycotts, seeking to enter formal spaces so that they can have an impact.

'Good Living and indigenous peoples dealing with climate change' Lorena Terrazas, Integración y Desarrollo (Peace, Integration and Development Network) (Plurinational State of Bolivia)

Lorena Terrazas said that unlike many other countries, the Plurinational State of Bolivia has recognized the rights of the indigenous peoples and of Mother Earth. The state is seeking to restore the paradigm of Good Living, taking account of the principles of the world view of the large variety of indigenous groups living in the country (at least 36 groups).

That paradigm is incorporated into the Mother Earth Act (Act No. 300), which defines Good Living as a civilizing cultural horizon that is an alternative to capitalism. This means constructing a new environmental, social, cultural and economic order based on and arising out of the historical vision of the indigenous peoples.

The speaker shared the following 13 principles of Good Living (Suma Qamaña) of the Aymara people:

1. Suma Manq'aña: Knowing how to eat.
2. Suma Umaña: Knowing how to drink.
3. Suma Thokoña: Knowing how to dance.
4. Suma Ikiña: Knowing how to sleep.
5. Suma Irnakaña: Knowing how to work.
6. Suma Lupiña: Knowing how to meditate.
7. Suma Amuyaña: Knowing how to think.
8. Suma Munaña Munayasiña: Knowing how to love and be loved.
9. Suma Ist'aña: Knowing how to listen.
10. Suma Aruskipaña: Knowing how to speak.
11. Suma Samkasiña: Knowing how to dream.
12. Suma Sarnaqaña: Knowing how to walk.
13. Suma Churaña, suma Katukaña: Knowing how to give and knowing how to receive.

How do the indigenous peoples live these and their other values in dealing with the climate change situation and their view of development? That was the subject of a field project in which the speaker had taken part and that she shared in her presentation. The project consisted of indigenous socio-environmental monitoring with eight indigenous peoples in the Bolivian Amazon region and Chaco, which are areas where gas extraction companies are exploiting natural resources. An environmental conflict is taking place there because the values of the indigenous peoples and their respect for Mother Earth

are clashing with the companies› activities. Through the monitoring, attempts are being made to help the indigenous peoples to defend their rights while avoiding confrontation so that these peoples know their rights, and although there is no win-win situation between them and the companies, at least they have some tools for negotiating and defending their rights.

Another action supporting the inclusion of the indigenous world view in relation to climate change is the training of indigenous women to value their knowledge and enable them to take part in decision-making regarding climate change adaptation in their communities. Young people are participating in Conferences of the Parties on climate change and are launching a campaign relating to the climate agreement to be adopted at COP 21, applying principles belonging to the indigenous world view.

In conclusion, the speaker mentioned some ideas regarding the need to see climate change as a social and economic issue and reasoned that the capitalist system, the profit motive, and patterns of consumption and production are among the serious problems to be dealt with.

'The role of consumers' associations in climate change education'
Luis Flores, Consumers International (Chile)

Luis Flores described Consumers International as a federation of consumers' organizations with 220 members in 115 countries. They are independent non-profit bodies working in research and public awareness on the subject of consumption.

It is now widely recognized that unsustainable models of production and consumption are causing the global changes that are having such an impact on the planet's capacity to sustain life, including climate change. In addition to this there are social problems that have to do

with poverty, shortages, income inequality and overconsumption, leading to problems of public health.

The speaker added that the issue of consumption has been studied in various UN activities, including the Marrakech Process, coordinated by the UNEP. That process has produced a plan of action to promote sustainable consumption and production and promote the concept of sustainable lifestyles (related to cultural aspects). One of the actions is to understand and characterize consumption, which is an extremely complex process and a structural factor in the economies of all countries; it also has an individual ethical dimension and a collective dimension (in relation to regulations on the types of products to be consumed).

Consumption must not be demonized, since the social order is based on it. What Consumers International has done is to raise awareness of types of consumption, which have individual and collective dimensions, where independence is valued, but account must be taken of the individual and environmental impacts. With globalization and growing awareness of the environmental and economic impact of production and trade, consumers are increasingly interested in being informed regarding the environmental, ethical and social impacts of goods and services and the industries that provide them.

As a result, education on consumption becomes education for citizenship, where consumers are empowered to demand transparency in political systems and become involved in decision-making processes. The speaker cited the example of anti-smoking campaigns, an interesting example of consumers getting involved and achieving progress in the political arena in relation to consumption.

Lastly, he presented a painting that was a self-portrait of Frida Kahlo at the border of the United States. He reflected that we are at the border of 'development' but we are at a frontier where many indigenous cultural identities are in danger of disappearing.

'Strengthening collaboration between groups for climate change education at the local level' Gabriela Batista, Environment Secretariat, Government of Brasilia (Brazil)

The Brazilian capital has an interesting dynamic, given its importance at the federal level but also local factors because it is a medium-sized city with 3 million inhabitants. The same government controls the Federal District and the municipality. The plan is to turn Brasilia into a sustainable educational city.

In relation to climate change, problems of access to water are seen as the main issues that will affect Brazil. In particular, it is known that this will affect energy production, because the country's energy matrix is mostly hydroelectric.

Actions are taking place to diversify energy sources (such as boosting solar energy), and work is under way in schools to promote alternative electric power projects.

As for education, Brazil has approved national laws and strategies for environmental education, but they are not yet implemented effectively. The secretariat of the local government is coordinating a working group with 25 other secretariats to ensure that all educators can be aware of and talk about issues in the city and come up with solutions to any environmental problems they face. One example of a successful experience is the School of Nature, a park constructed in a conservation area where children can go and take outdoor classes. There are plans to strengthen and expand these experiences of educational programmes in the city's parks.

As part of his comments as moderator, Mr Urbina briefly presented his book, *Más allá del cambio climático. Las dimensiones psicosociales del cambio ambiental global.* (Beyond climate change: Psychosocial dimensions of global environmental change.) It can be found at *www.inecc.gob.mx*

Recommendations

A working group was formed to analyse this session. Its moderators were Luis Flores, Consumers International (Chile), and Marleny Rosales, Organization for Nature Conservation and Community Development (ORCONDECO) (Guatemala). The following are the main recommendations identified:

- Educate mass-media communicators (journalists and their networks) on climate change and CCE.
- Translate technical and scientific discourse into everyday language.
- Seek to take a positive approach in discourse.
- Contextualize communications with the target group.
- Educate through the church (religious communities) and other leadership groups.
- Generate strategies to involve the private sector.
- Use information and communication technologies (ICTs) and social networks.
- Deinstitutionalize education.
- Integrate art, values and ethics, and traditional knowledge as tools in education. Project a 'bottom-up' educational approach.
- Use popular theatre as an educational tool.
- Promote training of trainers.
- Help to organize local groups to develop climate change mitigation or adaptation activities.
- Identify local leaders and motivate them to make environmentally friendly changes.
- Consider the regional initiative based on Principle 10 of the Rio Declaration on Environment and Development, promoted by the Economic Commission for Latin America and the Caribbean (ECLAC).
- Generate educational methodologies and tools that are flexible and easy to adapt to local realities.
- Consider mitigation and adaptation separately, and adjust them to local realities.
- Use the ecosystem approach.
- Ensure that all key actors are present, with effective representation of their reference groups and/or communities.
- Work towards social empowerment.
- Seek more effective ways of communicating on the basis of everyday life.

SESSION IV:

“Whole institution” strategies for climate change education

Session IV:

"Whole institution" strategies for climate change education

Presentations:

- **'Complementary strategies for effective education for climate change and sustainable development'** Lorna Down, University of the West Indies (Jamaica)
- **'Measurement and reduction of the carbon footprint of educational centres: A step towards climate change mitigation'** Alexa Morales, FUNDECOR (Costa Rica)
- **'ARIUSA: Alliance of Ibero-American University Networks for Sustainability and the Environment'** Orlando Sáenz, University of Applied and Environmental Sciences (Colombia)

Moderator: Rene Donoso Sereño, Ministry of the Environment (Chile)

'Complementary strategies for effective education for climate change and sustainable development' Lorna Down, University of the West Indies (Jamaica)

Lorna Down described two complementary strategies for the inclusion of CCE and ESD that are being applied in Jamaica: the infusion strategy and the 'whole institution' approach.

The infusion strategy is the one with which most educational institutions begin, involving individuals wishing to incorporate the subject into their classes or the work that they do. It does not involve generating anything completely new, but teachers can enrich their work by adding content on climate change and sustainability.

She added that in order to begin with this strategy, it is important to recall and put in context the educational goals sought; the content relating to climate change, even in non-science classes, must be placed in context and must be able to be mentioned in any subject being taught; and the students' viewpoint must be kept in mind, finding ways of activating their critical and systemic thinking in relation to the subject matter and giving them the desire to take action. The content must therefore be placed in a context that is meaningful for the students.

The speaker described her experience in a teacher training institute in Jamaica, with a literature class into which she introduced the subject of climate change. She began teaching on the subject of climate change, and sought out literature and the possibilities it offered. She observed that it was possible to create empathy, generate values through reading and conduct literary exercises on the subject. The students also examined their relationship with climate change.

She added that UNESCO had an online course on climate change and sustainable development that offered a wealth of activities, photographs and material to be used.

On the 'whole institution' approach, she said that it was the ideal strategy because it involves not only the curricular content but the entire educational experience. It is important to involve those responsible for the curriculum, facilities and cultural activities, be they educators, students, parents or members of the community, and create synergies among them.

These 'whole institution' processes require dedicated leadership, administrative support from the institution and a clear monitoring and assessment system.

'Measurement and reduction of the carbon footprint of educational centres: A step towards climate change mitigation' Alexa Morales, FUNDECOR (Costa Rica)

Alexa Morales shared the lessons learned from a project arising out of a public-private partnership between the Ministry of Education and the Banco Davivienda to incorporate the carbon footprint component into the Ecological Blue Flag Programme for educational centres, which began in 2011. This is a programme of institutional certification of environmental good management; in this case, for educational institutions.

The speaker described the project, which creates a tool for estimating the carbon footprint by identifying sources of greenhouse-gas emissions from a particular educational centre. At the country level, it has been found that the main sources of greenhouse-gas emissions from educational centres are liquefied petroleum gas (LPG) and the waste generated, as first-degree emissions; electric power generation as a second-degree emission; and public-private transport as a source of third-degree emissions. From the data obtained, a simple, accessible and replicable measurement system was constructed. It indicates how to assess efforts to reduce greenhouse gases and can be incorporated into educational centres through the carbon footprint reduction manual for educational centres.

Three pilot projects were implemented to develop this tool, with two schools that were already members of the Blue Flag Programme and one that was not. They conducted the greenhouse-gas inventories and proposed environmental projects for carbon offset purposes. From the lessons learned, training was provided to student life counsellors and Ministry of Education regional counsellors in order to obtain input for the manual.

When the manual was ready, training was provided directly to a total of 205 officials of the Ministry of Education of Costa Rica, representing 27 regional directorates, 60 educational centres and 2 ministry buildings. In some subregions, such as San Carlos, all educational centres had access to this carbon footprint measurement tool; efficiency was less high in some other areas.

'ARIUSA: Alliance of Ibero-American University Networks for Sustainability and the Environment' Orlando Sáenz, , University of Applied and Environmental Sciences (Colombia)

Orlando Sáenz is a member of ARIUSA. He described the experience of this network of networks, which has been active since 2007. ARIUSA is part of a larger network, the Global Universities Partnership on Environment for Sustainability (GUPES), coordinated by UNEP. He is also a partner in the GAP-ESD, coordinated by UNESCO.

ARIUSA is made up of 19 environmental university networks, with some 300 universities in 11 countries in Latin America and the Caribbean. Its mission is to promote the coordination of activities and cooperation among university networks and higher education institutions so that an ever-greater number of them can strengthen their commitment to the environment and sustainability.

The work of ARIUSA was recognized in 2014 at the 19th meeting of the Forum of Ministers of the Environment of Latin America and the Caribbean and by the final report of UNESCO on the UN Decade of Education for Sustainable Development, presented at Nagoya, Japan. In 2013 it held a Latin American forum and ten national forums on universities and sustainability. It is currently promoting national analyses on the institutionalization of universities' environmental commitment in the areas of policy, training, research, outreach and institutional management.

In relation to one-off actions relating to education for climate change and sustainable development, the speaker said that although ARIUSA is not implementing anything specific, the universities within the network are conducting quite a few activities, mostly in research and outreach projects; there is, however, no detailed list of these actions.

For example, the speaker mentioned the Inter-university Environmental Network of Peru, which has the greatest number of universities as its members (68); together with the Ministry of the Environment, they have drafted guidelines on climate change adaptation for universities. He also mentioned the Training and Instruction Network in Guatemala,

which took the initiative for the creation of the National Scientific Council on Climate Change.

Recommendations

The moderators of this group were Waverli Matarazzo-Neuberger, Methodist University (Brazil), and Petal Punalall Jetoo, from the Ministry of Education of Guyana. The following were the main recommendations identified:

- Climate change should be taught in the context of the planet, sustainability, culture, peace and democracy, among others.
- Regional collaboration should be promoted through the Caribbean Community Climate Change Centre and the Caribbean Disaster Emergency Management Agency (CDEMA) (Barbados).
- Celebrities in each society should be requested to talk on the subject of climate change.
- Community-level learning should be promoted (visiting homes and communities).
- Monitoring and assessment of sustainable communities should be included, and the impact of what is taught should be monitored.
- The ISO 9001 standard should be used as a model for holistic or 'whole institution' strategies in schools.
- The subject should be approached with a 'whole institution' vision and strategy, to help schools and teachers to include the

subject without making additional work for themselves. (The fact that teachers feel overworked is a major challenge.)

- 'Whole institution' strategies should focus on change through learning and learning through change.

A document with specific comments by the participants on the subject of this session can be found at *http://www.earthcharterinaction.org/invent/details.php?id=1011*

SESSION V:

Building community resilience through education for disaster reduction

Session V:

Building community resilience through education for disaster reduction

Presentations:

- **'Caribbean experience in knowledge-building and awareness-raising on disaster reduction'** Gale Drakes, CDEMA (Barbados)
- **'Ethical and political commitments underlying the concepts of resilience and adaptation'** Gustavo Wilches-Chaux (Colombia)
- **'Local capacities and resilience: Integrating knowledge of disaster risk reduction and climate change adaptation'** Fernando Briones, *Politecnico di Milano* (Polytechnic University of Milan) (Italy), and CIESAS (Mexico)

Moderator: Sandra Elizabeth Alas Guidos, Ministry of Education (El Salvador)

'Caribbean experience in knowledge-building and awareness-raising on disaster reduction' Gale Drakes, CDEMA (Barbados)

Gale Drakes described some experiences in the Caribbean in strengthening knowledge and awareness of risk reduction and issues of climate change adaptation at the community level.

These activities have been carried out by CDEMA, which works in 18 countries on the basis of a regional strategy on disaster management. The strategy has different priorities depending on the country, but it has four central pillars: institution-building, generating knowledge,

making disaster management a cross-cutting theme across different sectors and building community resilience.

The area of knowledge generation comprises a regional disaster management network to improve access to information for decision-making, an integrated system for policy-making and decision-making, a system to incorporate information on communities and sectors in the area of risk assessment, and creation of educational materials and training processes applicable in the region.

On that last point, work has been done to create political and legislative frameworks on risk management and to create partnerships, especially with institutions working in the area of climate change, to make progress in joint training on those two subjects.

Training has taken place in formal settings (by creating postgraduate programmes and including the subject in school curricula), and non-formal and informal contexts ('climate smart' programme, youth initiatives and various community programmes).

The speaker mentioned a number of educational resources in this area, including a 'safer building course' for construction companies, a community-preparedness training tool to assist community facilitators in relation to responses to natural disasters, and a community disaster management programme called Climate Smart, which is an input to the aforementioned training tool. There is also a safe schools programme that offers certification and provides a series of indicators to promote safer schools in terms of disaster preparedness.

'Ethical and political commitments underlying the concepts of resilience and adaptation' Gustavo Wilches-Chaux (Colombia)

Gustavo Wilches-Chaux said that the subject of this presentation, with additional details, could be found in his blog, *Aguaceros y Goteras* (downpours and slow leaks).

He added that we are at a moment in history when we can no longer lie to ourselves, for example, regarding the situation of the climate or water resources. He added that it was a fascinating time in the history of humanity and of life on Earth. Millions of years ago, some bacteria were able to use water, CO2 and sunlight in order to eat, creating photosynthesis. This resulted in the by-product O2 (gaseous oxygen), which at the time was the greatest pollutant. Billions of beings died, some hid themselves (such as anaerobic bacteria) and others learned to live with the new gas and took advantage of it to improve their

metabolisms. Although this could be called adaptation, the speaker did not like that word because it sounded like resignation. He preferred the term co-evolution.

In the history of Earth there have been many periods of major transformation, and we are now at such a moment. He added that we have the choice of becoming extinct, hiding ourselves or co-evolving, transforming ourselves for a change that is irreversible.

The transformations required to deal with climate must take place. This entails major challenges for education: the land is becoming not the stage but an actor, saying it is a living being and must be heard; water is doing the same.

When a hydrometeorological disaster takes place, we must think of the rights we have infringed: those of water, for example, and there we find the answer to why the disaster occurred. Water has the right to exist, to flow or to be absorbed by the land. If it is not absorbed it will flow, whether or not this is convenient for humans. The speaker added that courageous obstinacy is conscientious objection, and water and life are extremely obstinate.

Human reasoning is a major achievement; the problem is that we imagine it is the only valid way of thinking. There are other forms of knowledge, such as intuition. Machismo has renounced intuition, which was a stupid thing to do.

Another way of thinking is compassion, which is that feeling of sharing suffering, feeling within ourselves what others may be feeling. It would be an educational exercise to try to feel as if we were water, or a tree, or another being. That would be an educational way of awakening those other forms of knowing and fostering love.

In an emergency situation caused by a natural disaster, when a community in crisis has been hit, the important thing is for people to end up stronger than before; for social subjects, water and others, to

end up stronger than before. To that end, we must recognize the rights of all living beings. It is an error of education to think that the world is made to serve humans. The speaker concluded, 'Either we help each other or we will meet with disaster.'

'Local capacities and resilience: Integrating knowledge of disaster risk reduction and climate change adaptation' Fernando Briones, Politecnico di Milano (Italy), and CIESAS (Mexico)

Fernando Briones cited government projects to help the victims of floods in the state of Chiapas, Mexico, and relocate them to other communities as an example of how decision-makers fail to take account of local knowledge and the capacity for resilience of people affected by natural disasters.

The projects took place between 1998 and 2007. On a number of occasions, people who had been relocated returned to the at-risk areas. There are many reasons for this: The danger zones may be the productive areas, where people have their daily means of support. The new housing complexes have turned out to be somewhat inappropriate, not only because they are so far from the area where the people work on the land, but also because ideas are brought in from other parts of the country and the dwellings prove to be excessively hot for Chiapas communities. It was wrong to ignore the way in which the rural population build their homes, which are cooler, and in which they keep their animals.

Generally, the speaker's point was that although intentions may be good, and the projects designed to solve the problem of housing destroyed by flooding may seem to be a good idea, there had been a failure to recognize the different local strategies and capacities for resilience, which are an essential basis for prevention, response and recovery in the face of risks that may be natural or human-induced. Thus, solutions prove to be less effective and new problems often emerge. In Chiapas, for example, macroeconomic indicators of poverty fell, but people have to live farther away from their land and have to spend more money because they are living in a different type of housing and purchase different types of food (having to buy more products).

The research in which the speaker had taken part, analysing various strategies for providing solutions to natural disasters in Chiapas, identified obstacles in respect of knowledge (and recognition of knowledge), preventing good initiatives from leading to good

solutions. It is important to ensure dialogue across disciplines and break dialogical barriers in order to avoid repeating errors.

Recommendations

The working group that analysed this session was moderated by Martin Testa, from the Ministry of the Environment of Panama, and the rapporteur was Alicia Villamizar, from Simón Bolívar University, Bolivarian Republic of Venezuela.

The working group identified certain positive examples of disaster risk reduction programmes, including the following:

- Chile: Sectoral strategy coordinated by a sectoral committee attached to the Ministry of Education. It has managed to unify efforts by different institutions in respect of the paradigm of integrated human security, with children as the focal point of the strategy.
- Mexico: Use of the book by Edgar González Gaudiano, *La serie de papá y mamá* (Papa and Mama's series), on how families can deal with risk.
- Argentina: Following the major flood in 2003 in the city of Santa Fé, efforts began to produce educational material designed by the people. This is part of the programme of resilient communities.
- Honduras: Manual of four tools. Communities are educated on climate change, adaptation and resilience. Maps have been prepared and work is done in the field with families, children and teachers.

- Colombia: Santo Tomás University has included in the curriculum for its bachelor's degree course in education a subject area on risk management (a joint project involving Chile, Colombia and Ecuador).
- Costa Rica: Rainwater capture, gardening, alternative energy sources and small-scale weather stations.
- UNESCO: Global alliance to strengthen resilience. A school safety programme has been conducted based on three pillars: infrastructure, risk reduction plans and education for risk reduction.

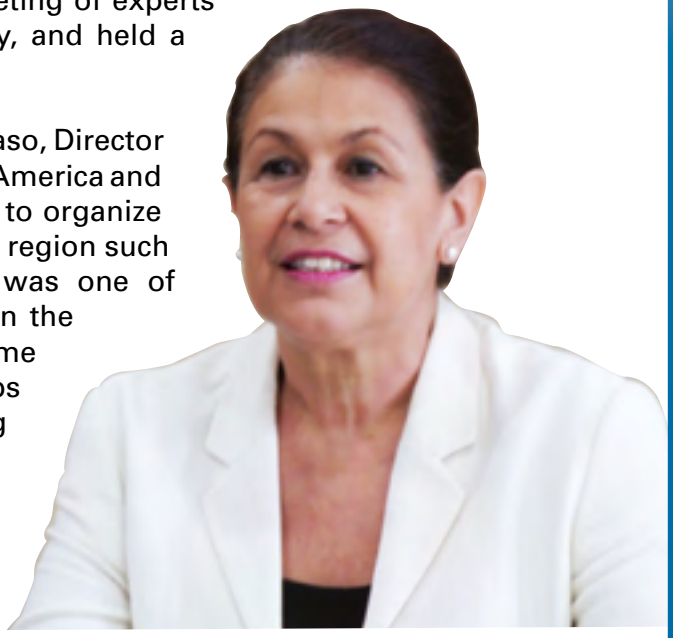
It also identified ways of connecting risk reduction education with the subjects of climate change and sustainable development, for example:

- From the Ministry of Education, develop a strategy to include both subjects.
- Integrate competences in all areas in order to reduce pressure on teachers.
- Ensure that recommendations produced in this regional process are passed on to the secretariat of the Conference of the Parties.
- Synergy between UNESCO and UNEP-Regional Environment Training Network.
- Promote joint work among UNESCO, UNEP and the International Union for Conservation of Nature (IUCN).

SPECIAL SESSION WITH THE MINISTER OF EDUCATION OF COSTA RICA

Special session with the Minister of Education of Costa Rica

The Minister of Education of Costa Rica, Sonia Marta Mora Escalante, took part in this regional meeting of experts in the afternoon of Wednesday, 13 May, and held a special session with the participants.

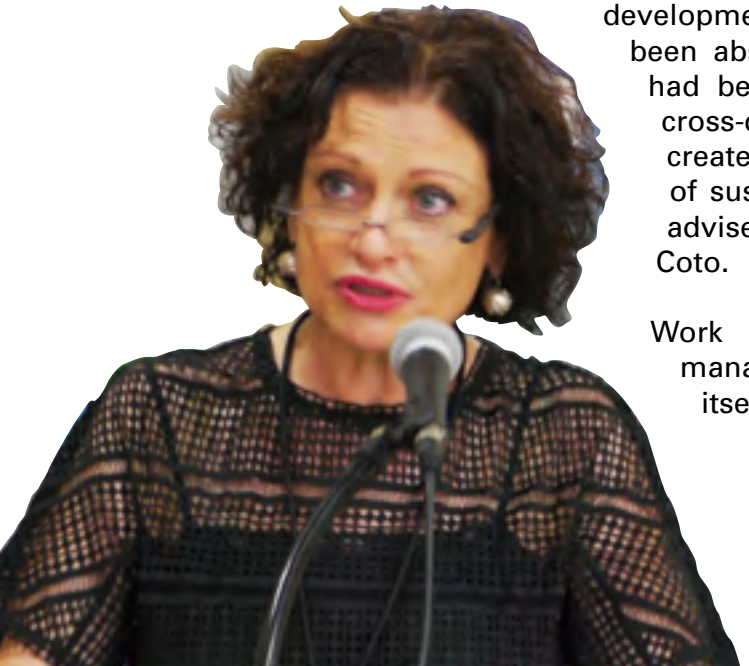


Sonia Marta Mora, Minister of Education, Costa Rica

She was accompanied by Pilar Álvarez-Laso, Director of the UNESCO Cluster Office for Central America and Mexico, who said that it was an honour to organize the current meeting with a partner in the region such as Earth Charter International, which was one of the most strongly committed partners in the GAP-ESD in the region. The programme provided a means of creating partnerships and synergies and also of promoting the new post-2015 agenda with the Sustainable Development Goals (SDGs) being negotiated. The 17 new SDGs will be quite revolutionary and will be the basis of a transformative agenda.

Ms Mora Escalante commented on the interest being aroused by the subject of the meeting. In her professional career at the National University and as rector of that institution, she had had the opportunity to absorb the legacy of the environmental sciences and become more aware of current environmental problems.

A year earlier, when the president asked her to take on the position of Minister of Education, she gave priority to analysing what had been taking place in the area of sustainable development and the environment, which had not been absent from the ministry's activities but had been very modest and not playing the cross-cutting role it should. Work has begun to create a broad programme around the issues of sustainability, together with a number of advisers such as Henry Arias and Juanita Coto.



Pilar Alvarez-Laso, UNESCO San Jose

Work on institutional environmental management is in hand within the ministry itself, but sustainability criteria will also

be required in any schools being built. There are proposals to create a programme on ESD in current educational processes and work is under way to review science programmes to incorporate the subject of sustainability.

They are seeking support from other ministries, such as the Ministry of the Environment, with which they hope to formulate a policy for the area of education and sustainability.

She emphasized the importance of creating partnerships with individuals and institutions in other countries who have experience from which they can learn in order not to 'reinvent the wheel'. UNESCO and Earth Charter International have materials that they can use but they wish to know more, particularly regarding online programmes and resources.

She added that the subject of climate change and environmental responsibility was connected to that of citizenship, which was in line with the motto of the current Ministry: 'Educating for new citizenship'. Lastly, she emphasized the importance of combining efforts through international cooperation and working with civil-society bodies as well as other government agencies in order to make progress in this area.

GUIDED VISITS
TO LOCAL PROJECTS

Guided visits to local projects

On the morning of the final day of the meeting, Thursday, 14 May, participants had the opportunity to visit a number of projects that illustrate the subjects discussed during the plenary sessions.

A group of participants was divided into subgroups of 20-25 people, each of which visited the following projects over a four-hour period:

- Demonstration farm of the Compañía Nacional de Fuerza y Luz (National Force and Light Company) (CNFL): This facility in Coronado, San José, works as a demonstration farm to teach about various strategies for practical sustainability in both urban and rural areas (waste management, clean energy, reforestation).

- Carbon footprint measurement at a rural school: The Salitrillos school in Grifo Alto, Puriscal, has been awarded five stars by the Blue Flag Programme for its application of a carbon footprint measurement tool.

- Coope Puriscal project with Fundecooperación: This is a project to recover a damaged water catchment area at Puriscal through the involvement of small-scale agroforestry producers in the implementation of sustainable agricultural, forestry and pastoral systems.

- Carbon neutrality certification of the Clínica Bíblica and CNFL/University for Peace reforestation project: The Clínica Bíblica hospital has received the carbon neutrality certificate. During the visit, it was explained how the hospital had taken part in the programme and obtained the certificate, as well as the internal learning process. Subsequently, there was a visit to the CNFL/University for Peace reforestation and renewable energy project on the university campus.

After returning to the meeting venue for lunch, participants continued their work in subregional groups.

SUBREGIONAL STRATEGIES TO PROMOTE CLIMATE CHANGE EDUCATION IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Subregional strategies to promote climate change education in the context of sustainable development

As one of the expected outcomes of the meeting, efforts were made to produce recommendations regarding the creation of subregional action plans to prepare strategies for CCE. Participants worked in subregional groups and drafted the following recommendations:

Central America, Mexico and the Dominican Republic

Although it had been proposed that two groups would be created, one for Costa Rica and the other for the rest of the subregion including Mexico, the participants decided to work together; as a result, this group had several moderators and rapporteurs: Daniel Abreu, National Council for Climate Change and Clean Development Mechanism/ UNITAR (Dominican Republic); Erick Ruedas, Ministry of Education (Guatemala); Karen Araya, Fundecooperación (Costa Rica); and Eduard Muller, University of International Cooperation (Costa Rica).

The full results of this group's work can be found in Annex III. To summarize, the following actions were agreed:

- Promote continuous learning in respect of formal and non-formal education.
- Organize experiences and conduct inventory or mapping of actors working on CCE and ESD. The emphasis in seeking experiences should be on what content has been included and what teaching method was used. In this regard, the Autonomous University of San Luis Potosí has offered its online platform to begin mapping of experiences, where each interested person will be given room to upload information on his or her experiences in this area. UNESCO is requested to support the creation of a regional platform to share experiences.
- Identify actions by education ministries in relation to CCE.
- Form a support group for focal points under Article 6 of UNFCCC, to bring about progress in this area.

Karen Araya, FUNDECOOPERACION, Costa Rica

- Define the approach to be taken by CCE and ESD and what will be the priority sectors and areas to be reached.
- Establish clearer integration between education and environment ministries for the purpose of CCE and ESD and involve research centres, local government and professional bodies.

The Caribbean

The moderators and rapporteurs of this group were Margo Blackwell, Department of Education, College of the Bahamas (Bahamas), and Mark Thomas, the Cropper Foundation (Trinidad and Tobago).

Margo Blackwell, College of the Bahamas, Bahamas

The results of this group's work can be found in Annex IV. The group proposed recommendations relating to each of the subjects of the different sessions of this meeting. On a subregional plan of action, they mentioned short-, medium- and long-term actions including the following:

- Mapping of national or subregional plans of action relating to CCE and ESD that already exist, and identifying gaps.
- Generate teacher training processes, making use of tools such as those of the Caribbean Community Climate Change Centre and CDEMA.
- Identify or create projects using the 'whole institution' approach, at the university level, in relation to climate change and sustainable development.
- Organize a regional workshop on CCE and ESD, inviting a variety of actors.
- Collaborate with UNESCO to create a Caribbean platform for educators.
- Create a series of indicators to measure the progress of projects in this area.
- Prepare a collection of Caribbean case studies on climate change and risk management.

- Create clubs on all the islands and ensure communication among them.

South America

The moderators and rapporteurs of this group were Marianela Curi, Latin American Future Foundation (Ecuador), and María del Valle Peralta, Ministry of the Environment and Sustainable Development/ Focal Point for Article 6 of UNFCCC (Argentina).

The full recommendations put forward can be found in Annex V. The following are a few of the proposals mentioned in the plenary session:

- The approach to CCE and ESD processes must include the levels of formal, non-formal and informal education, recognizing their specificities and incorporating local knowledge.
- Incorporate traditional knowledge in educational activities.
- Provide incentives for teacher training in CCE and ESD.
- Link the various Conventions of United Nations agencies to create synergies.
- Use existing networks, or create new ones, for CCE and ESD.
- Use the platform of the UNFCCC to share experiences.
- Promote the inclusion of the subject of climate change in curriculum reforms.
- Seek to implement an experimental approach to educational activities.
- Strengthen South-South cooperation and partnerships.

María del Valle Peralta, Ministry of the Environment and Sustainable Development, Argentina

THE WAY FORWARD:

Final recommendations

The way forward:
Final recommendations

Julia Heiss, UNESCO Headquarters, Paris

This event brought together the region's key actors in this subject area and enabled the sharing of experience, good practices and knowledge. At the end of the meeting, participants expressed satisfaction with the experience and showed motivation and commitment. The event achieved the intended objectives, especially by making possible the creation of new partnerships and the strengthening of existing collaboration among countries and institutions. It also gave participants increased awareness of the importance of CCE and how it can relate to ESD.

A series of important recommendations were produced to facilitate follow-up to this meeting and strengthen CCE in the framework of ESD in the region. Through the identification of elements that will help in the design of subregional plans of action, it led to a significant process of dialogue and the construction of a shared vision of the priority areas to be tackled and the fostering of cooperation in the region.

FINAL RECOMMENDATIONS

These recommendations are the outcome of presentations and group discussions among more than 100 participants from 25 countries of Latin America and the Caribbean. They are addressed to UNESCO and its Member States as well as all stakeholders, including education planners, researchers and professionals.

On the nature of education processes:

In policies, strategies and action plans on CCE and ESD it is important to address the issue of what kind of education is needed.

- Education with a **clear and common vision** and bold ambitions that inspire dreams and passions among people to change their lifestyles, such as participating collaboratively in building better livelihoods and safeguarding life on the planet. *Dreams are important – follow them.*

- Education that uses the **creativity, intuition, spirituality and empathy** of learners to understand the multiple dimensions of climate change and sustainability, including the ethical dimension. Making use of the transformative power of education to turn knowledge and awareness into action.

- Education that supports understanding of the complex sphere of causes and effects in areas such as health, poverty, immigration, conflicts and inequality. We must therefore break down the barriers between the different disciplines and introduce CCE and sustainability through mainstreaming. *Each discipline must be aware of its unique contribution to CCE and ESD.*

From facts to action:

On educational processes:

- *Obtain the correct information:* promote climate **literacy** within the educational community to avoid false or mistaken ideas (such as ozone versus global warming, weather versus climate); this entails **generating knowledge** relevant to each situation, linking intercultural knowledge and promoting and ensuring access to appropriate, sufficient and timely information for decision-making.

- *Communicate the facts:* help scientists to ensure better communication on climate change and translate the scientific discourse into a common language adapted to different audiences; use celebrities or famous people to lobby for CCE and awareness; organize mass communication campaigns through the use of various media and networks, with clear, not alarmist, messages.

- *Take informed action:* based on facts and knowledge, promoting **sustainable lifestyles,** solutions and actions aimed at learning about climate change. *Balance between fear and hope.*

- **Educate to mitigate and adapt to climate change:** establish links among lifestyles, consumption patterns and climate change, based on existing programmes such as youthXchange (YXC), a global youth movement.

- **Resilience education:** CCE should support students' and communities' capacity to adapt. *Working on local community resilience must be based on flexibility and independence,* so that people can adapt easily to new situations.

- **Education to reduce vulnerability in disaster situations:** use formal and non-formal education as a means to raise awareness in the educational community on the causes of risks and the risks that affect their communities (including climate change).

- **Strengthen a holistic approach** to disaster risk reduction in the education sector through appropriate policies, prevention plans for schools, capacity building, participation of the community and children, and integrating disaster risk reduction into the curriculum.

- **Promoting a holistic approach** in education institutions at the different levels, including schools, universities and other educational institutions by including the principles of CCE on campus and in the administration, in the teaching and learning processes, in community participation and in capacity building for all staff. The success of the institution's holistic approach mainly depends on highly motivated and committed leadership.

On advocacy:

- Building on the momentum of change in general policies on ESD and CCE, the SDGs, the World Education Forum, COP 21,

and GAP-ESD, to include CCE in the development of educational agendas and the policies of governments and regional and international organizations; strengthening an approach to ESD that addresses human rights, gender equality and respect for cultural diversity.

- Encourage **education and environmental ministries to work together,** in coordination with climate change response systems, units and other related bodies, in order to facilitate continuous educational processes that reach out to all levels of society.

- It is important to create links between the **UNEP, UNESCO, ECLAC, the Secretariat of the UNFCCC** and others, so that existing training resources are used rather than inventing new ones. These synergies also promote exchanges of experiences and the development of shared proposals.

- Convey the recommendations to the Secretariat of the UNFCCC in order to urge countries to reinforce action that they have committed to through that convention, particularly Article 6.

- Incorporate CCE and ESD in forums for intergovernmental debate on education, such as the High Level Policy Forum on Information and Communication Technologies and Education for All (EFA). CCE and ESD should be adopted as a topic for raising visibility on strategies to incorporate ICTs into educational processes for schools and education for all.

On collaboration and networks:

- Build **support networks** to step up action: interministerial collaboration on climate change; use intergovernmental platforms such as UNASUR, the Southern Common Market (MERCOSUR), SICA, ECLAC, the Community of Latin American and Caribbean States-European Union (CELAC-EU) and the Caribbean Community (CARICOM) to strengthen policies on CCE at international, regional and subregional levels.

- Create forums for dialogue on CCE among community leaders, scientists, educators, NGOs, civil-society organizations, religious institutions, the media, the private sector and government.

- Promote and implement a dialogue of knowledge, working jointly with academics, educational institutions and communities, drawing on the local environmental knowledge and management of farmers, indigenous peoples, afro-descendants and other groups, to propose climate change mitigation and adaptation alternatives in the ESD projects being carried out in the different countries of the region.

- Systematize **good practices** on CCE in the region, giving public recognition and facilitating exchanges between countries and institutions, using existing networks and going through organizations with a regional mandate, such as the Caribbean Community Climate Change Centre (5Cs) the Latin American Climate Alliance and others.

On capacity building:

- Recognize the **leadership capacity of young people** and use the enthusiasm and commitment of youth organizations to participate actively in CCE in formal, non-formal and informal contexts, through peer-to-peer education – young people can teach young people – social networks and so forth; young people are not the future but the present; provide young people with opportunities and platforms so that they can take responsibility for the education of their own generation.

- **Think globally, act locally:** CCE and ESD must help students understand the global causes and impact of climate change and the unsustainability of production systems to facilitate the local impact and in projects concerning personal and collective life.

- Appreciate the value of **local and indigenous wisdom** to increase knowledge about climate change.

- Develop training programmes for teachers and students on CCE and disaster risk reduction. Provide capacity-building opportunities for staff in the education sector, including administrative decision-makers, local governments, non-formal educators, community workers, the private sector, the public sector and the media.

- Provide **lifelong learning opportunities** through climate change training programmes aimed at students outside the formal

education system and other sectors, such as local governments, the private sector, the public sector and the media.

- Use **innovative, participatory, student-centred teaching methods,** as promoted in ESD, to develop the appropriate skills to address the challenges of climate change, such as critical thinking, problem solving, dealing with uncertainties and vulnerabilities, forward thinking and creativity (such as education through art and consultation-based education).

- ICTs are among the innovations that are promoted and supported the most by the region's governments, and the medium most used by young people to communicate, pass on information and educate on climate change. Climate change dialogue among citizens, broad socialization and immediate propagation through social networks should be facilitated.

On monitoring and evaluation:

- Monitoring and evaluation processes should be improved and conducted through long-term indicators to enable analysis and documentation of experiences, to learn lessons and ensure the monitoring of commitments undertaken for CCE.

- Monitoring and evaluation require the creation of specific instruments at the management level (at the government or corporate level, for example), in the field of intervention (school, community and so forth) and at the location (urban, rural); mechanisms must be provided for their generation in each context and in a coordinated manner. Matrices similar to those created for risk assessment are a good example.

- Develop benchmarks and monitoring tools to assess the impact of lifestyles, including low-carbon lifestyles, as a contribution for future generations.

On funding:

- **Secure sufficient funding** for comprehensive and effective planning, implementation and monitoring of CCE.

- Develop specific funding proposals for CCE and disaster risk reduction.

- Request the establishment of a permanent UNESCO fund to prioritize this type of education in Latin America and the Caribbean.

ANNEXES

ANNEX I: Agenda

Day 1 – Tuesday, 12 May 2015	
08:30–9:00	**Participant registration**
9:00–10:00	**Welcome and opening remarks** • Mirian Vilela, Executive Director, Earth Charter International • Pilar Álvarez-Laso, Director of the UNESCO Cluster Office for Central America and Mexico
10:00–10:30	**Introduction and objectives** • **'Promoting climate change education through the Global Action Programme for Education for Sustainable Development'** Julia Heiss, UNESCO Paris • **'The case of Brazil in climate change education'** Mariana Alcalay, UNESCO Brasilia • Presentation of the agenda and objectives of the meeting
10:30 – 11:00	**Refreshments**
11:00–12:30	**Keynote speeches.** • **'Climate change education or education for regenerative development?'** Eduard Muller, University of International Cooperation (Costa Rica) • **'Climate change education and communication:A social representation approach.'** Edgar González-Gaudiano, University of Veracruz (Mexico) Question-and-answer session **Moderator:** Alicia Villamizar, IPCC, member and professor at Simon Bolívar University (Bolivarian Republic of Venezuela)
12.30–14:00	**Lunch**
14:00–15:15	**Session I: Policies, strategies and partnerships on CCE in Latin America and the Caribbean** • **'Fostering climate change education through the implementation of the Doha work programme on Article 6 of the convention'** Adriana Valenzuela, (UNFCCC Germany) • **'Establishing a Regional Learning Programme on Climate Change in Central America (SICA)'** Omar Ramírez, National Council for Climate Change and the Clean Development Mechanism (Dominican Republic) • **'SICA efforts on climate change education'** Claudia Cárdenas Becerra, SICA Central American Educational and Cultural Coordination • ***'National strategy on education and climate change in Bolivia'*** *Cynthia Silva Maturana, Sub-Ministry for the Environment/PRODEMA, UNFCCC Focal Point for Article 6 (Plurinational State of Bolivia)* *(NB: Due to circumstances beyond the Organization's control, Ms Silva Maturana was unable to travel to the meeting and therefore this presentation was not made. Ms Maturana nonetheless sent reference documents relating to the theme of her presentation).* **Moderator:** Michael Browne, Education, Science and Technology Minister (Antigua and Barbuda)
15:15–15:45	**Refreshments**

15:45–16:45	**Session II: Capacity building and awareness-raising on climate change** • **'Carbon neutrality declaration under the country programme and the national climate change strategy'** Kathia Aguilar, Environment Ministry (Costa Rica) • **'Climate change and education for sustainable development: Challenges and opportunities'** Marianela Curi, Latin American Future Foundation (Ecuador) • **'Experience in developing and implementing a national strategy on climate change education in Dominican Republic'** Andrea Griselda Rincón, National Teacher Training Institute (INAFOCAM) (Dominican Republic) • ***'Strengthening community resilience: An integrated approach to building capacity and environmental awareness along the coasts of Peru'*** *Kerstin Forsberg, Planeta Oceano (Peru)* *(NB: Due to circumstances beyond the Organization's control, Ms Forsberg was unable to arrive in time for the meeting and therefore this presentation was not made. Ms Forsberg nonetheless sent reference documents relating to the theme of her presentation).* **Moderator:** Ofelia Flores, National Department on Climate Change (DNCC) for the Secretariat of National Resources and the Environment (SERNA) (Honduras)	
16:45–17:45	**Group work – Sessions I and II** **Room 1 – Session I –** *Moderator and rapporteur:* Lorna Oliver Down, School of Education, University of the West Indies (Jamaica), and Rosa María Chacon, Simon Bolivar University (Bolivarian Republic of Venezuela) – (session with translation ENG-SPA) **Room 2 – Session I –** *Moderator and rapporteur:* Wendy Calderón, Technical Secretary, Mario Molina Centre (Mexico) and Corinna Grace, Supporting Ecological Resilience and Environmental Sustainability (SERES) (Guatemala) **Room 3 – Session II –** *Moderator and rapporteur:* Diego Diaz Martinez, Vitalis (Bolivarian Republic of Venezuela), and Aura Barba, Association of Amazonian Universities (UNAMAZ) (Plurinational State of Bolivia) **Room 4 – Session II –** *Moderator and rapporteur:* Carlos Rojas, Ministry of the Environment (Peru) and Olga Maria Bermudez, National University of Colombia, Institute of Environmental Studies (IDEA) (Colombia)	
19:00	**Welcome dinner**	**Venue:** Quality Hotel Real

Day 2 – Wednesday, 13 May 2015	
09:00–10:30	**Session III: The role of different groups in promoting climate change education: forging collaboration** • **'Climate change education for youth'** Santiago Ismael Vega Ruiz, Climate and Cryosphere Programme (CliC) (Costa Rica) • **'Living well and indigenous peoples vis-à-vis climate change'** Lorena Terrazas, Peace, Integration and Development Network (Plurinational State of Bolivia) • **'The role of consumers' associations in climate change education'** Luis Flores, Consumers International (Chile) • **'Building community resilience for local climate change education'** Gabriela Batista, Environmental Secretariat, Government of Brasilia (Brazil) UNESCO Video: *Learning to Address Climate Change* **Moderator:** Javier Urbina Soria, National Autonomous University of Mexico (UNAM) (Mexico)
10:30–11:00	**Refreshments**
11:00 – 12:00	**Session IV: Pan-institutional strategies on climate change education** • **'Complementary strategies for effective education on climate change and sustainable development'** Lorna Down, The University of the West Indies (Jamaica) • **'Measurement and reduction of the carbon footprint of educational centres: A step towards mitigating climate change'** Alexa Morales, FUNDECOR (Costa Rica) • **'ARIUSA: Alliance of Ibero-American Networks of Universities for Sustainability and the Environment'** Orlando Sáenz, University of Applied and Environmental Sciences (UDCA) (Colombia) **Moderator:** Rene Donoso Sereño, Ministry of the Environment (Chile)
12:00–13:00	**Session V: Building community resilience through disaster risk reduction education** • **'Caribbean experience in building knowledge and awareness of disaster reduction'** Gale Drakes, Caribbean Disaster Emergency Management Agency (CDEMA) (Barbados) • **'Ethical and political commitments following resilience and adaptation concepts'** Gustavo Wilches-Chaux (Colombia) • **'Local capacities and resilience: Integration of knowledge on disaster risk reduction and adaptation to climate change'** Fernando Briones, Polytechnic University of Milan (Politecnico di Milano) (Italy) and Centre for Research and Advanced Studies in Social Anthropology (CIESAS) (Mexico) Video: *Education for Disaster Preparedness* (optional) **Moderator:** Sandra Elizabeth Alas Guidos, Ministry of Education (El Salvador)
13:00–14:00	**Lunch**

14:00–15:00	**Group work sessions III, IV and V** **Room 1 – Session III –** *Moderator and rapporteur:* Luis Flores, Consumers International (Chile), and Marleny Rosales, Organization for Nature Conservation and Community Development (ORCONDECO) (Guatemala) **Room 2 – Session IV –** *Moderator and rapporteur:* Waverli Matarazzo-Neuberger, Methodist University (Brazil), and Petal Punalall Jetoo, Ministry of Education (Guyana) **Room 3 – Session V –** *Moderator and rapporteur:* Martin Testa, Ministry of the Environment (Panama)
15:00–15:20	**Refreshments**
15:20–17:30	**Group work – Subregional strategies to promote CCE within a context of sustainable development** **Room 1 – Central America and Mexico –** *Moderator and rapporteur:* Daniel Abreu, Consejo Nacional para el Cambio Climático RD/UNITAR (República Dominicana) y Erick Ruedas, Ministerio de Educación (Guatemala) **Room 2 – Caribbean –** *Moderator and rapporteur:* Margo Blackwell, School of Education; College of The Bahamas (The Bahamas), and Mark Thomas, The Cropper Foundation (Trinidad and Tobago) **Room 3 – Costa Rica –** *Moderator and rapporteur:* Karen Araya, Fundecooperación (Costa Rica) **Room 4 – South America –** *Moderator and rapporteur:* Marianela Curi, Latin America Future Foundation (Ecuador) and Maria del Valle Peralta, Secretariat of the Environment and Sustainable Development/UNFCCC Focal Point for Article 6 (Argentina)
17:30–18:00	**Special session** **Pilar Álvarez-Laso, Director of the UNESCO Cluster Office to Central America and Mexico** **Sonia Marta Mora, Minister of Education of Costa Rica**
19:00	**Dinner (Open)**

Day 3 – Thursday, 14 May 2015	
07:30–12:30	**Tours**
12:30–14:00	**Lunch**
14:00–15:30	**Group work presentations** • Subregional plans of action to promote CCE within the context of sustainable development – presented by the working groups • Recommendations on CCE and ESD in Latin America – presented by UNESCO **General debate**
15:30–16:00	**Refreshments**
16:00–17:00	**Closing** **The way forward** by UNESCO and Earth Charter International

ANNEX II: List of Participants

NAME	ORGANIZATION	COUNTRY
Michael Browne	Ministry of Education, Science and Technology	Antigua and Barbuda
Daniella Zallocco	Comisión Nacional Argentina de Cooperación con la UNESCO	Argentina
Graciela Satóstegui	Secretaría de Ambiente y Desarrollo Sustentable Argentina	Argentina
Pablo Sessano	Programa Educación Ambiental (PROGEA) Ministerio Educación	Argentina
Maria del Valle Peralta	Secretaría de Ambiente y Desarrollo Sustentable/UNFCCC Article 6 Focal Points	Argentina
Margo Blackwell	Departamento de Educación, Colegio Universitario de las Bahamas	Bahamas
Judi Clarke	CARIBSAVE	Barbados
Gayle Drakes	Caribbean Disaster and Emergency Management Agency (CDEMA)	Barbados
Tyrone Hall	Caribbean Community Climate Change Centre (CCCCC)	Belize
Aura Teresa Barba	Centro de Estudios Amazónicos – UNAMAZ-UAGRM	Bolivia
Lorena Terrazas	Red Paz, Integración y Desarrollo	Bolivia
Cynthia Silva Maturana	PRODEMA/UNFCCC Article 6 Focal Point	Bolivia
Mariana Alcalay	UNESCO Brasilia	Brazil
Marilia Andrade Torales	Universidad Federal de Paraná (UFPR)	Brazil
Gabriela Barbosa Batista	Secretaría de Medio Ambiente del Gobierno del Distrito Federal	Brazil
Waverli Matarazzo-Neuberger	Universidad Metodista de Sao Paulo	Brazil
Antonio Fernando Guerra	Universidad del Valle de Itajaí (UNIVALI)	Brazil
Daniela Andrea Zamorano Arias	Instituto Ecología Política	Chile
Rodrigo A. Cea Córdova	Universidad de Concepción	Chile
Luis Flores	Consumers International -ROLAC	Chile

Rene Donoso Sereño	Ministerio del Medio Ambiente	Chile
Octavio Segundo Gajardo Gabelo	Ministerio de Educación	Chile
Astrid Hollander	UNESCO Santiago	Chile
Olga María Bermúdez	Universidad Nacional IDEA	Colombia
Orlando Saez	Universidad de Ciencias Aplicada y Ambientales (UDCA)	Colombia
Marta Sánchez Peña	Universidad de Santo Tomás	Colombia
Gustavo Wilches-Chaux	Socio Fundador RED	Colombia
Miguel Angel Julio	Secretaría Distrital de Ambiente de Bogotá	Colombia
Adriana Valenzuela Jiménez	United Nations Framework Convention on Climate Change (UNFCCC)	Colombia/Germany
Abelardo Brenes Castro	Ministerio de Educación Pública (MEP)	Costa Rica
Adrian Martinez	Climate4Change	Costa Rica
Alexa Morales	FUNDECOR	Costa Rica
Alicia Jimenez	Centro Carta de la Tierra de Educación para el Desarrollo Sostenible	Costa Rica
Carla Bermúdez Astorga	Compañía Nacional de Fuerza y Luz (CNFL)	Costa Rica
Carlos Rosas	Compañía Nacional de Fuerza y Luz (CNFL)	Costa Rica
Carolina Alvarez Vergnani	CO2.CR	Costa Rica
Cinthya Morales Córdoba	Oficina Multipaís de la UNESCO para Centroamérica y México	Costa Rica
Claudia Cárdenas	CECC/SICA Reducción de riesgos y desastres y adaptación al cambio climático	Costa Rica
Diana Borrás	Red Escuelas Asociadas a la UNESCO	Costa Rica
Eduard Muller	Universidad Cooperación Internacional (UCI)	Costa Rica
Fernando Ulloa	Ministerio de Educación Pública (MEP)	Costa Rica
Fiorella Donato	Universidad Estatal a Distancia (UNED)	Costa Rica
Gladys Jimenez-Valverde	Instituto Meteorológico Nacional (IMN)/UNFCCC Punto Focal Artículo 6	Costa Rica

Henry Arias	Ministerio de Educación Pública (MEP)	Costa Rica
Irene Suarez	Asociación Independiente de América Latina y el Caribe	Costa Rica
Ivan Delgado	Dirección de Cambio Climático (MINAET)	Costa Rica
Ivannia Vargas Moreno	FUNDECOR	Costa Rica
Karen Araya	FUNDECOOPERACION	Costa Rica
Kathia Aguilar	Ministerio de Medio Ambiente y Energia (MINAET)	Costa Rica
Kifah Sasa	Programa de las Naciones Unidas para el Desarrollo (PNUD)	Costa Rica
Lenín Corrales	CATIE	Costa Rica
Magda Campos Barrantes	Instituto Meteorológico Nacional Ministerio de Ambiente y Energía (MINAET)	Costa Rica
Manrique Arguedas	Red Costarricense de Instituciones Educativas Sostenibles (REDIES)	Costa Rica
Marcello Hernández	One Biosphere	Costa Rica
María Elisa Febres	Earth Charter International	Costa Rica
María Jose Vásquez Vargas	Costa Rica Limpia	Costa Rica
Mirian Vilela	Centro Carta de la Tierra de Educación para el Desarrollo Sostenible	Costa Rica
Morgan Larcheveque	Oficina Multipaís de la UNESCO para Centroamérica y México	Costa Rica
Pilar Alvarez-Laso	Oficina Multipaís de la UNESCO para Centroamérica y México	Costa Rica
Ricardo Martínez	Oficina Multipaís de la UNESCO para Centroamérica y México	Costa Rica
José Rafael Alvarado	Comisión Costarricense de Cooperación con la UNESCO	Costa Rica
Santiago Ismael Vega Ruiz	Movimiento de jóvenes latinoamericanos y caribeños frente al Cambio Climático	Costa Rica
Sergio Musmanni	Agencia de Cooperación Alemana (GIZ)	Costa Rica
Sylvia León Koberg		Costa Rica
Taijiro Kimura	Embajada de Japón en Costa Rica	Costa Rica
Yeimy Cedeño	Sistema Nacional de Áreas de Conservación (SINAC)	Costa Rica

Yoriko Yasukawa	Programa de las Naciones Unidas para el Desarrollo (PNUD)	Costa Rica
Andrea Griselda Rincón	Instituto Nacional de Formación y Capacitación del Magisterio. (INAFOCAM)	Dominican Republic
Daniel Abreu	Consejo Nacional para el Cambio Climático RD/UNITAR	Dominican Republic
Omar Ramírez	UNFCCC Focal Point/Consejo Nacional para el Cambio Climático y Mecanismo de Desarrollo Limpio	Dominican Republic
Marco Encalada	Corporación OIKOS	Ecuador
Mauricio Castillo	ECOPAR	Ecuador
Marianela Curi	Fundación Futuro Latinoamericano	Ecuador
Sandra Elizabeth Alas Guidos	Ministerio de Educación	El Salvador
Julia Heiss	UNESCO París	France
Marleny Rosales Meda	Organización para la Conservación de la Naturaleza y Desarrollo Comunitario – ORCONDECO	Guatemala
Corrina Grace	SERES	Guatemala
Julia del Carmen Flores España	Ministerio de Ambiente y Recursos Naturales	Guatemala
Erick F. Ruedas Reynosa	Ministerio de Educación	Guatemala
Petal Punalall Jetoo	Ministry of Education	Guyana
Renys A. Torres Lopez	Secretaria de Estado en los Despachos de Educación	Honduras
Ofelia Flores	Secretaria de Energía Recursos Naturales Ambiente y Minas/ MiAmbiente	Honduras
Mauro Daniel Salgado Luna	Consejo Nacional De Desarrollo Sostenible(CONADES)	Honduras
Lorna Oliver Down	School of Education The University of the West Indies, Mona	Jamaica
Edgar Gonzalez-Gaudiano	Universidad Veracruzana	Mexico
Wendy García Calderón	Centro Mario Molina para Estudios Estratégicos sobre Energía y Medio Ambiente	Mexico
Fernando Briones Gamboa	Centro de Investigaciones y Estudios Superiores en Antropología Social (CIESAS)	Mexico

Javier Urbina Soria	Universidad Nacional Autónoma de México	Mexico
Mariana Buendía	Universidad Autónoma de San Luís Potosí	Mexico
María Teresa Vazquez	Secretaría de Educación Pública del DF	Mexico
Teresita Maldonado Salazar	Centro de Educación y Capacitación para el Desarrollo Sustentable - SEMARNAT	Mexico
William Schwartz	Instituto Nacional de Forestas (INAFOR)	Nicaragua
Martín Testa	Departamento de Educación Ambiental, ANAM (Ministerio de Ambiente)	Panama
Adilia E. Olmedo de Pérez	Ministerio de Educación	Panama
Sandra Aranda	Secretaría del Ambiente de la República de Paraguay	Paraguay
Diana DeGiácomi	Ministerio de Educación y Cultura	Paraguay
Silvia Moreno Reategui	Consultora del Programa GLOBE - MINAM	Peru
María Trinidad Rodríguez	ASP Net/Universidad Nacional de Educación Enrique Guzmán y Valle	Peru
Carlos Alberto Rojas Marcos	Ministerio de Ambiente	Peru
Kerstin Forsberg	Planeta Océano	Peru
Rosa Meza Moyano	Asociación Cultural Pirámide	Peru
Malini M. Maharaj	The University of the West Indies	Trinidad and Tobago
Mark Thomas	The Cropper Foundation	Trinidad and Tobago
Omar Mohammed	UNESCO Associated Schools Project Network	Trinidad andTobago
Hernan Sorhuet	Diario El País Uruguay	Uruguay
Lucía Eluén	Ministerio de Educación y Cultura /Comisión Nacional de UNESCO / Red PEA	Uruguay
María del Luján Jara	MVOTMA, Dirección Nacional de Medio Ambiente	Uruguay
Rosa María Chacón	Universidad Simon Bolivar	Venezuela
Alicia Villamizar	Universidad Simón Bolívar/ Miembro del IPCC	Venezuela
Diego Díaz Martín	VITALIS / Universidad Anáhuac	Venezuela

ANNEX III: Central America, Mexico and Dominican Republic

Subregional group work

Recommendations from Central America, Mexico and Dominican Republic

1. **Recommendations to help the subregion's education systems to prepare their teachers, children and citizens to face the impacts of climate change**

Inputs	Participants
Reappraisal and revival of local knowledge	Costa Rica, Mexico
Need for emphasis on informal education and civil society (based on the UNESCO GAP-ESD to improve methodology)	Guatemala
Having an ongoing training programme for existing staff/ promoting education innovation and research within schools	Costa Rica
Developing interactive methodologies and an up-to-date curriculum	Panama
Systematizing the region's successful projects and adapting them to each area; creating forums for sharing experiences and tools at the regional level; creating a repository of resources; taking account of experience of formulating existing plans and strategies in the region	Costa Rica, Mexico
Promoting the creation of critical education communities, strengthening community participation and interactions between the school and community, teacher training, research-action processes and an open and flexible curriculum including the environmental dimension	Mexico
At the structural level: generating policies on ESD in terms of curriculum development, teacher training, methodologies, production of materials and open classrooms. Within non-formal systems: involving the school in the community and co-curricular programmes such as festivals	Costa Rica
Integrating collective values and reviving local knowledge	Guatemala
Strengthening informal education; essential role of family and media and informal processes involving Ministry of Agriculture and NGOs	Panama
Integrating teachers in the formulation of formal education programmes	Mexico
Holistic vision and the implementation of processes based on practice and experiential elements	Costa Rica

Including training on ethics and values	Nicaragua
Taking account of local characteristics (coastal or farming areas)	Costa Rica
Improving communication between regional research centres, processing of postgraduate results, linking research carried out by specialized regional centres (with the results then used for teacher training)	Costa Rica
Incorporating other sectors in the planning of non-formal education actions (professional associations, communicators and local government)	Costa Rica
Devising non-formal education on the basis of formal education: supporting teachers in the classroom to generate proposals for the community	Dominican Republic
Training farmers. In terms of formal education, teacher training should be strengthened and teachers provided with the relevant teaching materials	Honduras
Producing an inventory of education provision and teacher training needs/use of ICTs to reduce the digital divide	Costa Rica
Promoting fieldwork in non-formal education and strengthening the link between technicians and teachers	Costa Rica
Proposing a forum for ministerial technical staff in Central America and Mexico to generate proposals and approaches for the region – teachers and advisers on specific subjects	Costa Rica
Systematizing experiences and escalating them to decision-making bodies	Costa Rica
Including these topics on the curriculum along with innovative methodologies. Taking account of success stories in terms of local implementation of CCE	Costa Rica
Having the political will to leave behind traditional education approaches and transform education. Strengthening teacher training and training of public officials. Improving community decision-making and leadership.	Guatemala
Encouraging those implementing local initiatives. Harnessing the energies of teachers motivated to replicate experiences. Taking account of key social institutions (such as churches) in terms of training; it is vital to establish indicators; analysing success stories and identifying strengths and weaknesses; promoting reading among students	Many
Changing the discourse and transcending the concept of climate change education. We should aim to change traditional education paradigms. It is vital to adopt an eco-systemic approach in education (to achieve integrated education)	Costa Rica

2. Key elements of a subregional action plan on climate change education

Background: Under the Central American Integration System (SICA), Central America devised its Regional Strategy on Climate Change[1], which was then validated by the region's heads of state. There are three priorities for climate change education:

- intervening in the education system (mainly secondary and university education), and prioritizing teacher training and incorporating climate change into curricula;
- working with social communicators and journalists to raise public awareness; and
- setting up forums for Central American countries to share experiences and knowledge.

Key elements

Reviewing whether the results of this event can be used to formulate a regional action plan and posing the questions: What process could work for subregional actions? What should this process contain that could be developed in the immediate future?

- The action plan should be based on experiences, not beliefs – hence the importance of documenting, compiling and assessing existing experiences in the region. Currently there is no solid foundation for proposing a regional action plan. The proposal should have a scientific basis (Mexico).
- Taking account of levels when formulating an overall plan. Considering the type of education and development model we want. Replacing the plan with a road map. Producing outputs that are applicable, rather than carrying out the same actions and expecting different results. Letting the plan be guided by a given approach and epistemology, with results in phases (Costa Rica).

1 http://bvssan.incap.int/local/cambio-climatico/Estrategia-Regional-Cambio-Climatico.pdf

- Linking the contributions of each participant. Streamlining processes, leading the way and setting up a mechanism for communication among countries in order to build a shared vision (Guatemala).
- Creating a subcommittee to take over regional planning and considering which country should lead it (Nicaragua).
- Specifying actions to be implemented by the region and not getting lost in theoretical issues. It is vital to establish action lines (Costa Rica).
- Strategy formulation should include the digital divide in many of the region's countries (Costa Rica).
- Targeting global citizenship in education, without the discourse that major polluters are the ones who should take action. Prioritize climate action over reduction of emissions and climate adaptation. Education should make reference to the shared benefits of taking action (Costa Rica).
- Opportunity to have a strategic plan for climate change. We can lead in this area. This is an opportunity to share and export the plan (Guatemala).
- Considering the SICA Regional Strategy on Climate Change and what the region already has in terms of education for sustainable development. However, this must cover all levels (not just formal education). Continuing to create forums for dialogue and exchange.
- Formulating an inventory of projects and agents working on CCE/ESD and identifying the impact of actions implemented in recent years. Classifying experiences by sector. Raising the profile of the tools, methodologies and visions being used in the region, as well as scenarios and data from research centres.
- Raising the profile of policies and strategies while identifying actors to carry out duties, roles and commitments undertaken.
- Determining the potential of educators and social communicators to create partnerships at the local and regional levels.
- Carrying out a diagnostic in each country. Being clear about local needs. The most important aspect is establishing regional

action lines adapted to each country in the light of each nation's different needs, resources and legal framework.

- Identifying topics of interest to the region and classifying content to be developed as part of CCE (water, energy and river basins), depending on the audience to be targeted (educators, journalists or local government). Content evaluation committee.
- Determining the governance mechanism for CCE in the region. Making use of Article 6 focal points to lead the process and making use of the region's focal points for the UNEP Environmental Training Network. Coordination between networks and support groups for each country.
- Including funding sources and mechanisms for formal and non-formal education.
- Defining the region's own research agenda and having a policy to strengthen existing environmental education and translate scientific knowledge into teaching materials.
- Innovating in differentiated teaching methodologies (including generational differences).
- Translating research outcomes into teaching materials for various local groups.
- In accordance with Article 6 commitments, continuing the CCE and awareness-raising. The cornerstone of this must be capacity building and strengthening.
- Identifying institutional barriers and overcoming them with the United Nations system (UNESCO mandate).
- Creating a network to share regional macroprojects and resources online. Creating a regional website for countries to upload information. Suggesting that UNESCO hosts the platform.

3. **Priority areas to be addressed in a subregional or national plan on CCE/ESD**

- Determining the approach of Ministries of Education and Environment to provide guidance on how to tackle issues of CCE.

- Establishing a communication network to continue sharing information on the regional plan.
- Key target groups: young people, women, socio-economically and environmentally disadvantaged populations (without excluding the general population).
- Taking the priority areas for CCE/ESD defined by UNESCO as a basis.
- Strengthening local capacity: students, public, governments, business leaders and decision-makers.

4. **Key partnerships**

- Integrating the Ministry of the Environment and the Ministry of Education.
- Mapping out actors including the private sector, local organizations and government, civil society, academia, professional associations and relevant institutions.
- Bringing together the region's public and private learning and research institutions (research centres and higher education). It is vital for the global discourse to trickle down to country level. For instance, 'rainwater harvesting' is not applicable to all countries.
- Linking in with the UNEP Environmental Training Network in Latin America and the Caribbean.
- San Luis Potosí University in Mexico is providing support for a regional communication platform (Share Point) that has usernames, passwords and different sections (library and forums). Coordinated by: *mariana.buendia@uaslp.mx*

ANNEX IV: Caribbean

Subregional working group

Recommendations from the Caribbean

The nations that constitute CARICOM are primarily small-island developing states, most with populations concentrated in low-lying coastal communities, and the 16.7 million people who live in CARICOM states are in a state of increased vulnerability to climate change. Higher temperatures, rises in sea level, unpredictability in the duration and intensity of seasons, and increased hurricane strength threaten lives, property, food and water security, and livelihoods throughout the region. It is therefore essential that education address the issues and challenges posed by climate change – allowing individuals, communities and nations to make informed decisions and enhance their climate-change-related adaptation and mitigation capacities.

Following the Experts Meeting on Climate Change Education for Sustainable Development in Latin America and the Caribbean, which was held during 12–14 May 2015 in San José, Costa Rica, the Caribbean participants formulated a Regional Climate Change Education Action Plan.

The plan entails:

- short-term (i.e. within two years) 'infusion' of climate change information into already-existing primary- and secondary-level courses (e.g. as teaching examples and examination practice questions, without the need for curriculum adjustment); and

- long-term (i.e. within five years), 'whole institution' incorporation of climate change into the curriculum via dedicated segments of primary- and secondary-level subjects, and in institutions of higher learning.

Implementation of the plan entails the following activities:

1. Establishment of a Caribbean Climate Change Education Implementing Group, with members from at least five Caribbean countries and including policy-makers (so ensuring fast-tracking of CCE into national and regional decisions), to:
    1.1. form the foundation for any international/donor support given to the initiative;

1.2. meet either face-to-face or online at least twice per year to develop work plans and budgets for the implementing group- and CCE-related actions; and
1.3. be responsible for:
1.3.1. advocating for and overseeing the implementation of CCE in the region's primary and secondary schools at both the infusion and whole-institution levels;
1.3.2. promoting the integration of CCE into teacher-education bodies and tertiary institutions; and
1.3.3. seeking funding for regional CCE initiatives and transparently managing and disbursing acquired funds.

2. Instituting systemic changes within the region's education and examinations systems, including:
2.1. conducting a baseline assessment of climate-change-related knowledge, attitudes and practices (KAPs) in Caribbean schools (e.g. reviewing the KAPs for various CARICOM countries in the Regional Clearinghouse based at the Caribbean Community Climate Change Centre, the 5Cs), as well as of applicable/adaptable internationally available materials (e.g. UNESCO courses and teacher-training materials), and creating a list of the region's human, material and knowledge capacity needs for the implementation of CCE (this should involve collaboration with the 5Cs, as well as with UNESCO, and must include curricula from regional primary, secondary and tertiary education institutions and systems);
2.2. establishing a regional working group (RWG) of at least 60 educators and teacher trainers who will:
2.2.1. develop and review guidelines for the creation of CCE content for Caribbean primary and secondary schools;
2.2.2. assist in the development of teacher training protocols and teaching- and examination-related materials for use in infusion- and whole institution-based CCE initiatives; and
2.2.3. Develop innovative, participatory and learner-centred teaching methods (to develop relevant competencies to face climate change challenges, such as critical thinking, problem solving, creativity, etc.);
2.3. national and regional Schools of Education, as well as teacher-training and accreditation institutions, infuse CCE-related information into and across their programmes and activities;
2.4. building support from Caribbean Ministries of Education (in partnership with national and regional institutions of higher

learning and teacher training) for the infusion of CCE-related information into their national primary-school curricula and associated examinations (with at least three primary schools in each of five Caribbean countries infusing CCE into their teaching);

2.5. working with Caribbean Ministries of Education and the Environment, and key educators and teacher trainers, to develop a strategic and pragmatic approach for integrating CCE into their national primary-school curricula; and

2.6. building support from the Caribbean Examinations Council (the regional testing body for secondary schools) to ensure that the region's school curricula reflect the growing relevance of climate change to Caribbean people, and for:

2.6.1. the infusion of CCE-related issues, challenges and responses into the existing ordinary- and advanced-level secondary school teaching (with at least three secondary schools in each of five Caribbean countries infusing CCE into their teaching); and

2.6.2. the incorporation of climate-change-related information into the curricula (and associated School-Based Assessments) of at least three subjects at the ordinary and advanced secondary school levels.

3. Creating, distributing and disseminating a range of region-relevant CCE products, through:

3.1. conducting a scoping of existing climate change materials regionally, as well as internationally, and evaluating their possible effectiveness and adaptation requirements for use as CCE teaching materials in Caribbean schools;

3.2. roll-out of already-available 5Cs and CDEMA toolkits (and associated teacher-training programmes) in at least five Caribbean countries by engaging ministries, schools and teachers in those countries;

3.3. identification and retention of virtual, website-related, audiovisual and illustrative content developers (with developed Terms of Reference and signed contracts with clearly articulated deliverables and timelines for delivery);

3.4. creation of an online knowledge management system and collaboration platform (with social media linkability) to serve:

3.4.1. as an addendum or enhancement to the 5Cs-based Regional Clearinghouse for the available CCE materials;

3.4.2. as a platform to support collaboration and efficient division of labour, information sharing and distribution (including best practices and lessons learned);

3.4.3. as a support zone for educators, students and the general public, and for audiences from primary school age to young adults; and

3.4.4. in national, regional and international CCE-related community building (particularly among teacher trainers and educators);

3.5. interactive and freely available (e.g. via website, social media) educational products (including computer games, simulations, etc.) that facilitate self-teaching of climate change issues by students;

3.6. print (at least 500 copies region-wide) and virtual workbooks for CCE infusion, and textbooks for 'whole institution' CCE incorporation, both with teacher guides and practice questions, developed for:

3.6.1. three primary-school subjects (including English and mathematics); and

3.6.2. five secondary-school subjects (including English, mathematics and Spanish); and

3.7. devising, filming, editing and distributing (via physical copies on DVD, or virtually via a dedicated website and/or social media sites) short videos on topics addressed in the secondary school textbook.

4. Building of public awareness and informal education sector activities, including:

4.1. engaging three celebrities who are widely known region-wide to appear in print and broadcast public service announcements (PSAs) on climate change and the need for regional adaptation and mitigation measures, and creating and distributing PSAs to media houses throughout the Caribbean;

4.2. establishing a Regional Youth Group for Climate Change Advocacy (which could be an arm of an existing youth group, such as the Caribbean Youth Environment Network, CYEN) of at least 60 young (less than 21 years old) people from at least five Caribbean countries, and:

4.2.1 establish an online forum for them to collaborate and advocate for climate-change-related measures in the region; and

4.2.2 ensure that elected leadership of the group has a voice in the Caribbean CCE implementing group; and

4.3. identifying and engaging regional consumer and producer groups (in at least five Caribbean islands), and working with them to incorporate climate change into consumer and producer attitudes and practices, and to enhance the region's green economy.

5. Establishment of a quality assurance/monitoring and evaluation mechanism, including but not exclusive to:
    5.1. independent peer review of CCE teaching materials;
    5.2. accreditation of teachers and teacher trainers;
    5.3. external examiners for CCE-based tests; and
    5.4. assessments of climate change literacy in the users (at all levels) of developed CCE products.

SUB-REGIONAL PLAN FOR CLIMATE CHANGE EDUCATION IN THE CARIBBEAN

The nations that constitute the Caribbean Community (CARICOM) are primarily small-island developing states, most with populations concentrated in low-lying coastal communities, and the 16.7 million persons who live in CARICOM states are in a state of increased vulnerability to climate change. Higher temperatures, rises in sea level, unpredictability in the duration and intensity of seasons, and increased hurricane strength threaten lives, property, food and water security, and livelihoods throughout the region. It is therefore essential that education addresses the issues and challenges posed by climate change—allowing individuals, communities and nations to make informed decisions, and enhance their climate change-related adaptation and mitigation capacities.

Following the Experts Meeting on Climate Change Education for Sustainable Development in Latin America and the Caribbean, whi ch was held during 12-14 May 2015 in San José, Costa Rica, the Caribbean participants formulated a Regional Climate Change Education Action Plan. The Plan entails:

- Short-term (i.e., within two years) 'infusion' of climate change information into already-existing primary and secondary level courses (e.g., as teaching examples and examination practice questions, without the need for curriculum adjustment); and

- Long-term (i.e., within five years), whole-institution incorporation of climate change into the curriculum via dedicated segments of primary and secondary level subjects, and in institutions of higher learning.

The table below outlines the major components of the Caribbean's Sub-Regional CCE Plan.

ACTIVITY	YEAR OF IMPLEMENTATION				
	1	2	3	4	5
ADMINISTRATION AND OVERSIGHT					
1. Establish a Caribbean Climate Change Education Implementing Group, with members from at least five Caribbean countries and which includes policy makers (so ensuring fast-tracking of climate change education, or CCE, into national and regional decisions), to: 1.1. Form the foundation for any international/ donor support given to the initiative; 1.2. Be responsible for: 1.2.1. Advocating for and overseeing the implementation of CCE in the region's primary and secondary schools at both the infusion and whole-institution levels; 1.2.2. Promoting the integration of CCE into teacher-education bodies and tertiary institutions; and 1.2.3. Seeking funding for regional CCE initiatives and transparently managing and disbursing acquired funds.					
2. Meetings of the Caribbean Climate Change Education Implementing Group to develop Work Plans and Budgets for the Implementing Group- and CCE- related actions: 2.1. Either face-to-face or online; and 2.2. At least twice per year.					

ACTIVITY	YEAR OF IMPLEMENTATION				
	1	2	3	4	5
CHANGES TO EDUCATION AND EXAMINATIONS SYSTEMS					
3. Baseline assessment of climate change-related knowledge, attitudes and practices (KAPs) in Caribbean schools (e.g., reviewing the KAPs for various CARICOM countries in the Regional Clearinghouse based at the Caribbean Community Climate Change Centre, the 5Cs), as well as of applicable/adaptable internationally available materials (e.g., UNESCO courses and teacher-training materials), and creating a list of the region's human, material and knowledge capacity needs for the implementation of CCE. This should: 3.1. Involve collaboration with the 5Cs and UNESCO; and 3.2. Include curricula from regional primary, secondary and tertiary education institutions and systems).					
4. Establish a Regional Working Group (RWG) of at least 60 educators and teacher trainers.					
5. Action by the Regional Working Group (RWG), including: 5.1. Development and review guidelines for the creation of CCE content for Caribbean primary and secondary schools; 5.2. Assistance in the development of teacher training protocols and teaching- and examination-related materials for use in infusion- and whole institution-based CCE initiatives; and 5.3. Development of innovative, participatory and learner-centred teaching methods (to develop relevant competencies to face climate change challenges, such as critical thinking, problem solving, creativity, etc.).					
6. National and regional Schools of Education, as well as teacher-training and accreditation institutions, infuse CCE-related information into and across their programmes and activities.					

ACTIVITY	YEAR OF IMPLEMENTATION				
	1	2	3	4	5
7. Building support from Caribbean Ministries of Education (in partnership with national and regional institutions of higher learning and teacher training) for the infusion of CCE-related information into their national primary-school curricula and associated examinations (with at least three primary schools in each of five Caribbean countries infusing CCE into their teaching).					
8. Development of a strategic and pragmatic approach for integrating CCE into their national primary-school curricula. Undertaken in collaboration with Caribbean Ministries of Education and the Environment, and key educators and teacher trainers.					
9. Building support from the Caribbean Examinations Council (the regional testing body for secondary schools) to ensure that the region's school curricula reflect the growing relevance of climate change to Caribbean people, and for: 9.1. The infusion of CCE-related issues, challenges and responses into the existing Ordinary- and Advanced-level secondary school teaching (with at least three secondary schools in each of five Caribbean countries infusing CCE into their teaching); and 9.2. The incorporation of climate change-related information into the curricula (and associated School-Based Assessments) of at least three subjects at the Ordinary and Advanced secondary school levels.					
CREATING AND DISTRIBUTING REGION-RELEVANT CCE PRODUCTS					
10. Conduct a scoping of existing climate change materials regionally, as well as internationally, and evaluate their possible effectiveness and adaptation requirements for use as CCE teaching materials in Caribbean schools.					
11. Roll out of already-available 5Cs and Caribbean Disaster Emergency Management Agency (CDEMA) toolkits (and associated teacher-training programmes) in at least five Caribbean countries by engaging ministries, schools and teachers in those countries.					

ACTIVITY	YEAR OF IMPLEMENTATION				
	1	2	3	4	5
12. Identification and retention of virtual, website-related, audiovisual and illustrative content developers (with developed Terms of Reference and signed contracts with clearly articulated deliverables and timelines for delivery).					
13. Creation of an online knowledge management system and collaboration platform (with social media linkability) to serve: 13.1. As an addendum or enhancement to the 5Cs-based Regional Clearinghouse for the available CCE materials; 13.2. As a platform to support collaboration and efficient division of labour, information sharing and distribution (including best practices and lessons learned); 13.3. As a support zone for educators, students, and the general public, and for audiences from primary school age to young adults; and 13.4. In national, regional and international CCE-related community building (particularly among teacher trainers and educators).					
14. Creation and dissemination of interactive and freely-available (e.g., via website, social media) educational products (including computer games, simulations, etc.) that facilitate self-teaching of climate change issues by students.					
15. Creation and distribution of print (at least 500 copies region-wide) and virtual workbooks for CCE infusion, and textbooks for whole-institution CCE incorporation, both with teacher guides and practice questions. Develop for: 15.1. Three primary school subjects (including English and Mathematics); and 15.2. Five secondary school subjects (including English, Mathematics, and Spanish).					
16. Devising, filming, editing and distributing (via physical copies on DVD, or virtually via a dedicated website and/or social media sites) short videos on topics addressed in the secondary school textbook.					

ACTIVITY	YEAR OF IMPLEMENTATION				
	1	2	3	4	5
BUILDING OF PUBLIC AWARENESS AND INFORMAL EDUCATION SECTOR					
17. Engaging three celebrities who are widely known region-wide to appear in print and broadcast public service announcements (PSAs) on climate change and the need for regional adaptation and mitigation measures, and create and distribute PSAs to media houses throughout the Caribbean.					
18. Creation and distribution of PSAs (to regional media houses).					
19. Establishing a Regional Youth Group for Climate Change Advocacy (which could be an arm of an existing youth group, such as the Caribbean Youth Environment Network, CYEN) of at least 60 young (less than 21 years-old) persons from at least five Caribbean countries. It should be ensured that the elected leadership of the group has a voice in the Caribbean CCE Implementing Group.					
20. Establish an online forum for Regional Youth Group for Climate Change Advocacy to collaborate and advocate for climate change-related measures in the region.					
21. Identifying and engaging regional consumer and producer groups (in at least five Caribbean islands), and working with them to incorporate climate change into consumer and producer attitudes and practices, and to enhance the region's Green Economy.					
ESTABLISHMENT OF A QUALITY ASSURANCE/ MONITORING AND EVALUATION MECHANISM					
22. Establish systems for: 22.1. Independent peer review of CCE teaching materials; 22.2. Accreditation of teachers and teacher trainers; 22.3. External examiners for CCE-based tests; and 22.4. Assessments of climate change literacy in the users (at all levels) of developed CCE products.					
Administer and assure effective operations of the established Quality Assurance and Monitoring and Evaluation systems.					

ANNEX V: South America

Subregional group work

Recommendations from South America

Recommendations to help the subregion's education systems to prepare their teachers, children and citizens to face the impacts of climate change.

- Approach that encompasses all levels of formal, non-formal and informal education by acknowledging their specific characteristics and including local knowledge.
- Proposing curriculum reform to include holistic and cross-cutting content on ESD and CCE.
- Empowering young people using intergenerational approaches that incorporate motivational ideas with topics linked to their local reality and involve the education community as a whole.
- Teacher training, including incentives for education.
- Producing precise and clear information strategies on the subject including media and social networking.
- Developing a differentiated approach, human rights-based approach and rights of nature approach.
- Suggesting that governments make education on climate change and sustainable development into a strategic priority.
- Developing teaching strategies suited to the context, cognitive stages and actors involved.

What should be the key elements for a subregional action plan on CCE?

- Linking the relevant United Nations Conventions that also emphasize education with the work of UNESCO in various similar educational approaches, as well as coordinating international agendas on the issue to join forces for dissemination and empowerment.
- Reviving the knowledge of communities, respecting cultural diversity and developing plans that are part of local reality based on knowledge dialogue.
- Strengthening political commitments made by governments to enforce international agreements and conventions.
- Urging governments to call on the United Nations system to harmonize the agendas of the various conventions and agencies.
- Promoting projects and actions to train decision-makers at various levels of government administration in the importance of ESD and climate change, while recognizing their important role in rolling out successful policies in this area.
- Promoting the creation of financing facilities from UNESCO and the United Nations to support the region's States Parties in formulating concrete policies to guarantee the effectiveness of

a higher number of improved education experiences as a basic tool for reducing vulnerability in the region.

Which priority areas should be addressed in a subregional action plan on CCE or ESD?

Governments should give priority to:

- training the trainer;
- all levels of formal, non-formal and informal education and for decision-makers;
- an approach that incorporates the whole school and community as a social and educational space;
- curricular reform that incorporates climate change issues in various subjects;
- changing the education approach from cognitive to experiential;
- research on CCE based on epistemology and methodology;
- aligning criteria to formulate quantitative and qualitative indicators for the region to assess the development of ESD and CCE initiatives; and
- linking the indicators with the time-frame set out in the Convention on Climate Change.

What are the key partnerships that should emerge for the above proposals?

- Strengthening South-South cooperation and the exchange of successful experiences.
- Strengthening expert networks on climate change involving the entire region to monitor the projects and initiatives of other countries.
- Making use of the education networks of UNESCO, UNEP and UNFCCC to strengthen mechanisms for the exchange of relevant experiences.
- Proclaiming that South America has a tradition of environmental education, and recognizing its progress in raising awareness of ESD.
- Making use of this meeting's recommendations as a regional instrument to present to the Secretariat of the UNFCCC (Article 6) on the basis of the 2016 Doha halfway review and as a contribution to the 2015 World Education Forum in Korea.
- Twinning of cities in the framework of the Bogotá Climate Summit.


Seeds


complexity


People Taking Actio
of Peace

IN COLLABORATION WITH:

SUPPORTED BY: