



REGIONAL CONFERENCE FOR CENTRAL AMERICA

CONFERENCE REPORT

MULTILINGUALISM IN CYBERSPACE: INDIGENOUS LANGUAGES FOR EMPOWERMENT

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PREFACE

In 1996, UNESCO published its Atlas of the World's Languages in Danger as a tool to monitor the status of languages and to raise awareness of the dangers. The third edition, published in 2010, provides information on 2,500 languages that are in danger, of which 199 have fewer than ten speakers or have actually been extinct since 1950. In 2009, an interactive and collaborative online edition of the atlas was created.

UNESCO is currently preparing an online platform to create a new World Atlas of Languages which will include digital maps, data sets covering all of the world's languages, new technical functionalities and content levels.

Following a consultation process in October 2014, UNESCO released a strategic document on the next steps towards the launch of this new World Atlas of Languages. It included recommendations for the elaboration of a plan of action aimed at extending global partnerships and translating the recommendations developed by the experts into concrete national and regional actions.

With the aim of empowering language speakers in Central America, particularly speakers of indigenous languages, UNESCO, in cooperation with the Government of Costa Rica, as well as national, regional and international partners, organized the Regional Conference for Latin America called "*Multilingualism in Cyberspace: Indigenous Languages for Empowerment*". The conference took place on 27 and 28 November 2015 at the National University for Distance Education (UNED), San José, Costa Rica.

The main objectives of this conference were:

- Promote the human rights and fundamental freedoms, with special focus on an equal access to multilingual information and knowledge, for all language speakers through effective applications of ICTs.
- Raise awareness on the importance of linguistic diversity for sustainable development and provide assistance and guidance to UNESCO Member States in the implementation of international, regional and national commitments related to language development and ICTs.
- Identify existing challenges, practical solutions and good practices among the professional community working in the language documentation, safeguarding, policy and industry fields.
- Encourage constructive dialogue among various stakeholders, be they from government, academia, industry, memory, media and information organizations, IT sector or civil society and language speakers.
- Encourage corporate partners to design appropriate language tools, products and services for indigenous communities.
- Elaborate on the recommendations for the preparation of the Regional Road Map for the development of a Regional Atlas of Languages within the context of UNESCO's World Atlas of Languages.
- Mobilize necessary resources and foster synergies among partners for a joint action in the Latin America region.

With the aim of obtaining as many inputs as possible, the conference was organized as follows: keynote speeches; panels with the participation of experts in different fields relating to best practices

in saving, preserving and disseminating indigenous languages; parallel sessions in the form of working groups, to address the four themes of the UNESCO recommendations on multilingualism: development of multilingual content; facilitation of access to networks and systems; development of public domain content; reaffirming the equitable balance between the interests of rights-holders and public interest.

This document presents the main outcomes of this conference on “Multilingualism in Cyberspace: Indigenous Languages for Empowerment”, placing emphasis on taking into account local experiences and the recommendations of the participants for a Regional Road Map for the development of a Regional Atlas of Languages within the context of UNESCO's World Atlas of Languages.

The document begins by outlining the conceptual framework and describing the context and background of this initiative. It then describes in some detail the good practices that were presented and analysed by the participants. Finally, it presents the main recommendations for the preparation of a Regional Road Map to advance the development of the Regional Atlas of Languages, with the primary aim of contributing to saving and preserving the languages of indigenous peoples for their empowerment, in cyberspace.

SUMMARY

In cooperation with the Government of Costa Rica, as well as national, regional and international partners, UNESCO held the Regional Conference for Central America called “*Multilingualism in Cyberspace: Indigenous Languages for Empowerment*”, which took place on 27 and 28 November 2015 at the National University for Distance Education (UNED), San José, Costa Rica.

The aims of this event were to encourage constructive dialogue among various stakeholders (from government, academia, the private sector, civil society and language speakers), foster relationships with corporate partners to design appropriate language tools, products and services for indigenous communities, and produce recommendations for the preparation of a Regional Road Map for the development of a Regional Atlas of Languages for Central America within the context of UNESCO’s World Atlas of Languages.

A first aspect to highlight is the acknowledgement that linguistic diversity is an integral part of cultural diversity. It has the capacity to reconcile the emotions, ideas and values of people from different cultural, social, economic and professional backgrounds; moreover, it is a key contributor to dialogue, tolerance and peace. The role that language plays in the construction and expression of individual and collective identity was also highlighted. It is an intangible but invaluable resource which is hard to acquire but, once acquired, easy and rewarding to share. In addition, mention was made of the various studies demonstrating that global linguistic diversity has long been in decline. According to some estimates, half of all languages spoken currently will have disappeared by the year 2050, hence the importance of UNESCO’s Atlas of Languages in Danger, which provides information about nearly 2,500 languages in danger, 199 of which have fewer than ten speakers or have been extinct since 1950.

For Central America, it was mentioned that the Atlas identifies a total 64 languages in danger: Belize 4, Costa Rica 8, El Salvador 2, Guatemala 23, Honduras 8, Nicaragua 11 and Panama 8. Meanwhile, Colombia has 68 languages in danger, Mexico 143 and Brazil 190.

Finally, it was pointed out that while some language communities have very large numbers of speakers, many other indigenous languages in Latin America are severely endangered as some communities live in remote areas that are very difficult to reach either physically or virtually. Consequently, unless the situation changes at political, educational, cultural and technological levels, some languages are likely to die out in the near future. Therefore, UNESCO’s call to governments around the world, academia and other institutions to document, safeguard and share digital information on linguistic diversity in their countries was recalled.

Following this contextualization, the subject of legal frameworks regarding education policies (part 3) was addressed. In this session, the important role of education systems and education policies in the promotion and learning of indigenous languages was clearly demonstrated, as were the social and cultural factors that should be taken into account when addressing this issue in indigenous communities. One of the main challenges that was raised is the need to extend these experiences to other communities and to approach work strategies with indigenous populations with care, always seeking to respect their identities and customs.

The sessions to share good practices for the promotion of indigenous languages in cyberspace (part 4) contributed greatly to the Conference as they revealed the diversity, richness and importance of experiences in the region in relation to preserving and disseminating endangered languages. The presentation of each experience was guided by a set of questions that led the panellists to make a link between multilingualism and technology, strategies employed and lessons learned that could contribute to the Multilingualism in Cyberspace Road Map, among other aspects.

Each presentation had its own particularities and value, as can be seen in the description of each one. The experiences shared showed the importance of universities in processes of revitalizing indigenous languages, when those processes are undertaken in a horizontal and participatory

manner. In addition, it was highlighted that, in order for those experiences to be sustainable, they must have state support; it is important for governments to get actively involved, through their specialized institutions, in the process of revitalizing indigenous languages, to prevent this rich linguistic and cultural heritage from being lost. Furthermore, it was stressed that it is necessary to: increase the budgets allocated to the development of intercultural bilingual education, so that teaching materials can be produced for all subjects in the different indigenous languages; support university projects aimed at revitalizing languages in danger and work in conjunction with the communities concerned; strengthen virtual platforms that deal with the production and publication of audiovisual materials in the different indigenous languages, so that the content in question reaches all people, especially those who cannot read or write; strengthen technological tools that support the study and learning of indigenous languages. Lastly, the importance of the public and private sectors joining forces to support educational initiatives related to the promotion and protection of indigenous languages was highlighted.

Finally, during the General Conference on the "Promotion and Use of Multilingualism and Universal Access to Cyberspace", parallel round tables were held on four priority topics for UNESCO, namely: 1. development of multilingual content and systems; 2. facilitation of access to networks and systems; 3. development of public domain content; 4. reaffirmation of the equitable balance between the interests of rights-holders and public interest.

Each of these round tables generated inputs for a draft Road Map for Central America (part 6). The contributions of the participants were resumed in a summary table for each area, with participants being asked to propose actions for different stakeholders (government; academia and educational institutions; communities and civil society; international organizations; industry and the private sector), distinguishing two timeframes: short term (Phase I: 2016-2017) and long term (Phase 2: 2018-2019). This document presents the inputs generated from this exercise. It should be pointed out that a large number of proposals for action in the different areas were put forward. To illustrate the types of proposals that were generated in this space, some of them are mentioned below:

- establish an interdisciplinary network of work teams to produce regulations and a code of ethics to align the aims of researchers with those of the communities;
- encourage the creation of radio and television content in indigenous languages;
- promote state coordination in order to have a clear position for decision-making regarding the grammar of indigenous languages;
- include the bilingual, multilingual and plurilingual cultural dimension in teacher training;
- promote the introduction of legislation that protects the intellectual property rights of indigenous peoples, in countries where such rights are not yet regulated;
- promote the active participation of language communities to ensure that the Atlas is useful and of benefit to the communities;
- set up an international observatory to monitor the conservation of indigenous languages.

Obviously, the inputs generated by these round tables constitute an important contribution to the UNESCO initiative focused on the implementation of a Road Map for Central America on *Multilingualism in Cyberspace: Indigenous Languages for Empowerment*.

To conclude this summary, it should be mentioned that, in January 2016, the UNESCO Communication and Information Programme will be preparing a draft Route Map for Central America, based on the inputs generated at this Conference. In early February 2016, this draft Road Map will be discussed with the firm aim of continuing to advance achievement of the proposed objectives.

1. BACKGROUND AND CONTEXT OF THE REGIONAL EXPERT CONFERENCE.

The **Communication and Information Sector** has been coordinating UNESCO's contribution to the outcomes of the World Summit on the Information Society (WSIS), and is in charge of the implementation of UNESCO's "Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace", adopted by the General Conference in 2003. The sector also collaborates with Intergovernmental Information for All (IFAP) within its strategic priority - multilingualism.

UNESCO is currently proposing to its Member States the creation of a new platform for the World Atlas of Languages, expanding the online version of the UNESCO Atlas of Languages in Danger (which has existed since 2003) and establishing a Global Task Force on Multilingualism in Cyberspace.

This initiative encompasses all the existing work undertaken by researchers and other public and private bodies, as well as including, for the first time, the wide range of materials, services and potential solutions made possible by the Internet. The Internet has given birth to new ways of using global public space in terms of social relationships, educational empowerment, job opportunities and information sharing. In particular, it offers a broader perspective - applicable to the current environment - of human rights and fundamental freedoms.

The long-term objective of this initiative is to contribute to the preservation of global linguistic diversity and cultural heritage, and the implementation of UNESCO's Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace (2003), as well as other international, regional and national normative instruments. This global initiative calls for the preservation of linguistic diversity, maintaining the resource of languages, increasing accessibility to and dissemination of these values through the effective application of ICTs, institutional networks and civic participation.

To achieve this objective, through the establishment of a Global Task Force, UNESCO will:

- (a) Increase awareness on a global scale and implement an action programme through the planned **Global Task Force on Multilingualism**, with a special focus on cyberspace. The Task Force will include national language organizations and other public and private stakeholders, and will adopt a human rights-based approach, giving due consideration to gender equality, non-discrimination, geographical representation, and wide outreach to language communities.
- (b) Establish an **International Advisory Committee**, made up of small select groups of international experts,¹ appointed by the UNESCO Director-General by means of an open call for nominations, on a three-year rotating basis. The Committee will be responsible for formulating major policies, including the technical, legal and financial frameworks, with a special focus on defining and refining the *language vitality criteria* used in the World Atlas of Languages. The Committee will hold regular meetings, mainly in a virtual format.
- (c) Promote the creation of a unique **Global Institutional Network**, made up of public and private national, regional and international institutions working in the language field. The role of this Network will be to gather and share language-related data and information on language tools and resources available in higher educational institutions, archives, museums, libraries and language standardization bodies, as well as keeping track of the most advanced solutions being developed by the private sector. For partners of UNESCO, the data on linguistic diversity and related problems available in national repositories have a very important role; those partners are keen to help address the need

¹ Seven members: five members representing the UNESCO regions, one chief editor and one representative of UNESCO.

for the interoperability of databases, where exciting display techniques will be used to illustrate the relationships between groups of data in time, space and each area of human activity. Delivered by means of contemporary technologies, this will give UNESCO and our partners broad scope to promote the taking of more-educated and better-informed decisions.

- (d) Involve the general public and particularly the *communities that speak specific languages*, through an *online languages help desk* - using social media techniques which area now almost universal - to create their own language families and friendship groups, strengthening the value of the individual languages.

The aforementioned long-term objective and the four associated objectives will be achieved through UNESCO's World Atlas of Languages, which will constitute a multiple interactive mega-platform with contributions from UNESCO's Global Task Force. It is hoped that this online platform will feed education, generate knowledge and opportunities for knowledge sharing at the international level, promote open access to the results of scientific research and empower local communities to use their own languages in cyberspace.

The database will offer free access to scientific and user-generated content. It will not only contain UNESCO data, but will also increase the dissemination of online digital resources related to languages provided by libraries, archives and education organizations, as well as other public and private organizations. The initiative will be unique, containing contributions from multinational organizations and nation states on the activities of communities of speakers of individual languages and other members of the general public, and will serve to expand our understanding of the world.

Finally, UNESCO encourages the designation of focal points in the Member States to support equitable and affordable access to information and promote the development of multilingual knowledge societies. It also urges Member States to take actions in and allocate funding to four strategic areas based on best practice, to facilitate the implementation of this Recommendation:

The four areas are:

- ✓ Development of multilingual content and systems.
- ✓ Facilitation of access to networks and systems.
- ✓ Development of public domain content.
- ✓ Reaffirmation of the equitable balance between the interests of rights-holders and public interest.

Regional Conference for Central America. Multilingualism in Cyberspace: Indigenous Languages for Empowerment.

With the aim of empowering language speakers, particularly speakers of indigenous languages, in relation to the sustainable development agenda in Latin American countries, UNESCO, in cooperation with the Government of Costa Rica, as well as national, regional and international partners, held the Regional Conference entitled "Multilingualism in Cyberspace: Indigenous Languages for Empowerment" in San José, Costa Rica, on 27 and 28 November 2015, in the Daniel Oduber Quirós Auditorium at the National University for Distance Education (UNED).

In addition to UNED, the Ministry of Public Education (MEP), the Academy of Mayan Languages of Guatemala and Rafael Landívar University, Guatemala, supported the organization of this Regional Conference.

The objectives of the Conference were:

- Promote the human rights and fundamental freedoms, with special focus on an equal access to multilingual information and knowledge, for all language speakers through effective applications of ICTs.
- Raise awareness on the importance of linguistic diversity for sustainable development and provide assistance and guidance to UNESCO Member States in the implementation of international, regional and national commitments related to language development and ICTs.
- Identify existing challenges, practical solutions and good practices among the professional community working in the language documentation, safeguarding, policy and industry fields.
- Encourage constructive dialogue among various stakeholders, be they from government, academia, industry, memory, media and information organizations, IT sector or civil society and language speakers.
- Encourage corporate partners to design appropriate language tools, products and services for indigenous communities.
- Elaborate on the recommendations for the preparation of the Regional Road Map for the development of a Regional Atlas of Languages within the context of UNESCO's World Atlas of Languages.
- Mobilize necessary resources and foster synergies among partners for a joint action in the Latin America region.

The expected outcomes of this Regional Conference were:

- Obtain concrete recommendations to improve the status of indigenous communities with regard to the role of ICTs in increasing access to multilingual information and knowledge in the public sphere, social services, products and job opportunities.
- Research and identify good practices and solutions of ICTs for promotion of multilingualism in cyberspace.
- Gain a clear understanding of the benefits for the development of multilingualism and social action in response to the needs of indigenous communities.
- Secure more partners from the public and private sectors who are willing to provide multilingual information, services, products and designs.
- Promote partnerships, communication and networks between the different stakeholders.
- Obtain recommendations that contribute to the preparation of a Regional Road Map and the development of a Regional Atlas of Languages, and promote the implementation of other international, regional and national commitments and mechanisms such as WSIS and IFAP.

The Conference was attended by 60 participants from different backgrounds: universities (linguistics, research and technology), indigenous students, language and culture teachers, representatives of the United Nations system (UNCTs), regional and sub-regional development agencies, and members of civil society and NGOs.

1.1 OVERVIEW OF THE PARTNERS AND ORGANIZATION OF THE EVENT

United Nations Educational, Scientific and Cultural Organization (UNESCO).

UNESCO is a specialized agency of the United Nations system. It has 195 Members and eight Associate Members. Its governing bodies are the General Conference and the Executive Board; the Secretariat, headed by the Director-General, implements the decisions taken by both bodies.

UNESCO works to create the conditions for dialogue among civilizations, cultures and peoples, based upon respect for commonly shared values. It is through this dialogue that the world can achieve global visions of sustainable development encompassing observance of human rights, mutual respect and the alleviation of poverty, all of which are at the heart of UNESCO'S mission and activities.

UNESCO's mission is to contribute to the building of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information.

UNESCO's strategies and activities are based on the broad goals and concrete objectives of the international community, which are expressed in internationally agreed development objectives, such as, until 2015, the Millennium Development Goals (MDGs) and, until 2030, the Sustainable Development Goals (SDGs). Thus, UNESCO's unique competencies in education, the sciences, culture and communication and information contribute towards the realization of those goals (UNESCO, 2015).

Ministry of Public Education (MEP).

The Ministry of Public education is a body of the Costa Rican executive, which is responsible for administering the education sector. Its mission is to “[p]romote the development and strengthening of an excellent education system that enables the entire population to access quality education centred on the comprehensive development of the individual and the promotion of a Costa Rican society that generates opportunities and social equity” (MEP, n.d.).

In this spirit and taking into account the particularities of the current socioeconomic, environmental, cultural and geographical context of the educational process, the MEP has created the Department of Intercultural Education. This department is part of the MEP's Division of Curricular Development, whose role is to promote an inclusive educational process based on solidarity, which respects human rights, cultural diversity and multi-ethnicity, and to form citizens who are capable of transforming the communal, local, national and global contexts in which they live. The Department of Intercultural Education is also responsible for promoting democratic practices that give meaning to the consolidation of a society united by diversity, with the aim of strengthening the traditions, customs and cultural values of the different communities, ethnic groups, nationalities and generations, especially considering infancy, childhood and adolescence at the different stages and levels of the education system (Institutional Report 2006-2014).

The Department of Intercultural Education is the institutional link with UNESCO; it is also the body that liaises with the Global Task Force on Multilingualism in Cyberspace and is responsible for supporting the creation of the World Atlas of Languages and the Road Map for Central America.

National University for Distance Education (UNED).

The National University for Distance Education (UNED) is one of the five public universities in Costa Rica. It was founded in 1977 and its educational model is based entirely on distance learning.

Among other programmes, UNED has a Centre for Research in Culture and Development (CICDE), which is a multidisciplinary and cross-disciplinary scientific research unit attached to UNED's Research Vice-Rector. This unit is dedicated to researching subjects such as culture, identities, forms of citizen organization, development projects and globalization (Article 1 of the CICDE Regulations).

The objective of the CICDE is to undertake scientific research to systematically and thoroughly investigate culture and development problems from the perspective of constructing democratic, participatory, ecological and socially inclusive alternatives, as well as recognizing intersubjectivities, cultural diversity and respect for human rights. All this is done through the prism of critical epistemological proposals that bring together and integrate various disciplinary approaches and theoretical perspectives (Article 2 of the CICDE Regulations).

Essentially, CICDE is an organization dedicated to scientific research in two main areas: scientific research into alternative forms of development, and scientific research into discourses, processes and practices.

In keeping with these objectives, UNED is linked to the Global Task Force on Multilingualism in Cyberspace, and is supporting and contributing to the creation of the World Atlas of Languages and the Road Map for Central America.

Inter-university Indigenous Movement of Costa Rica.

The Inter-university Indigenous Movement was born of the need to increase the visibility of indigenous students at Costa Rica's public universities and ensure that students' cultural specificities are taken into account in higher education.

The movement is made up of students from the University of Costa Rica (UCR), Costa Rica Institute of Technology (ITCR), the National University for Distance Education (UNED) and the National University of Costa Rica (UNA).

It is currently focused on strengthening the indigenous protection plan, which is based on the following focus areas: information, access and retention of new and continuing students in higher education, and serving as a communication bridge between communities in indigenous territories and the public universities and their various projects.

The Inter-university Indigenous Movement has linked with UNESCO, supporting and contributing to the Multilingualism in Cyberspace proposal, as well as the creation of the World Atlas of Languages and the Road Map for Central America.

Academy of Mayan Languages of Guatemala (ALMG).

The Academy of Mayan Languages of Guatemala is an autonomous state agency of the Republic of Guatemala. It is the institution that governs and standardizes Mayan languages in Guatemala. Its vision is focused on the use, development and promotion of Mayan languages, and the construction of a pluralistic, intercultural society that respects linguistic, ethnic and cultural differences. Its main function is the scientific study of Mayan languages and culture.

The Academy of Mayan Languages of Guatemala is made up of twenty-two Mayan language communities throughout the national territory. The Academy disseminates and promotes the use of Mayan languages in state services and private initiatives, in the language communities and in national life through inter-agency coordination to guarantee the full exercise of the linguistic, cultural, political, economic and social rights of the Mayan people. To achieve that, ALMG is guided by strategic objectives that guarantee the exercise of language rights, and coordinates at the inter-agency level programmes and projects that further that aim.

Rafael Landivar University, Guatemala.

Rafael Landivar University is a private, independent, non-profit higher education institution of Christian inspiration, with a Catholic vision and Jesuit tradition.

The university was founded on 22 January 1962 with the mission of pursuing truth through its research, teaching and community outreach activities, contributing to integral and sustainable

development, transforming individuals and society towards increasingly more human, just, inclusive and free dimensions.

In line with this objective, it is a university with a distinct identity, which is shared and promoted by a motivated, coordinated, committed and giving community. In terms of research, Rafael Landívar University identifies itself as a relevant, quality research centre that adds to intellectual and cultural heritage, and provides creative solutions to the challenges of the country and region. In terms of teaching, it is characterized by preparing competent, up-to-date, honest, integral, responsible professionals with full civic awareness and an understanding of the true meaning of life. In terms of community outreach work based on faith and justice, it stands out for its sociocultural and sociopolitical impact that promotes interculturality and contributes to strengthening democratic institutions and promoting environmental sustainability. In terms of administrative management, it has an effective, efficient, well-organized and sustainable university system that serves the substantive functions of the university, with consistent rules that safeguard the institution and its assets.

2. CONCEPT NOTE

2.1 Multilingual information and knowledge are key determinants of wealth creation, social transformation and human development.

Languages allow the transmission of knowledge from one generation to the next and are a strong force in disseminating cultures and traditions as well as being key for societal development, and scientific and technological progress. Equally, the role of languages is recognized as a crucial factor in group identity and as a key component in the creation of sustainable and inclusive knowledge societies.

Linguistic diversity is an integral part of cultural diversity. It has the capacity to reconcile the emotions, ideas and values of people from diverse cultural, social, economic and professional backgrounds; moreover, it is a key contributor to dialogue, tolerance and peace. Language also plays a part in the construction and expression of individual and collective identity. It is an intangible but invaluable resource which is hard to acquire but, once acquired, easy and rewarding to share.

Various studies have shown that global linguistic diversity has long been in decline and, according to some estimates, half of all languages spoken currently will have disappeared by the year 2050. According to the Universal Declaration of Human Rights, the legal framework of the United Nations and its vision of inclusive knowledge societies, the implications of language loss are profound at all levels and have an evidently negative effect on societal development and individual empowerment.

2.2 A growing threat to humanity if languages continue to disappear around the world

UNESCO's Atlas of Languages in Danger provides information about nearly 2,500 languages in danger, 199 of which have fewer than ten speakers or have been extinct since 1950. For Central America, the Atlas identifies a total 64 languages in danger (4 in Belize, 8 in Costa Rica, 2 in El Salvador, 23 in Guatemala, 8 in Honduras, 11 in Nicaragua and 8 in Panama). Meanwhile, Colombia has 68 languages in danger, Mexico 143 and Brazil 190.

While some language communities have very large numbers of speakers, many other indigenous languages in Latin America are severely endangered as some communities live in remote areas that are very difficult to reach either physically or virtually. Consequently, unless the situation changes at political, educational, cultural and technological levels, some languages are likely to die out in the near future. Therefore, it is essential to encourage local governments, academia and other memory and information institutions to document, safeguard and share digital information on linguistic diversity.

Over the past decade, the issue of languages in danger of disappearing has gained greater awareness among the scientific community, international organizations and, increasingly, the general public. There has also been growing interest in the role that a multilingual Internet can play in the preservation, revitalization and promotion of languages around the world.

The interactive and collaborative online edition includes information on the number of speakers and degree of endangerment, sources, International Standard Organization (ISO) codes and geographic coordinates. UNESCO is in the process of using the online edition to create a new World Atlas of Languages which will include digital maps, data sets covering all of the world's languages, new technical functionalities and content levels.

2.3 Technological progress and language vitality – opportunities and threats in the digital age

The development of ICTs is making the current Internet landscape increasingly complicated for users globally. On the one hand, more sophisticated software, mainly from the corporate sector, such as online translation, is empowering a wider range of native language users. On the other hand, the very nature of global Internet practice and experience is contributing to the flourishing of a digital lingua franca. Speakers of lesser-used, minority or non-dominant languages must therefore master this lingua franca – at least in reasonable measure – to obtain international recognition, visibility and adoption of their work, often at the cost of reduced exposure for their own language.

Furthermore, a large number of languages are still not present on the Internet. It is estimated that out of the world's approximately 6,700 languages, just 10 of them account for 84.3% of Internet users, with English and Chinese the dominant languages, accounting for 52% of Internet users worldwide.

This vast linguistic divide will only exacerbate the existing digital and knowledge divides, so it is obvious that everyone should have access to a multilingual Internet. Speakers of non-dominant languages need to be able to express themselves in culturally meaningful ways on the Internet in their mother tongue. In this respect, the Internet should be a multilingual and culturally diverse place where every culture and language has its own space.

The role of cutting-edge ICTs, particularly the growing impact of mobile technology on the documentation, revitalization and promotion of multilingualism and as tools for education, communication and connecting the generations, is helping communities take advantage of and gain access to the services to which all citizens are entitled in the context of an open, pluralistic and inclusive Internet.

At this time when language vitality and diversity are increasingly threatened by unequal access to ICTs and global knowledge systems, it is vital to build up global online platforms that promote the exchange of information and knowledge between different language users.

2.4 UNESCO's role in promoting linguistic diversity and multilingualism in cyberspace

Cultural diversity and multilingualism have, for UNESCO, a key role to play in fostering pluralistic, equitable, open and inclusive knowledge societies. UNESCO therefore encourages its Member States to formulate comprehensive language-related policies, allocate resources, and develop and use appropriate tools in order to promote and facilitate linguistic diversity and multilingualism in the media and the Internet.

For UNESCO, the implementation of an appropriate language policy is seen as a powerful political instrument for promoting the coexistence of different languages. International normative instruments such as conventions, treaties or recommendations can be reinforced at national level if comprehensive language policies are formulated, concrete measures are introduced, resources are allocated, and effective language tools are provided and used by all stakeholders concerned.

3. LEGAL FRAMEWORKS FOR INDIGENOUS LANGUAGES REGARDING EDUCATION POLICIES

The analysis of legal frameworks regarding education policies and their relationship with indigenous languages and their potential for replication, taking into account the different sociocultural contexts, was one of the topics addressed at the Conference. The aim was to ascertain the current situation in the region in terms of the formulation and implementation of policies concerning indigenous languages in the field of education. The experiences that were presented were related to the issues of intercultural education, the development and implementation of public policies, methodologies, models, good practices, strategies and successful experiences.

For the development of this topic, the speakers were sent, in advance, the following guiding questions:

- What aspects of the project/initiative could be replicated in other indigenous communities and other education systems?
- What results has this project had for the education of the children and adolescents in the communities involved?
- What could or should be improved in each project to achieve real interculturality in the education system?
- How can technology contribute to the goal of interculturality in education for indigenous peoples (specific cases, examples, best practices, strategies, ideas, possibilities)?

Below is an overview of the experiences that were shared by the different experts invited to speak at the Conference.

3.1 Indigenous language teaching in Costa Rica. Presentation by Carmen Rojas Chaves, Advisor to the Department of Intercultural Education, Ministry of Public Education, Costa Rica.

In Costa Rica, there are nine indigenous ethnic groups, primarily distributed in the south of the country, on both sides of the Cordillera de Talamanca. These peoples are the Chorotega (who no longer use their language as it died out more than 300 years ago), Maleku, Huetar (who are the descendants of the people who live on the country's central plateau and whose language died out more than 300 years ago), Térraba or Teribe, Brunca, Guaymí, Cabecar and Bribri. All the populations are small in number, with none of them exceeding 20,000, and their languages are spoken by no more than 90% of the population, in any case. The number of speakers varies from 10,000 to 500 people, depending on the ethnic group. At present, there are five living languages: Cabecar, Bribri, Nögbé, Buglé and Maleku.

The country has a legal framework for working to revitalize the indigenous languages. Costa Rica has signed various international declarations and conventions related to protecting the rights of indigenous minorities, including ILO Convention 169 and the United Nations Declaration on the Rights of Indigenous Peoples. These instruments have had an impact on the way the state has started to change its relationships with indigenous peoples and reforms have been made to domestic legislation to bring it in line with the provisions of Convention 169. One consequence of this was the reform of Article 76 of the Constitution in 1999, whereby the state undertakes to take action to strengthen and disseminate indigenous languages. This commitment was recently reaffirmed in Decree 37801 of the Ministry of Public Education (MEP), which establishes as central objectives of the education provided to indigenous peoples the preservation and dissemination of indigenous languages and the progressive development of bilingual education.

However, the only standardized policy that the state has implemented in this area is the creation of an indigenous language teaching programme carried out by the MEP. Students receive three lessons a week in the indigenous language, as their native language or a second language. The teachers are all members of indigenous communities and speakers of indigenous languages, and are given comprehensive, ongoing training.

The objectives of this programme are:

1. revitalize and disseminate the country's indigenous languages by teaching them to children and young people;
2. develop students' oral and written expression skills in indigenous languages;
3. promote the appreciation of traditional indigenous literature.

Obstacles to the programme

- Development of the indigenous language teaching programme is limited by the fact that it is essentially for primary education, although it has started to be introduced in indigenous adult education colleges (the CINDEAs).
- There is no specific programme in Costa Rica for training teachers of indigenous languages.
- Only 40% of indigenous people live in their territories, because many have migrated to the peripheries of their territories in search of greater access to public services, employment, etc.
- Coverage of the programme has been provided in line with demand.
- There are very few written materials in indigenous languages to work with at teaching establishments, which makes it difficult for children to share their educational materials at home.
- There are no state-led actions to bolster the work of this programme.

Therefore, it is requested for the state to work closely with other projects and actions developed in indigenous communities that contribute to strengthening indigenous languages.

3.2 Language policies for multilingualism and university training for indigenous teachers in Brazil. Presentation by Gilvan Müller de Oliveira, Institute for Research and Development in Language Policy (IPOL), Federal University of Santa Catarina (UFSC), Florianopolis, Brazil.

In Brazil, there is a differentiated indigenous education system; this education model establishes that teachers of indigenous communities must themselves be indigenous. In addition, the state recognizes Brazilian languages – not only indigenous languages, but also the languages spoken by immigrant groups – as a form of heritage. This has given rise to a series of policies that support the recognition and strengthening of multilingualism in Brazil.

- (1) **Decentralized model of curriculum construction with community consultation (Resolution 03/1999 of the National Education Council).** This model is based on the premise that each people can build its own curricular vision and practices.
- (2) **Social technologies for plurilingualism.** The initiatives that have been developed in this area include the granting of joint official status to languages at the municipal level (19 municipalities, 11 languages), municipal language censuses (which have been

carried out in two municipalities), and the National Inventory of Linguistic Diversity (INDL) which has inventoried three languages, with a further four underway. This INDL seeks to identify the language, its demographics and its degree of use, among other aspects.

Difficulties

- Despite these language policies, all indigenous languages are currently in danger.
- The indigenous languages of Brazil are hardly represented in digital media or on the Internet.
- The hegemonic language (Portuguese) exerts overwhelming pressure, while many education administrators consider that indigenous languages fall within the domain of traditional knowledge, and should remain there.
- There is a lack of coordination in the management of languages by the different bodies.
- There is no overall plan of objectives - in the style of the Millennium Goals - for multilingualism.

University education

With regard to university education, the Federal University of Amazonas offers a degree in Education Policy and Sustainable Development, which is offered in an indigenous community to which the university transfers, with the teaching being delivered in different indigenous languages (Tukano, Nheengatu and Baniwa), with Portuguese and Spanish being used as auxiliary languages. The teaching methodology was elaborated in consultation with the indigenous population and the basis of the curriculum is research, without Western subjects being imposed.

This initiative has required great effort as a university degree is necessary for the participation of indigenous people to work on the Atlas.

3.3 Challenges of the process of implementing IBE in indigenous territories of the Miskito in Honduras: “political will vs. demand from the Miskito”. Presentation by Cirilo Rasio Fedelman of Miskitu Asla Takanka (MASTA), Honduras.

Indigenous peoples have been marginalized and have not participated in the political agenda for more than 500 years. To this day, there is no legal framework in Honduras to safeguard our rights, with the exception of the international framework of Convention 169.

Efforts have been being made to implement intercultural bilingual education (IBE) in the Mosquitia region of Honduras since the 1940s. This process began thanks to the renewed appreciation given to the language and culture of the Miskito people by the Moravian Evangelical Church, which started to teach its parishioners to read and write. The state introduced this programme in public schools in the 1950s, however, the process was not followed up and it was not until the 1980s that the Agency for the Development of the Mosquitia (MOPAWI) resumed the process and carried out educational research with foreign assistance. In conjunction with local teachers, MOPAWI set up a committee to fight for the implementation of IBE called the Committee for Intercultural Bilingual Education in the Honduran Mosquitia (CEBIMH). In May 1994, a pilot project was commenced with five schools in areas of La Mosquitia and three monolingual schools as control schools to conduct a pre-test and post-test of the academic progress of the two programmes. However, it was not until 2009 that the departmental education directorate declared the department in an education emergency and requested support with the implementation of IBE.

In 2012, the National Education Programme for the Indigenous and Afro-Antillean Ethnic Groups of Honduras (PRONEEAAH) and Proyecto EducAcción, in coordination with the organization Miskitu Asla Takanka (MASTA), began defining strategies for the implementation of IBE in La Mosquitia.

That same year, the Ministry of Education declared the implementation of IBE official. This process began with the first two IBE training modules for teachers and directors of selected educational establishments. In 2013, the third module was started with the implementation of IBE in 11 schools and 11 kindergartens in the municipality of Puerto Lempira.

In 2014, the training of classroom teachers and establishment directors with facilitator teachers was commenced by district seat and IBE municipality department, and the coverage of IBE establishments was extended. In 2015, 200 educational establishments are implementing IBE up to year six. In addition, a workshop was held on neologisms and around a thousand words were created in L1, completing the validation process. Limited distribution of texts of stories in L1.

Goals:

- We must aspire to have a university where young people have access to education that takes into account the potential of indigenous communities.
- Scholarships need to be provided to enable more indigenous young people to attend university.
- Bring about a change of attitude on the part of teachers and authorities regarding the importance of IBE.
- 100% of educational establishments in La Mosquitia implementing IBE.
- Offer higher education in IBE for teachers in the department.
- Harmonize the basic national curriculum with the IBE curriculum.
- Assess children's learning in the Miskito language.

Challenges:

- Design and develop an inclusive IBE educational model based on solidarity, to then be incorporated into the curriculum, strengthened by experiences from other countries regarding IBE-specific education systems.
- La Mosquitia is the only department in the country that does not have a university, making it almost impossible for the indigenous population to attend university.
- The Miskito people have the right to differentiated education; 70 % of the child population speaks no other language than Miskito so, when they start school, they are faced with a language barrier that impedes the normal learning process.
- Create at least one secondary school in each of the 12 territorial districts, with all the necessary infrastructure and teaching staff to teach students from years 7 to 11, to enable school-leavers to go on to university.
- Set up an indigenous university or regional university centres offering degree courses suited to the local context.
- Train existing teaching staff and facilitate their access to grants for their preparation in the different specialities in the field of education. In addition, strengthen their IBE skills to employ them as professors at the university centre created.
- Make Miskito an official language and create academies of arts and languages.

- The local council must ensure that all children of school age go to school and learn what they should under the IBE model.
- The local council must ensure that young people maintain their language and learn to read and write it. The children will also gradually learn to read and write the official language of the country, thereby becoming bilingual students.

3.4 Intercultural bilingual education and the development of indigenous languages in cyberspace. Notes on Peru. Presentation by Alicia Matta Gonzales, Ministry of Education, Peru.

Peru's curriculum map shows that use of technology is fundamental for improving quality of life. The acquisition of technological knowledge enables children to develop their languages in cyberspace. In the case of students who belong to indigenous groups, this knowledge is essential and has been taught through intercultural bilingual education; in other words, it has been approached in an integrated manner, from all angles.

The use of information and communication technologies is linked with education in two ways: through practical teaching of how to use the technology and as a technological tool to aid learning.

Difficulties in implementing intercultural bilingual education (IBE) policies in Peru

- There is a lack of information that links IBE and ICTs in Peruvian schools.
- No research establishes technology as a specific linguistic domain, understanding technology as a shared body of common sense about the nature of language.
- There is a political imaginary of language symmetry.
- Asymmetrical and hierarchical situation between indigenous languages and Spanish.
- Need for a policy to reverse the practices of diglossia and 'cyberglossia'.
- In many domestic contexts, indigenous languages are limited to oral tradition and a historical and cultural past. Many attitudes are reflected in various specific aspects: education and labour systems that have not yet been corrected, for example, in the Peruvian education system, it is considered that indigenous languages impede the learning of Spanish.
- Secondary and higher education is largely taught in Spanish and certain more or less conscious 'civilizing' attitudes prevail.
- The policies reinforce the vicious circle of diglossia and cyberglossia in cyberspace.

Situation of speakers of indigenous languages in Peru regarding access to and use of ICTs.

Great diversity and heterogeneity of indigenous languages: one in ten inhabitants speak an indigenous language. The situation of each language is very different in terms of population, history and attitudes, with regard to both the language itself and the related communities and speakers.

- **The digital divide between speakers of indigenous languages and Spanish speakers.** With regard to education, educational establishments for speakers of indigenous languages are less well equipped and have less connectivity. At the national level, the digital divide is multidimensional as it involves factors associated with access to and use of ICTs. Socially, speakers of indigenous languages experience lower financial integration and higher levels of poverty. In terms of education, 45% of speakers of indigenous languages have only reached the primary level and just 9% of inhabitants who have an indigenous first language

have entered higher education. In addition, in some cases, accessing technology involves travel and considerable expense for households. Moreover, speakers of indigenous languages have received poor-quality, disjointed, decontextualized education that has often been delivered in Spanish. Culturally, little has been done to exploit the potential of ICTs and the Internet.

- **Attitudes, discourses and imaginaries.** For parents, technology has an innovative, symbolic value that breaks with the traditional teaching that links modernity, globalization and opportunities. For students, technology is associated with self-learning, but also experimentation, play and entertainment. Teachers have found that technology is not something pedagogical but rather, where the teacher is replaced, teachers with a low ICT level tend to overvalue the technology.

In view of the above, it is important to have IBE policies that can general horizontal practices and attitudes towards new languages and strengthen the potential and opportunities offered by the indigenous languages, linked to technology.

Policies implemented

The educational technologies policy began in the 1990s with distance education policies. In the early 2000s, the focus shifted to technological equipment and from 2012 policies have been geared towards increasing Internet coverage and connectivity.

For teachers, the focus has been to improve teaching resources and information; for students, programmes have been developed that teach specific technological skills, such as programming or robotics.

As for IBE policies, progress has been made in structuring the development of an ICT policy, for example, an IBE teaching approach incorporating educational quality criteria has been developed, a national register of IBE schools has been established, the number of bilingual teachers has been increased, and 28 indigenous language alphabets and grammars have been standardized through a participatory process.

Recommendations for reorienting the Peruvian IBE policy

- Foster appropriate use of ICTs.
- Disseminate the intercultural approach throughout the teaching community.
- Guarantee a reliable electricity supply and Internet connection.
- Ensure the availability of sufficient operating equipment.
- Adapt software to coordinated bilingual users.
- Guarantee teachers' digital technology.
- Guarantee curricular integration.
- Ensure that teachers use minimum teaching content in education.
- Guarantee bilingual education that teaches students about technologies and with technologies.

The policy will only be viable if it is structured from a rights approach, with a culture of peace, acknowledging the debt to indigenous peoples. Consider the sovereignty and collective rights of

peoples, aligning the state agenda with the educational, social, cultural and economic agendas of indigenous peoples, adopting joint management to take into account their skills and their ability to shape their own destinies.

3.5 Bilingual and intercultural education in Guatemala. Presentation by Gutberto Leiva, Deputy Minister for Education, Directorate General for Bilingual Intercultural Education (DIGEBI), Guatemala.

Guatemala has four indigenous ethnic groups: the Maya, who make up 60% and have 22 language communities; the Garifuna, of African descent; the Ladinos; and the Xinka.

History of bilingual education in Guatemala

In Guatemala, there has been bilingual education since 1676, when the fourth university in the Americas - University of San Carlos of Guatemala - was founded. This university made an important contribution by teaching the Kaqchikel and K'iche' languages.

In 1962, a seminar was held to update the teachers who later, in 1964, were to become the first promoters of education, but in the process of castilianization.

In 1965, a pilot programme was commenced in the four most widely spoken national languages in Guatemala.

In 1984, the National Bicultural Bilingual Programme for the mother tongue and a second language was begun.

In 1985, the new Constitution of Guatemala recognized and provided for the country's indigenous peoples, mainly the Maya.

In 1995, the Directorate General for Bilingual and Intercultural Education (DIGEBI) was created; that same year, one of the peace agreements, the "Agreement on Identity and Rights of Indigenous Peoples"" was drawn up, which contains sections on language and educational reform in Guatemala.

Later, in 2003, Guatemala's Ministry of Education created the Sub-Office of Bilingual and Intercultural Education, where policy decisions can be negotiated.

In 2012, a strategic implementation plan (the 2012-2016 Plan) was introduced, including various elements about how to handle bilingual education.

In this context and based on the model of intercultural bilingual education, Guatemala's Ministry of Education has changed its approach to teach just one language, incorporating another language into the teaching so that it becomes a vehicle for interculturality. Moreover, values such as stories, traditions, customs and gastronomic aspects are included in Guatemala's national curriculum.

This model has led the 23 administrative divisions of the Ministry of Education to view BIE as a holistic approach and, consequently, the commitment has extended to all departments. Furthermore, regarding human resources, there are 21 schools offering bilingual training in the languages of each region and two normal schools for training teachers in primary education for the peoples in question.

Added to that, Guatemala's Ministry of Education has made the effort to provide teaching materials and technical pedagogical support to teachers working with those population groups. The resources that have been produced for teacher training include documents such as methodological strategies to apply to monolingual and bilingual students, a document for teachers to teach themselves Kaqchikel and a handbook for teaching a second language. For the Xinka people, a spelling and pronunciation guide has been written, in addition to guidelines for cultural policies and the development of cultural policies, and how to address that knowledge.

The work undertaken in Guatemala has shown us that in order to define what approach to take with a school, we must first know how the students speak, what language the teachers speak, what language the community speaks and what resources are available.

4. PROMOTION OF INDIGENOUS LANGUAGES IN CYBERSPACE

The objective of reflecting on the promotion of indigenous languages in cyberspace is to look for and identify good practices and ICT solutions for the promotion of multilingualism in Central America and the Caribbean.

The aim is to highlight the contribution of technologies to the preservation and protection of indigenous languages, as well as to learn about technological advances, projects and initiatives currently being carried out and their concrete contribution to the promotion and preservation of multilingualism.

For the analysis of this subject, each of the panellists was provided with the following guiding questions:

- How was the link made between multilingualism and technology?
- Why was that particular type of technology chosen?
- What aspects of the project/initiative could be replicated in other indigenous communities?
- What strategies were used to make it happen?
- What lessons were learned that could contribute to the Road Map on Multilingualism in Cyberspace?
- What tangible results has the initiative produced?

Below is an overview of the experiences that were shared at the Conference by the different experts invited.

4.1 Intercultural education in Belize. Presentation by Filiberto Penados of the Center for Engaged Learning Abroad (CELA), Belize.

Pluriculturalism and multilingualism have yet to be addressed in the public policies of the Government of Belize, although the state does support private and community initiatives, which is why most work in relation to intercultural bilingual education has been undertaken by indigenous communities and organizations.

In 2001, Mayan organizations set up the Tumul K'in Centre of Learning with the objective of promoting "development with identity" through education that combines Mayan values and knowledge with knowledge and technology from other cultures. This centre employs teachers trained at the universities and teachers from the community, generating an exchange between the school and the community. One of the most important projects has been the establishment of a radio station that promotes communication in the Q'eqchi' and Mopan languages.

In 2005, through UNICEF, an initiative was launched to take this practice to other schools, as well as training teachers to write the language and be able to use it in cyberspace, as the majority of knowledge is currently passed on through oral tradition.

This experience had very good results among the children. The teachers reported improved performance of the children, as they felt represented and their languages were part of the curriculum; in addition, the level of involvement of parents increased in the schools.

Another initiative that is worth highlighting is that of the independent school of the National Garifuna Council. One of the most salient results of this experience was training teaching staff to question what education consists of, what type of education is important to promote and, on that basis, what changes could be made in local schools.

Thanks to the cooperation of the Academy of Mayan Languages of Guatemala, this series of initiatives and the increased access to training opportunities generated greater political awareness among teachers, leading to the formation of the Congress of Mayan Teachers of Belize.

As the teachers were unable to include Mayan languages in the school curriculum, they took the initiative and organized a spelling competition in Mayan, which has been very successful, with increasing numbers of schools taking part. One limiting factor that has been encountered in this experience is the lack of support from the state, which has not provided the spaces required to teach the languages and intercultural education. However, this factor has not limited the capacity of the indigenous groups to use and strengthen the small spaces that are available for language teaching; these initiatives have been extended with the support of international organizations, although not yet in a sustainable manner.

Finally, it should be pointed out that the empowerment of teachers has been essential, as has their commitment to find the best ways of working with each community, according to its needs. On many occasions, cyberspace has offered a possibility for collaboration between groups and organizations to strengthen the work and support community initiatives.

4.2 Access, preservation and multiple literacies: library and information services to foster the use of indigenous languages in cyberspace. Presentation by Clara Chu, Director and distinguished professor at Mortenson Center for International Library Programs, University of Illinois at Urbana-Champaign, USA.

Libraries play a crucial role in access, preservation and multiple literacies. Xwi7xwa Library at the University of British Columbia has a programme called “Indigitization”, the objective of which is to preserve spoken languages (<http://www.library.ubc.ca/>).

The work described below is carried out in conjunction with the communities that actively participate in reviewing the materials that are gathered, documented and preserved, as it is very important to have software applications that respect the culture of indigenous peoples. Another resource for preserving indigenous languages is Wikimedia. In Colombia, there is a group of Wikimedia editors working to prepare documents in indigenous languages and make them available online.

A similar experience has taken place in Australia, where the languages being worked with are oral tradition languages. Consequently, Wikipedia is being encouraged to accept more audio and video content, and not only texts and images. With regard to accessing information, it is very important to respect each people’s cultural protocols.

There is a project called Scientific Animations Without Borders (SAWBO), which provides information and short videos that can be accessed from any mobile telephone. Indeed, once information has been preserved, it is important for it to be used by people.

At Vancouver Island University in Canada, there is a Digital Storytelling Project, the objective of which is to give young people a space to create digital stories and experiences, and then share them in a safe way.

The experiences mentioned above aim to illustrate the fundamental role of libraries in the promotion of indigenous languages in cyberspace and, above all, to underline the need for all sectors linked to this subject to work together to ensure that the impact of this work continues to increase.

4.3 The Academy of Mayan Languages of Guatemala in social networks. Presentation by Raymundo Caz, Representative of the Academy of Mayan Languages of Guatemala (ALMG).

The Academy of Mayan Languages of Guatemala is a state institution that has coverage in twenty-two language communities, including four linguistic majority communities, other intermediate communities and some small communities. The Academy's website is a virtual tool which seeks to promote, disseminate and save Mayan languages, as well as publicizing and providing information about advances made in relation to Guatemala's native languages.

This website contains general information about the objectives, vision and mission of the Academy, as well as information about the different Mayan language communities. Other materials available on the website are related to the Academy's administrative and financial activities.

It also provides linguistic content describing each of the Academy's programmes that has been institutionalized through the Linguistic and Cultural Department. These programmes have a variety of objectives, ranging from working with Mayan populations to training teachers and translating materials into Mayan languages. The website also includes a virtual library, which offers interactive dictionaries for the twenty-two Mayan language communities.

In the course of this experience, the website was centralized at the Academy's central office, which discouraged the communities from using it; consequently, it was decided to decentralize this service through social networks, especially Facebook. This initiative has been very successful as, of the 22 language communities, 11 are active in this social network, exchanging information in their own languages.

4.4 Guatemalan National Language Translator. Presentation by Julio León of the Association for Linguistic and Scientific Research and Mayan Worldview, Guatemala.

The National Language Translator is a program for translating the Maya, Garifuna and Xinka languages into Spanish and English. It is intended to contribute to the development of Guatemala's national languages, which would result in generating favourable conditions for the development of the four peoples living in the national territory, taking into account their contexts and identities.

The translation process has four stages, which are described below:

Stage 1. Grammatical integration of Mayan languages. As each language has a different grammatical structure, the translator is designed to translate the words, but also to arrange the sentence according to the appropriate grammatical structure, in order to provide a faithful rendering of the language.

Stage 2. Analysis. In this stage, three different analyses are undertaken: a syntactic analysis (parsing), which analyses the structure of expressions based on grammar; a semantic analysis, which checks that the arguments of an operator belong to the set of possible operators and are compatible with each other, to give a valid reading; and a lexical analysis, which verifies whether all the symbols belong to the language to be translated.

Stage 3. Replacement. At this stage, the translation is carried out according to the grammar rules of the target language. The system also has the capacity to correct errors and spelling.

Stage 4. Rearrangement. The translation system will identify the grammatical structure of the source and target sentences, to rearrange them according to the grammatical structure of the target language, in order to provide a faithful translation.

This project will generate social and institutional benefits as it will increase literacy in each of the Mayan languages, promote the development of bilingual education, improve access to state information, facilitate access to university, contribute to forming a national vision, provide an

incentive for studying and the pursuit of knowledge, contribute to the development of businesses in both rural and urban areas, and help improve communication with and service to tourists.

4.5 Educational TV: intercultural bilingual reality in Honduras. Presentation by José Reyniery Nuñez, Suyapa Educational TV, Tegucigalpa, Honduras.

In Honduras, there are 919 indigenous and Afro-Honduran intercultural bilingual education (IBE) establishments. One hundred and eighty three of those are pre-school centres and 736 are primary schools.

The achievements in this field include the production of textbooks and other educational materials. Regrettably, it is not yet possible to produce textbooks for all subjects in every native language of each ethnic group as the necessary budget is not available and the government has not allocated specific funding to this.

Furthermore, work is being undertaken with the three most prominent languages in Honduras - Miskito, Garifuna and Pech – to produce a dictionary with a thousand new words which did not previously exist but are now needed due to technological advances.

Another of the goals achieved between 2014 and 2015 was following up construction of the nine centres of the IBE teacher training programme, and capacity-building in IBE methodology and teaching in the 15 departments.

In 2015, the achievements made were: the introduction of a high school diploma in science and humanities for the Tawahka communities; the creation and validation of neologisms in the Miskito and Garifuna languages; the introduction of a bachelor's degree in IBE for Copán, Olancho and La Ceiba, through an agreement with Francisco Morazán National Pedagogical University; the diploma course in “Management of Educational Quality for Intercultural Bilingual Education”; the nomination of National Teacher of the Year 2014 and 2015 for the Tolupan and Tawahka peoples; and the monitoring and follow-up tour of the Department of Planning, Monitoring and Evaluation.

Suyapa Educational TV plays both an informative and an education role, as it is working to strengthen the identity of indigenous peoples through the Telebásica programme, which consists of short videos that summarize the lesson content that students should receive and the production of digital textbooks so that children in remote areas without Internet coverage can read them on a tablet. Where there is no electricity supply, charging points powered by solar panels will be set up.

4.6 SkwaqG tloG: revitalization of the Chatino language in cyberspace. Presentation by Hilaria Cruz, University of Kentucky, USA.

Chatino languages are spoken in southern Mexico in the state of Oaxaca. These languages derive from the Zapotecan branch of the Oto-Manguean language family. Chatino consists of three languages: Eastern Chatino, Tataltepec Chatino and Zenzontepec Chatino.

In 2003, a project was established to document the Chatino language, with the objective of using linguistic science techniques and advances to document, analyse and revitalize the Chatino language. To implement this project, various villages were visited to record and analyse the grammar of the language, as well as different types of speech in their natural contexts, including narratives, prayers and political speeches. Thanks to this work, there is now a greater understanding of the tones and grammar, and a practical alphabet of Chatino languages has been developed.

This project has a presence on social media where pictures and videos are shared to clarify aspects of the practical alphabet (<https://www.facebook.com/Chaq-f-tnya-j-Lengua-Chatina-1655139228102489/>). The Chatino-speaking population has responded very positively to this page, which has more than 5,000 followers, the majority of them are Chatinos/as living in the United States or the Chatino region.

Goals for the future include: the ongoing work to continue popularizing writing in cyberspace and increase the number of readers and writers; campaigning for Chatino to be used as a language of instruction in educational establishments; and uniting efforts with the different social sectors to halt the loss of languages and foster the use of web technologies to support this task.

4.7 The Náhuat Nursery: a model of early childhood language immersion for the revitalization of dying languages in El Salvador. Presentation by Jorge Lemus of Don Bosco University, Santo Domingo de Guzmán, El Salvador.

El Salvador does not have the same linguistic diversity as the other countries in the region; of the eight indigenous languages, only one has survived, but with very few speakers (approximately 150 elderly adults).

To determine the degree of vitality of the Náhuat language, a language vitality index has been developed with three different indicators: intergenerational transmission, language and identity, and scope of use. From analysis of the results of these indicators, it can be deduced that this language is on the verge of extinction.

That being the case, efforts have been begun to revitalize the language. A revitalization model has been developed based on five interrelated components: linguistic and cultural corpus, educational programmes, legislation, social wellbeing and cultural identity.

To try to revitalize the Náhuat language, educational programmes have been set up, such as teaching the language in educational establishments, with the limitation that it is only taught for one hour a week; nonetheless, more than 5,000 children receive the lessons. In addition, work has been done on the linguistic corpus, on preparing teaching materials in Náhuat and on training teachers in intercultural bilingual education.

Don Bosco University has a publishing division dedicated exclusively to indigenous peoples and has published a wide range of textbooks, literary studies and linguistic studies.

Another project that has been developed is the Náhuat Nursery, which aims to build on the grandparent-grandchild relationship given that, as was mentioned at the start of this section, the only remaining speakers of this language are elderly people. This work has mainly been carried out in the community of Santo Domingo de Guzmán, as this is the community that has the greatest number of Náhuat speakers.

Nine women from this community have been trained to work as teachers. Children aged three to five years attend this nursery and mainly come from households with at least one speaker of the language; that being the case, when they return home after the sessions, they can interact with an older member of the family.

The programme is designed to offer total language immersion. Consequently, from the moment the children step foot in the nursery, only Náhuat is spoken. Spanish is only used in emergencies.

The official curriculum of the Ministry of Education has been adapted to be taught in Náhuat, allowing the children to leave school having learned not only the language but also the content specified by said Ministry.

One of the most important achievements has been to enhance the status of women, as the women who received the training went from being potters or housewives to being teachers, which has prompted other adult and young women to want to become Náhuat teachers too.

This project managed to overcome the early obstacles it encountered, such as a lack of interest among the community in revitalizing the language, limited financial resources, a shortage of trained teachers, a lack of suitable premises and a lack of teaching materials.

The Náhuat Nursery has had a big impact on the community, with social and educational benefits, as the children start school with more skills and achieve better performance levels. Key to this project's success has been the aspect of working with the community. The university did not impose the nursery on the community; rather, the initiative was a joint effort.

4.8 Processes of empowering indigenous and Afro-descendant languages on the Nicaraguan Caribbean coast. Presentation by Edgar Salazar Francis, URACCAN Intercultural University, Nicaragua.

For historical and geographical reasons, the indigenous peoples of Nicaragua are divided into two areas: there are some groups in the Pacific region and the central and northern parts of the country, and others on the Caribbean coast. The majority of the Afro-descendant population lives in Nicaragua's Caribbean region.

In the Caribbean, languages present include the Miskito, Mayangna - Sumu, which includes the variants of Panamahka, Tuahka and Yusku, Ulwa, Rama, Creole (Kriol) and Garifuna.

In 2015, the self-government regime for the citizens of the Nicaraguan Caribbean coast had been in place for almost 30 years. During this period, intercultural bilingual education has been implemented, always pursuing an educational model that respects the ethnic, cultural and linguistic diversity of the indigenous and Afro-descendant communities.

Nicaragua has enacted an array of laws to protect the rights of indigenous and Afro-descendant peoples. In 1980, Decree-Law 571 on Education in Languages of the Nicaraguan Caribbean Coast was issued and, in 1993, the Languages Act was published, giving official status to all the languages of Nicaragua.

With regard to higher education, the country has two intercultural indigenous universities, which aim to support processes of self-management and development, while also promoting debate and the generation of ideas, as well as the formulation of proposals for rational and sustainable management of the region's natural resources; this is done taking into account the rights of the coastal peoples and through linguistic and sociocultural strengthening and empowerment.

URACCAN University, for example, played a key role in leading the process of building the Regional Autonomous Education System (SEAR), through the Institute for Linguistic Promotion and Research and Cultural Revitalization (IPILC/URACCAN). SEAR was incorporated into the General Education Act as a subsystem of the national education system.

SEAR is a major achievement, as it is considered a political platform for the Autonomous Regions in the area of education and provides an alternative model of education for the Nicaraguan Caribbean coast, implemented with the participation of men and women from the coastal regions, incorporating their interests, language needs and cosmovisions.

The work of SEAR is aimed at training teachers in indigenous and Afro-descendant languages, as well as offering bachelor's and master's degrees in intercultural bilingual education. It also makes changes to the curriculum, adapting it to the reality of the indigenous and Afro-descendant communities, and designs and produces texts and materials in line with the new curriculum in indigenous and Afro-descendant languages.

Regarding the use of information and communication technologies, with help from the private sector, computers and Internet access have been provided; technology rooms and laboratories are also available at the universities. However, there are many limitations, for example, Internet use is increasingly challenging for indigenous peoples, as the software is in other languages, which hinders practical uses, there is a shortage of equipment and there is no real commitment from the central government to take ICTs to educational establishments.

4.9 Experience of civil society and academia in promoting Mayan languages through education portals: the case of WikiGuate. Presentation by Francisco A Sapón Orellana, Director of Research Management at Rafael Landívar University, Guatemala.

WikiGuate (wikiguate.com.gt) is a collaborative online encyclopaedia dedicated to the free sharing of verifiable information in several of Guatemala's national languages. So far, the website has been translated into Q'eqchi', Mam, K'iche' and Spanish.

This website provides users with four types of content: (1) free online writing courses, with the aim of developing reading and writing skills in the languages, (2) history, (3) geography, (4) articles on active intercultural citizenship and information about communication and language. There are also plans to upload content on physics, chemistry and biology as there are currently few materials available on these subjects.

WikiGuate has a presence across all the most widely used social networks in Guatemala, including Facebook, Twitter, Pinterest and YouTube.

This project was carried out between 2009 and 2010, with the support of the Institute of Linguistics and Interculturality (ILI) and the UNESCO Chair on Communication for the Strengthening of Cultural Diversity. In addition, two of the programmes have been subsidized by German cooperation: the Education Quality Support Programme and the Education for Life and Work Programme.

The website was created to support Guatemalan students and teachers but currently benefits less than one per cent of the users for which it is intended given that once the content is online it is available to anyone anywhere in the world. Moreover, the people who most use it are between 18 and 25 years of age, as that is the age bracket that has greatest access to the Internet.

At first, WikiGuate was visited by one user a day; now it is visited by more than 250,000 users, placing it among the 500 websites most visited by Guatemalan Internet users.

It is worth mentioning some of the lessons learned in the development of this project, such as the need to pool efforts between the public and private sectors and the fact that a multilingual website needs a multilingual and multidisciplinary work team. The support of the Ministry of Education has been fundamental in generating trust among the project's target population.

As this project seeks to stimulate oral communication, the website has an area for the publication of videos, in an effort to democratize content production.

Academia can encourage initiatives to publish content in the country's different languages.

Efforts must move beyond the realm of folklore to establish a place for those languages in a different, critical type of citizenship. Actions that could be taken in this respect include: compiling and sharing information of linguistic relevance; contributing to the development of educational models that promote interculturality; and positioning intercultural content in social media.

To democratize this information, it is essential for all research to be published under Creative Commons licences. This process can be commenced by asking states to commit to making the publications of public institutions open access. That would considerably improve the exchange of information and knowledge.

4.10 Production of didactical materials in indigenous languages and the programme of digital inclusion at UNED. Presentation by Javier Montezuma and Diana Hernández, National University for Distance Education, Costa Rica.

The research project Memories of a Struggle for Official Identification of the Ngäbe People was undertaken between 2012 and 2014 with the aim of recovering the memory of the Ngäbe people's struggle to obtain official identification documents in Costa Rica.

Joint work was carried out between academics from the National University for Distance Learning (UNED) and leaders of the Ngäbe indigenous community. Ngäbe from the indigenous group's five territories took part, recounting their struggle, offering support and sharing their experiences during the period of the struggle.

After the information gathering work, meetings were held to validate the information and obtain the opinions of the members of the community regarding corrections to the language.

The findings of this work were published in a book. One of the most important aspects of the process was the involvement of the community in drafting, checking and correcting the materials produced.

The challenges encountered included the difficulty for the project participants to travel due to the remoteness of their territories and the lack of Internet access. It was also deemed important to prepare audio and video materials, as many members of the community cannot read in their native language.

UNED has a wide range of materials produced in the country's different indigenous languages, which can be accessed in the institution's repository of materials (repositorio.uned.ac.cr).

In addition, the university has launched a digital inclusion project in which public telephones are turned into WiFi hotspots, with the support of the Costa Rican Institute of Electricity (ICE). These hotspots are located in the districts with the lowest human development indices in the country, and provide free, open access to anyone who wishes to use them. Furthermore, for eight years, UNED has been working with open educational resources to make them accessible to as many people as possible.

The institution is also committed to promoting the practice of "presumption", whereby people consume less and produce more. Participating with members of the communities with which the university works has brought very good results, as the communities stop being passive consumers of the materials produced at the university and participate actively in the preparation of those materials.

4.11 Teaching and learning the Rama language, as a cultural identity of Nicaragua.

Presentation by Jorge Erlin Ruiz of the Rama-Kriol Territorial Government, Nicaragua.

The Rama indigenous people live in the tropical forest, on the banks of the rivers and in the coastal areas of south-eastern Nicaragua. Their territory stretches from Río Escondido to Río San Juan, along the border between Nicaragua and Costa Rica. The Rama people is made up of six communities: Tiktik Kaanu, Rama Cay, Sumuu Kaat, Wiring Cay, Bangkukuk and Rio Indio.

The process of teaching the Rama language started with just the existing speakers of the language who were very few in number, at around eight people. An online dictionary (www.turkulka.net) assists with teaching the Rama language and responds to the need to create a system that helps arrange all the linguistic information for learning the language through technology.

The existing speakers of the Rama language help with the teaching-learning process, as the young members of the group are just starting to learn the language. To support this learning, learners can use the online dictionary as well as various printed materials in the Rama language. Four years ago, an interactive game was developed to teach the names of animals, plants, and so on.

There are currently insufficient technological tools or computers in the Rama territory; the only computers are in the offices of the Rama-Kriol Territorial Government, which is the highest executive body that administers the territory.

4.12 Dictionary of the Languages of Honduras. Presentation by Víctor Manuel Ramos of the Honduran Academy of Language.

The creation of a dictionary of Honduran languages is an extremely important project for both the indigenous peoples and the country's national heritage. The initial aim was to provide translations in the seven Honduran languages of Ch'orti', Garifuna, Isleño, Miskito, Pech, Tawahka and Tolupan. However, due to problems communicating with the translators, the complete translations were only obtained in Garifuna, Isleño, Miskito, Tawahka and Tolupan.

This dictionary is just an initial introduction, as languages, like all living structures, are constantly evolving and growing, incorporating new terms to describe advances in social life, science and technology. Therefore, it will be necessary to include new terms and issue new editions.

At first, a basic list of 4,500 everyday words was prepared in Spanish for translation. Complete translations were not produced in all the languages, as some such as Tolupan, Pech and Tawahka are in danger of disappearing, and have a limited surviving lexicon and very few speakers.

The publication of this dictionary will strengthen Honduran interculturalism and recognition of Honduras as a multicultural nation, with diverse origins and people asserting their own identities. Moreover, it is important for the aim of keeping some of these languages alive and revitalizing them.

The Honduran Academy of Language must ensure the continuous improvement of this dictionary, as well as encouraging the translation of the classics of Honduran literature from Spanish into other Honduran languages, in order to strengthen the national identity and the understanding among the population that all the languages form a fundamental part of the national culture and heritage.

The dictionary is available online, on the websites of Miguel de Cervantes Virtual Library, the Virtual Library of the Arts of Honduras, the Languages of Honduras portal together with the Dictionary of Hondurisms and AECID Digital Library (BIDA). Interactive searches can be performed with entries in each of the languages, as well as Spanish. Given the publication standard, the dictionary has the potential to achieve maximum dissemination and visibility on the Internet.

4.13 Intercultural bilingual education in higher education: the case of Francisco Morazán National Pedagogical University. Presentation by Erwin Núñez, Professor of secondary education and business education, Coordinator of the Intercultural Bilingual Education Programme at Francisco Morazán National Pedagogical University, Honduras.

In 2008, Francisco Morazán National Teacher Training University included intercultural bilingual education in the teacher training curriculum. The aim is to reach the majority of communities in the country with indigenous and Afro-Honduran peoples. The bachelor's degree offered by the university is exclusively for teachers working at the first and second levels of schooling.

This programme has a constructivist approach and was developed in conjunction with the indigenous and Afro-Honduran communities. It has an anthropological, epistemological and linguistic conception, which provides the backbone of the syllabus currently being offered, combined with an intercultural approach. It is offered in the communities of Gracias a Dios, Intibucá, Atlántida, Copán and Olancho; in each community, the syllabus is adapted to the local geographical and cultural context.

The student profile is teachers working at the first and second levels of basic education, teachers working at intercultural bilingual schools and basic education centres, and members of indigenous and Afro-descendant communities who have a good command of their native language and culture.

The programme follows a blended learning approach and lasts for four years, split into 12 academic periods. It offers a regionally adapted range of courses, is participatory, collaborative and self-sustaining; self-sustaining means that its funding is provided by the central government and is used to train and qualify teaching staff.

The university sends the students to other universities where they can train as teachers of interculturality and, to date, more than 2,000 people have trained in different areas, always with an intercultural focus.

Final reflections

As stated at the start of this document, the purpose of these contributions is to reflect on the current situation of indigenous languages in cyberspace and best ICT practices for the promotion of multilingualism. The experiences that have been presented demonstrate the substantial efforts being made in different countries and towns to save and preserve indigenous languages. However, they also show that the majority of those efforts are being carried out with very limited resources and, sometimes, without the support of key actors such as the state and the private sector. Consequently, some of the experiences have a limited scope or their sustainability cannot be assured.

Nevertheless, although sometimes marred by weakness and obstacles, these initiatives have had major impacts, especially on children and efforts to preserve endangered languages. In many cases, it has been found that greater commitment from states is needed in order to strengthen projects that seek to preserve each country's linguistic richness and diversity.

The experiences recounted demonstrate the fundamental importance of universities in processes of revitalizing indigenous languages, provided that those processes are approached in a horizontal and participatory manner, as the direct involvement of the indigenous communities generates appropriation and identity around each language.

Another point that is worth highlighting from these experiences is that, in order to be sustainable, they must have state support; it is important for governments to get actively involved, through their specialized institutions, in the processes of revitalizing indigenous languages, to prevent the loss of this great linguistic and cultural richness.

5. PRESENTATIONS OF EACH PANELLIST. Contributions of the panellists to the Road Map

This section presents some of the panellists' contributions to the Road Map, grouped by themes. Of course, this set of experiences in itself represents an important input within the framework of this initiative.

It should be pointed out that several of the panellists highlighted the necessity and importance of promoting the participation of the communities and indigenous people in the development of language and cultural content and information for their populations, in order to always safeguard their identities, needs and ways of life.

Public policies in education:

- Make an inventory of indigenous languages, which is essential to have a clearer picture of the current situation and define more appropriate strategies for action.
- Develop content and publish research in indigenous languages, with the aim of contributing to their dissemination and preservation.
- Promote the participation of indigenous communities in the development of language and cultural content and information for their populations.
- States must develop legislation that recognizes and promotes the use of indigenous languages, with a view to making significant advances in indigenous language education.

- Generate educational content and resources adapted to the contexts of indigenous languages and cultures.
- Consider alternative forms of training for indigenous populations so that they recognize and claim their rights.
- Strengthen intercultural bilingual education (IBE).
- Strengthen community initiatives that aim to revitalize indigenous languages in order to ensure greater ownership by both teachers and pupils and, consequently, more active participation of families.

ICTs:

- Promote research and management of information that links IBE and ICTs.
- Promote access to technologies and their use as a resource for learning.
- Promote policies that reverse the practices of diglossia and cyberglossia.
- Promote access to ICTs in indigenous communities and provide training in their use.
- Strengthen virtual platforms that deal with the production and publication of audiovisual materials in the different indigenous languages, so that that content reaches all people, especially those who cannot read or write.
- Strengthen technological tools that support the study and learning of indigenous languages.
- Strengthen projects that seek, through the use of IT tools, to contribute to the development of indigenous languages.

Universities:

- Increase the budget allocated to the development of intercultural bilingual education, so that educational materials can be produced in all subjects in the different indigenous languages.
- Support university projects that seek to revitalize endangered languages in conjunction with the language communities.
- Strengthen university projects aimed at the all-round training of teachers in intercultural bilingual education, providing them with more and better IT tools, as well as budgetary resources.
- Encourage collaborative work between university research units and indigenous peoples, so that people in the communities can participate actively in preparing and reviewing materials, and do not merely serve as a source of information.
- Highlight the importance of public institutions specialized in the development of teaching and reference materials in relation to the different indigenous languages in each country.
- Raise awareness of the importance of libraries in the protection, promotion and revitalization of indigenous languages, in terms of both their physical spaces and their virtual and technological platforms.

- Strengthen the work undertaken by public institutions in relation to indigenous languages and ensure that such work is increasingly decentralized and offers more opportunities for involvement of the communities.

Public-private partnerships:

- Importance of the public and private sectors joining forces to support educational initiatives related to the promotion and protection of indigenous languages.
- Encourage the production of materials with open-content licences, to facilitate the use and exploitation of the scientific knowledge developed around languages.

6. REGIONAL ROAD MAP TO DEVELOP A REGIONAL ATLAS OF LANGUAGES WITHIN THE CONTEXT OF UNESCO'S WORLD ATLAS OF LANGUAGES

6.1 Recommendations for a Regional Road Map to develop a Regional Atlas of Languages

This set of recommendations was made prior to the Regional Conference for Central America called "*Multilingualism in Cyberspace: Indigenous Languages for Empowerment*". The aim was to guide the preparation of a Road Map to design a Regional Atlas of Languages within the context of UNESCO's World Atlas of Languages, and offer suggestions for the creation of a cyber presence which is open, participatory, inclusive and equitable.

The long-term objective is to contribute to the safeguarding of the world's diverse linguistic and cultural heritage through a global interactive, collaborative and open online platform entitled "UNESCO's World Atlas of Languages" for preservation, monitoring, promotion, and information and knowledge sharing, as well as learning and teaching of languages, with a special focus on use of Information and Communication Technologies (ICTs) for the creation of truly inclusive multilingual societies and Internet.

The below outlined objectives of this initiative will reflect the following actions:

- Establishment of a Regional Task Force on Multilingualism within the context of UNESCO's plans to establish a Global Task Force on Multilingualism which would adopt a human-rights based approach, in terms of gender equality, non-discrimination, geographical representation, and wide outreach to language communities in order to address language issues better in the Post-2015 Sustainable Development Agenda.
- Mobilization of regional and national partners to document, share and disseminate language resources using open and inclusive technological solutions.
- Creation of a unique regional institutional network comprising public and private local, national and regional institutions working in the language field which will collect and share language-related data and information on available language tools and resources within higher educational institutions, archives, museums, libraries and language standardization bodies, as well as keep track of cutting-edge solutions being developed by the private sector.
- Building of national professional and institutional capacity to garner language revitalization and documentation efforts through the use of multilingual web interfaces and collaborative actions and further encouragement of language documentation, monitoring and content development, particularly among indigenous communities.
- Involvement of specific language speaker communities to create their own online space and providing of access to public information in local languages on the Internet.

Following the Universal Human Rights Declaration (1948), and the UNESCO Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace (2003), the Centro-American recommendations for the development of a Regional Road Map might include:

- Taking the necessary measures to alleviate language barriers (1),
- Ensuring that all language speakers can express themselves and have access to cyberspace in all languages, including indigenous ones (1),
- Encouraging and supporting capacity building by Member States and international organizations for the production of local and indigenous content on the Internet (2),
- Formulating appropriate national policies by Member States on including indigenous languages in public information, and in support of survival of indigenous languages in cyberspace (3),
- Promoting language teaching, including mother tongues, in cyberspace (3),
- Encouraging collaborative participatory research and development on, and local adaptation of operating systems, search engines, web browsers with multilingual capacities, online dictionaries and terminologies (4),
- Promoting access to the Internet as a service of public interest (7),
- Facilitating universal access to the Internet through affordable telecommunications and Internet costs with special consideration given to the needs of public service and educational institutions, and of disadvantaged and disabled population groups (8),
- Facilitating community access and reach out to all levels of society (10),
- Encouraging open access solutions including standards, accessibility, portability and interoperability (18),
- Including an open, integrated and intercultural education combined with ICT skills, Media and Information Literacy and other training including awareness of ethical principles and values (19),
- Promote the presence of indigenous languages in university programs and core curricula in indigenous languages.
- Fostering new partnerships and synergies among different stakeholders for joint actions.

6.2 Recommendations for a Regional Road Map to design a Regional Atlas of Indigenous Languages

Based on the recommendations and guidelines set out above, the experts who took part in the Regional Conference made a series of recommendations to be used as inputs for preparation of the proposed Regional Road Map to design a *Regional Atlas of indigenous Languages*, in the context of UNESCO's World Atlas of Languages. This input was generated from parallel round tables on the four areas defined, namely:

1. development of multilingual content and systems;
2. facilitation of access to networks and systems;
3. development of public domain content;

4. reaffirmation of the equitable balance between the interests of rights-holders and public interest.

Next, the results of the work of the parallel round tables is presented in a summary table that includes information about: thematic areas and actors (government; academia and educational institutions; communities and civil society; international organizations; industry and the private sector), distinguishing two periods: the short term (Phase 1): 2016-2017; and the long term (Phase 2): 2018-2019.

6.2.1 Development of multilingual content and systems

In accordance with the UNESCO Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace (Resolution 32C/15)²: “1. The public and private sectors and the civil society at local, national, regional and international levels should work to provide the necessary resources and take the necessary measures to alleviate language barriers and promote human interaction on the Internet by encouraging the creation and processing of, and access to, educational, cultural and scientific content in digital form, so as to ensure that all cultures can express themselves and have access to cyberspace in all languages, including indigenous ones”.

On this basis, the following objectives were defined for the dialogue:

Objectives:

- Obtain information about the state of the production of indigenous language content in cyberspace in Central America.
- Ascertain the penetration of Internet access and the resultant changes in indigenous communities.
- Gain a picture of the appropriation of information technologies and the state of production of content in cyberspace by indigenous communities.

The results of this dialogue are set out in the following table:

² The full text of the Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace can be consulted at: <http://unesdoc.unesco.org/images/0013/001331/133171e.pdf>. In this report, only a few paragraphs are included, in order to contextualize the subject.

Actors/Areas	Period (2 phases)	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
<p>Development of multilingual content and systems</p>	<p>Short term (Phase 1): 2016-2017</p>	<p>Establish an interdisciplinary Network of work teams to produce regulations and a code of ethics to align aims of researchers with those of the communities.</p> <p>Contact bodies that gather linguistic data, to increase the amount of data.</p> <p>Propose strategies to strengthen the future of indigenous languages.</p>	<p>Training and capacity-building to strengthen the link between academia and the communities.</p> <p>Train external researchers according to ethical guidelines.</p> <p>Establish strategies and protocols for the consultation of indigenous peoples.</p> <p>Propose strategies for gathering knowledge about indigenous languages.</p>	<p>Set up a local board in each language community that can guide and make recommendations for each language.</p> <p>Promote the active participation of language communities to ensure that the Atlas is useful and of benefit to the communities.</p> <p>Promote strategic consultations in indigenous communities to involve them in the process of putting together the atlas.</p>	<p>Perform a diagnosis of the needs of indigenous languages.</p> <p>Prepare a work plan that includes an exhaustive report on the current situation of the languages, according to content.</p> <p>Propose consultation and knowledge gathering strategies.</p>	<p>Contact bodies that collect linguistic data, with the aim of gathering as much information as possible.</p>
	<p>Long term (Phase 2): 2018-2019</p>	<p>Include better questions in censuses, that more clearly reflect the situation of languages in each country.</p> <p>Funding and financial support for community projects.</p>	<p>Training and capacity-building in indigenous communities to establish an exchange between academia and indigenous knowledge.</p>		<p>Make a central repository of information from the Network, where all the work files generated in each country (the Network and UNESCO) are deposited.</p> <p>Set up an international observatory to monitor the conservation of indigenous languages.</p>	

6.2.2 Facilitation of access to networks and systems.

In accordance with the UNESCO Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace (32 C/Resolution 15): “6. Member States and international organizations should recognize and support universal access to the Internet as an instrument for promoting the realization of the human rights as defined in Articles 19 and 27 of the Universal Declaration of Human Rights”.

On this basis, the following objectives were defined for the dialogue:

Objectives:

- Ascertain what access indigenous peoples have to information technologies, comparing the technologies available with those they actually use.
- Recognize problems and challenges for access to cyberspace and, hence, the production of content.
- Recognize good practices and successful cases in the access and appropriation of information technologies in indigenous communities.
- Ascertain the penetration and appropriation of information technologies in indigenous communities.
- Recognize ideas and initiatives to foster the penetration and appropriation of information technologies in indigenous communities.

The results of this dialogue are set out in the following table:

Actors/Areas	Period (2 phases)	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
Facilitation of access to networks and systems	Short term (Phase 1): 2016-2017	<ul style="list-style-type: none"> – Incorporate the data collected by the national censuses of each country on the subject of indigeneity. – Promote state coordination in order to have a clear position for decision-making regarding the 	<ul style="list-style-type: none"> – Include the bilingual, multilingual and plurilingual cultural dimension in teacher training. – Articulate technologies to develop the education of adults from indigenous communities. – Establish technical links with university 	<ul style="list-style-type: none"> – Incorporate more audiovisual materials and information, including photos, videos, maps, and data about territorial area, number of inhabitants, etc., which are endorsed and, where possible, have been prepared by the indigenous communities. 	<ul style="list-style-type: none"> – Prepare a map of indigenous language actors and invite them to participate in and contribute to the Atlas. – Evaluate whether, in the case of indigenous languages, incorporating intelligent systems is actually the most 	<ul style="list-style-type: none"> – Work with companies such as Google, Wikipedia and Firefox, which are developing content for searches in indigenous languages.

Actors/Areas	Period (2 phases)	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
		grammar of indigenous languages (Phase 1).	programmes that develop research and programmes related to indigenous languages and multiculturalism.	<ul style="list-style-type: none"> – Build links with language academies (which, in many cases, are civil society associations) so that they share information that could be incorporated into the Atlas. 	<p>appropriate approach (as the richness of the spoken language could be lost when translated to text).</p> <ul style="list-style-type: none"> – Organize a portal for posting links to pages with key information about indigenous communities. 	
	Long term (Phase 2): 2018-2019		<ul style="list-style-type: none"> – Propose a policy for formulating projects and, through schools, collect and strengthen information about indigenous languages³. 	<ul style="list-style-type: none"> – Create an indigenous fund to finance Internet connections for indigenous communities. – Make proposals for non-formal education for indigenous populations, to make education more accessible and offer formats that are more viable and relevant for indigenous communities. 	<ul style="list-style-type: none"> – Incorporate languages that are not yet in the Atlas (as it takes on average three years to incorporate a language). 	<ul style="list-style-type: none"> – Promote greater Internet access in indigenous areas, through viable and sustainable staggered programmes with telephone companies, or other companies that can increase coverage in those areas.

³ All the Ministries of Education and Ministries of Culture belong to SEC-SICA , and SICA (Central American Integration System) has funds that could be used to support this project.

6.2.3 Development of public domain content.

In accordance with the UNESCO Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace (Resolution 32C/15): “15. Member States should recognize and enact the right of universal online access to public and government-held records including information relevant for citizens in a modern democratic society, giving due account to confidentiality, privacy and national security concerns, as well as to intellectual property rights to the extent that they apply to the use of such information. International organizations should recognize and promulgate the right for each State to have access to essential data relating to its social or economic situation”.

On this basis, the following objectives were defined for the dialogue:

Objectives:

- Recognize actors and partners for the development of the Road Map.
- Ascertain the current situation regarding the development of online content.
- Ascertain what resources are currently available, and what initiatives, projects and other processes are motivated to generate online content that could be used for continuation of the Road Map.
- Recognize good practices and successful cases in the generation of content about indigenous languages.
- Recognize ideas and initiatives to foster the creation of public domain content and protect cultural heritage.

The results of this dialogue are set out in the following table:

Actors/Areas	Period (2 phases)	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
Development of multilingual content and systems	Short term (Phase 1): 2016-2017	Acknowledge indigenous knowledge as knowledge rather than folklore. Encourage the creation of radio and television content in indigenous languages. Articulate, finance and support local	Develop academies for all national languages. Support research into indigenous languages and ICTs. Develop a strategy that facilitates access to document repositories for indigenous students.	Consult and involve the communities so that the information comes from the context of the communities and is authorized, sustainable and reappropriated. Identify appropriate, widely recognized representatives in all areas: school,	Incorporate interactive and participatory content so that indigenous knowledge can be learned in a practical way. Support research into indigenous languages.	Respect the knowledge of indigenous populations beyond its monetary value. Adapt and develop software and hardware to accommodate the alphabets of

Actors/Areas	Period (2 phases)	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
		<p>technology-related initiatives (micro-funds).</p> <p>Publicize, through the media, the regulations and laws developed by local, regional and national governments.</p> <p>Incorporate recognition of multinationality and multilingualism into the Constitutions of all states.</p>	<p>Develop social action programmes to teach information skills that facilitate access to content.</p> <p>Establish quota systems for access to higher education for the indigenous population and support programmes.</p> <p>Promote scholarships for a variety of university degrees: linguistics, social media management, indigenous communications specialists, commentators, writers, journalists, systems engineers, cultural mediators.</p>	<p>community, women's organizations, etc.</p> <p>Promote appropriate situations and processes from, by and for indigenous communities.</p> <p>Ensure that work in communities is a joint and collaborative effort.</p> <p>Work on the dissemination and prior approval of content.</p> <p>Work with indigenous representatives and leaders, also considering collectives, their decisions and consensus.</p> <p>Identify audiences: children, adolescents, young people, male and female adults.</p> <p>Consult civil society regarding open content and work according to suitable protocols to obtain appropriate content.</p> <p>Restrict knowledge that is not in the public domain, respecting that some knowledge should remain at the community level only.</p>	<p>Support training in indigenous languages and use of ICTs.</p>	<p>indigenous languages.</p> <p>Establish partnerships with the private sector for access to, training in and promotion of indigenous languages.</p>

Actors/Areas	Period (2 phases)	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
				Properly identify the legitimate bearers of knowledge.		
	Long term (Phase 2): 2018- 2019		Develop curriculum frameworks for each people. Educate indigenous and non-indigenous students through an intercultural approach. Create opportunities for professionalization and job opportunities for indigenous people.		Encourage the translation of literary works from and into indigenous languages.	

6.2.4 Reaffirming the equitable balance between the interests of rights-holders and public interest.

In accordance with the UNESCO Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace (Resolution 32C/15): “23. Member States should undertake, in close cooperation with all interested parties, the updating of national copyright legislation and its adaptation to cyberspace, taking full account of the fair balance between the interests of authors, copyright and related rights-holders, and of the public embodied in international copyright and related rights conventions”.

On this basis, the following objectives were defined for the dialogue:

Objectives:

- Promote the protection of human rights through the production of indigenous language content and the preservation of indigenous languages.

The results of this dialogue are set out in the following table:

Actors/Areas	Period (2 phases)	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
Development of multilingual content and systems	Short term (Phase 1): 2016-2017	<p>Set up a critical regional round table to address rights with the aim of deepening understanding of the subject and generating ideas for its multidisciplinary treatment.</p> <p>Establish a protocol for the archiving and preservation of indigenous knowledge.</p> <p>Involve governments in preparation of the Atlas.</p>	<p>Define content about the scope of the intellectual rights of indigenous peoples.</p> <p>Assess whether intelligent systems are appropriate and adapted to the different indigenous cultures.</p>	<p>Set up a critical regional round table to address the issue of the risk of commercializing indigenous knowledge and guide its multidisciplinary treatment.</p> <p>Set up an indigenous community body to oversee protection of the rights of indigenous peoples.</p>	<p>Promote the dissemination of the Atlas among indigenous peoples in the countries of the region.</p> <p>Set up a free, secure and reliable server, where information can be protected and kept safe; indigenous peoples will validate how the information can be used and such use will require their consent.</p> <p>Set up a permanent forum (UNESCO, WIPO) to work on the intellectual property rights of indigenous peoples.</p>	<ul style="list-style-type: none"> Set up a fund with resources from businesses that use information from the Atlas.
	Long term (Phase 2): 2018-2019	<p>Promote the incorporation of legislation that protects the intellectual property rights of indigenous peoples, in countries where this is not yet regulated.</p> <p>Encourage legal reforms that lead to greater Internet access for indigenous populations.</p>	<p>Set up a permanent regional observatory for Central America to discuss and encourage actions that promote knowledge about the intellectual property rights of indigenous peoples.</p>		<p>Set up a special fund, supported by the initiatives of UNESCO, WIPO and the national states, as well as the information and communication technology industry, to foster work with professionals and leaders with knowledge in this field, to ensure that the work carried out is effective.</p>	<ul style="list-style-type: none">

7. CONCLUSIONS AND FINDINGS

The Conference was an opportunity to hear a large number of varied experiences geared towards saving and preserving indigenous languages in the Mesoamerican region. This sharing of experiences also highlighted several relevant aspects that will serve as key inputs in the preparation of the draft Road Map for Central America.

One of the main aspects that was mentioned is that interest from the state is essential for the development of public policies that promote respect for and recognition of indigenous cultures and the use of the different indigenous languages. It was also pointed out that it is fundamental for states to define policies and strategies for education and contextualization of education curricula, so that they can be differentiated according to the characteristics of indigenous peoples.

The need to stimulate the dissemination of the cultures of the region's indigenous peoples was stressed, as was the fact that this should be done in a manner that respects and strengthens the rights of indigenous peoples, their identities and customs, especially with regard to the forms of generating and transmitting their knowledge. The frequent error committed by different actors in failing to consider these aspects when entering into relationships with indigenous populations was underlined.

One aspect that was identified as extremely positive is the role of education in this whole endeavour. That gave rise to the recommendation on the need to continue strengthening and implementing educational establishments for indigenous communities and indigenous language teaching processes, with the participation of indigenous teachers who speak the local language. In addition, it was mentioned that teacher training, and the provision of tools that promote viable and contextualized teaching, is a good practice that should be replicated.

It was noted that encouraging indigenous populations to take part in the process would contribute to the development of the Atlas and the accuracy of the information gathered. Along the same lines, it was pointed out that the indigenous population should be empowered to demand its economic, social and political rights and, therefore, access to information, an electricity supply, use of ICTs, and Internet connection and coverage. To achieve greater progress in this respect, resources must be managed to make the projects proposed for indigenous communities viable.

One of the most important conclusions concerns the need to consult indigenous populations regarding what information can be shared and what would be important to disseminate about their language and culture. This is because, in many cases, inaccurate information is circulated and also because there are cultural positions that restrict some information that it is considered should remain exclusively within the culture in question. In other words, thought must be given to the rights of indigenous peoples over their culture and knowledge, and ways of sharing them. To achieve that, it is considered important for indigenous communities to organize themselves and define the possible conditions of the processes of promoting indigenous languages.

Finally, an important aspect that was mentioned was the coordination of efforts between the different actors (state, civil society, private sector and international organizations), to make the projects more viable and sustainable over time.

8. ANNEXES

ANNEX 1

RESULTS. PARALLEL SESSIONS

1.1 Group number 1. Development of multilingual content and systems

Basic principle

- indigenous communities must be active and participate to mobilize the community and help raise awareness among their members, to ensure that the Atlas is useful and of benefit to the communities.

To be taken into account

- All the languages spoken in a community context in each country should be included (migrant and sign languages).
- Proposal to prepare a project outline for an Atlas of Languages in Central America.
- It is considered necessary to establish forms of monitoring policies, the state of the languages and a road map towards the Atlas.
- As the Atlas is global, it will be descriptive, which will allow it to contain information that could even influence national legislation.

General suggestion for UNESCO

- UNESCO's broad outline should take into account: the history of the languages, grammar and phonology, cultural identity, culture, language censuses, language maps, indigenous rights, the impact of languages and political impact.

Questions to UNESCO

- How will the coordination work be organized in each country?
- What is the role of the Network and what is the role of the coordination team?
- How will the financial resources for putting together the Atlas be organized?
- Will there be other meeting spaces to follow up this work?

Shared agreements: DEVELOPMENT OF CONTENT

1. Active network of contacts and joint work.
 - (a) With shared regulations and ethical vision.
 - (b) Code for liaising with the communities.
 - (c) Steering committee.
2. Internal work plan for the group, CONTENT.
 - (a) Documentation of constructions, experiences and results (state of the art).
 - ✕👤 Use the outline already prepared by UNESCO.
 - ✕✕👤 Based on the experience of each body.

- (b) Regionalize and localize the contexts.
 - (c) Communication from UNESCO to the governments to encourage recognition of this Network and support the dialogue.
 - (d) Include ancestral wisdom as content.
 - (e) Development and design tools that make it possible to take a census of the people's linguistic stages.
3. Capacity-building and training to strengthen links:
- (a) Training of members of the communities.
✕📖 In the spectrum of spoken forms.
 - (b) Interaction between academia and community knowledge.
✕📖 Joint work with older members of the communities.
 - (c) Train external researchers
✕📖 To avoid colonial research practices.
4. Strategies for gathering knowledge:
- (a) Strategies for feeding back results and continuity.
 - (b) Include ancestral wisdom and cultural traditions.
 - (c) Prepare diagnoses of the ways in which languages are spoken and used.
 - (d) Review and include other surveys or forms of periodic data collection (school censuses, education censuses, household censuses, state-of-childhood surveys, and similar), as these instruments could include information about multilingual aspects.
5. Set up an observatory within the Atlas:
- (a) Incorporate monitoring functions into the Atlas.
 - (b) Create monitoring tools.
 - (c) Monitoring of actions and proposals.

Actors/Areas	Platform	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
Period (2 phases)		Short term (Phase 1): 2016-2017 The majority of actions will be completed in the short term			Long term (phase 2): 2018-2019	
Development of multilingual content and systems	ATLAS	<p>Should back this Network</p> <p>Include better questions in censuses</p> <p>Capacity-building and training</p> <p>Establish a consultation strategy</p> <p>Funding and financial support</p> <p>Contact bodies that collect linguistic data</p>	<p>Capacity-building and training to strengthen links</p> <p>Train external researchers</p> <p>Consultation and language documentation strategies</p> <p>Contact bodies that collect linguistic data</p>	<p>Language communities that are active and participate, to ensure that the Atlas is useful and of benefit to the communities</p> <p>Establish a consultation strategy</p> <p>Strategies for documenting languages</p>	<p>NETWORK and UNESCO</p> <p>(make a central repository of information from the Network)</p> <p>Work plan according to CONTENT</p> <p>Current situation of the languages</p> <p>Consultation and knowledge gathering strategies</p> <p>Contact bodies that collect linguistic data</p>	<p>Seek partnerships to raise financial resources</p> <p>Contact bodies that collect linguistic data</p>

1.2 Group number 2. Development of multilingual content and systems

Development of multilingual content and systems

(Language data Collection)

Basic information:

Definition of "Language Data Collection": collection of data about languages.

* "Language Vitality and Endangerment" (LVE) questionnaire to identify endangered languages

Questions to guide the dialogue.

Questions, Expected goal/outcome

What is Language Data Collection?

Introduction, context

Language Data Collection consists of compiling information about pre-Hispanic history, history since the conquest, documents written in old Spanish, Portuguese or English by priests or indigenous people who had been taught to read and write in the aforementioned languages, recording the stories told by their ancestors, or documents written in stone or another material. The chiefs or leaders of the ethnic groups and learned members of their communities may have the necessary knowledge to translate and interpret their languages.

What do we know about the state of indigenous languages in Central America in relation to cyberspace and information technologies?

Obtain information about the state of the production of content in indigenous languages in cyberspace in Central America

In research undertaken in El Salvador, Honduras, Nicaragua and Costa Rica, content production is minimal due to a lack of research into their languages. National laws are needed to promote research, documentation and development of indigenous languages, as well as an institution that determines the linguistics of each language.

The case of Guatemala.

Article 143 of the Constitution of the Republic of Guatemala states that Spanish is the official language and vernacular languages are national heritage. Moreover, the Constitution contains three very important articles:

Article 66 - Protection of ethnic groups. Guatemala is made up of various ethnic groups including indigenous groups of Mayan descent. The state recognizes, respects and promotes their ways of life, customs, traditions, forms of social organization, indigenous dress, languages and dialects.

Article 75 - Literacy. Literacy is declared of national urgency and it is a social obligation to contribute to it. The state must organize and promote it with all necessary resources.

Article 76 - Education system and bilingual teaching. Administration of the education system must be decentralized and regionalized. At schools in areas with a predominantly indigenous population, teaching should preferably be delivered bilingually.

The introduction (page seven) to the Linguistic Atlas of Guatemala by Michael Richards, produced in collaboration with Rafael Landívar University and published in 2003, explains that:

"[a]s a result of the signing of the Peace Accords in December 1996, the Commission for the Officialization of Indigenous Languages of Guatemala (COINGUA) was set up, with a series of commitments being established in the Accord on Identity and Rights of Indigenous Peoples, which was rendered official by Government Order No. 308-97 of 10 April 1997."

It goes on to say that: "[t]hat Commission issued several key recommendations that should be implemented in order strengthen and promote the indigenous languages of Guatemala. One of those recommendations was precisely to 'undertake the language census with linguistic and sociolinguistic criteria to understand the reality of the country'" (1999: 72). A lightly taken decision, like that described above, the basic aim of which was to save on costs, resulted in the linguistic data obtained from the census being almost unusable; it was impossible to place 'who speaks what and where', generating the subsequent cost of having to repeat the process of typing out the section corresponding to the languages spoken in Guatemala.

In Guatemala, bilingual education is a necessity and different laws encourage its implementation, although those laws are only partially enforced. The educational infrastructure requires considerable investment to be able to comply with this public policy; thousands of additional teachers are needed to meet this demand, and there are insufficient pedagogical, financial and educational resources to implement a National Bilingual Education Plan in Guatemala's 24 languages.

Article 7 of the National Languages Act, Legislative Decree 19-2003, states that "[i]t is the responsibility of the Executive and its institutions, in coordination with the autonomous and decentralized bodies, to effectively implement the policy for the promotion, recognition, development and use of the Mayan, Garifuna and Xinka languages as set out in this Law". This provision is reinforced by Article 54 of the National Education Act, Decree 12-91. Definition. Distance education delivers education to people who are distant from the study centre, through the use of various systems that are registered, approved, coordinated and supervised by the corresponding department.

The aforementioned laws are complemented by the provisions of Article 5 the Academy of Mayan Languages Act, Decree 65-90. Purview. b) Study and propose procedures and strategies that favour and strengthen the use, promotion, officialization and unification of each of the Mayan languages. c) Set up and promote centres for teaching Mayan languages in the language communities and promote the teaching of those languages in other educational establishments in the Republic. e) Fully support the bilingual education implemented by the state in accordance with its remit.

The above provisions have contributed to a variety of innovatory initiatives in both the public and private sectors in relation to cyberspace: the launch of WikiGuate; the Academy of Mayan Languages website includes an online dictionary and systems for learning some languages; members of the indigenous community in Sololá have set up a Facebook page in K'iche'; tutorials to learn some Mayan languages and grammar; our institution, AICILICOM, is now proposing the development of a Mayan language translator.

Have any major changes been observed in the use of language among indigenous peoples following the introduction of information technologies and Internet access?

Of course, their vocabularies need to incorporate click, Facebook, tweet and a range of new words that have no translation in the languages.

Are we seeing a response from the speakers of language communities to the media and new technological changes?

Ascertain the penetration of Internet access and the resultant changes in indigenous communities.

This is mainly observed with telephones, where users install different applications for communication, play, work and entertainment.

Are materials for language and literacy education available online?

In El Salvador, Honduras, Nicaragua, Costa Rica and Belize, there are limited materials, but sufficient for traditional teaching, which can be used if they are in electronic format.

In Guatemala, there are sufficient materials in the 24 national languages.

What is the quality and quantity of the documentation available online about indigenous languages?

Gain a picture of the appropriation of information technologies and the state of production of content in cyberspace by indigenous communities.

The quality and quantity of documentation in the aforementioned countries is not known. In the case of Guatemala, the quality and quantity of documentation online and to upload is very good.

What strategies can be implemented to increase the production of online content in indigenous languages?

Recognize ideas and initiatives to foster the penetration and appropriation of information technologies in indigenous communities.

Learn about the history of the languages, their origin, create a language map, obtain statistics of speakers of the language, know their stories, tales, legends and any materials that comprise their culture.

Steps towards a regional road map

In order to prepare a road map for the development of multilingual content and systems, the Central American countries need to be organized into groups:

- (1) Countries with experience in the development of indigenous languages.
- (2) Countries without experience in the development of indigenous languages.

The countries with experience must support the other countries with:

- (1) Organizing their language communities.
- (2) Regionalizing their language communities.
- (3) Developing geographical language maps.

- (4) Support with constitutional reforms and/or legislation in favour of national languages.
- (5) Regulating the laws approved for their development.

1. Countries with experience in the development of indigenous languages.

Case of Guatemala.

Short term

Phase 1: 2016-2017

Government

Ensure enforcement of the laws introduced and follow up the strategies established.

Academia and educational institutions

Coordinate actions in order not to duplicate them and achieve the goals set; if there is no long-term strategy for this, develop one and complement it with the plans established.

Communities and civil society

Language communities and civil society must integrate for the educational development of children and adults. They must also work to meet the goals set by the government, the Ministry of Education, the Academy of Mayan Languages, Rafael Landívar University and University of San Carlos of Guatemala.

International organizations

Set up a committee with the international technical experts from the Regional Conference for Central America on Multilingualism in Cyberspace, to develop a work agenda to contribute to what remains to be done.

Industry and private sector

The development of a Mayan language translator will benefit the private sector and industry by enabling them to converse directly with the language communities in their own languages. It will also enable indigenous people to conduct business directly, without national or international intermediaries, thus increasing the revenue they receive in exchange for their products.

All the above-mentioned actors must be made aware of the need to develop the Mayan language translator, given the advancement of technology and the support that all the language communities need, for both studies and the practice of each of the Mayan languages, to improve medical, judicial, educational, business and tourism services and development in general.

Long term

Phase 2: 2018-2019

Each of the aforementioned actors must see the results and the product thereof.

2. Countries without experience in the development of indigenous languages.

Case of El Salvador, Honduras, Nicaragua, Costa Rica and Belize

Short term

Phase 1: 2016-2017

Government

Make the authorities of the day aware of the importance of indigenous languages and the fact that indigenous people have the right to communicate in their native tongue. The state must protect the interests of all citizens and ensure that people are not divided into classes or social hierarchies; indigenous people have the same rights as *Mestizos* or *Ladinos*. The state must meet the needs of indigenous peoples and, if possible, should communicate with them in their native languages, throughout the state service system, as well as discovering and maintaining their ancestral wisdom and culture for the enrichment of the nation.

Academia and educational institutions

If there are no academies for native languages and the Ministry of Education does not take indigenous languages into account, it will be necessary to raise awareness of the needs of indigenous people and the fact that they are not second-class citizens. Encourage indigenous chiefs or leaders to organize as language communities.

Communities and civil society

If language communities are formed, they must be supported by the government, the Ministry of Education, universities, international organizations and civil society organizations in order to become integrated into a national plan for language development. Care must be taken to ensure that the goals established by the community are met. The objective will be more easily achieved if the community is formed as an international organization.

International organizations

Set up a committee with the international technical experts from the Regional Conference for Central America on Multilingualism in Cyberspace, to develop a work agenda to complement the regional and national objectives.

Industry and private sector

Industry and the private sector can benefit from qualified labour, with staff who identify as indigenous and can speak multiple languages. The training of a Mayan language translator will benefit the private sector and industry by enabling them to converse directly with the language communities in their own languages. It will also enable indigenous people to conduct business directly, without national or international intermediaries, thus increasing the revenue they receive in exchange for their products.

Long term

Phase 2: 2018-2019

An action plan must be developed to verify that the proposals are actually being carried out and to determine the impact on the government, institutions, academies, university, industry and civil society, but, most importantly, that they are being accepted by the communities and what benefits they are gaining from them. This will make it possible to integrate into cyberspace the research work and other tools for using ICTs.

Towards UNESCO Guidelines on Language Policies: a Tool for Language Assessment and Planning

The LVE identifies the following nine criteria ("factors") which are used to determine the degree of vitality/endorsement of a language and develop measures for its maintenance or revitalization.

1. Intergenerational language transmission
2. Absolute number of speakers
3. Proportion of speakers within the total population
4. Trends in existing language domains
5. Response to new domains and media
6. Availability of materials for language education and literacy
7. Governmental and institutional language attitudes and policies, including official status and use
8. Community members' attitudes toward their own language
9. Amount and quality of documentation
- *10. Indigenous language translator

*Added by AICILICOM.

Objectives:

The objective of this meeting of experts is to develop a tool that will enable UNESCO's Member States to assess the language situation in a local or national context and, based on that assessment, develop and implement appropriate language policies and measures.

More specifically, the meeting will review the use that has been made of the LVE questionnaire over the past eight years, taking account of the critical comments and suggestions, and will propose revisions and enhancements.

The language vitality factors presented above will be considered during the meeting in four clusters, based on their primary relevance to a particular area of UNESCO's mandate, as follows:

- Factors 1, 4 and 5, centred on intergenerational transmission, and on the ever-increasing relevance of information and communication technologies (ICTs), including Internet and media (particularly public service broadcasting);
- Factors 7 and 8, focusing on language attitudes, policies, status and use;
- Factors 2 and 3, which concern numbers of speakers of endangered languages; and
- Factors 6 and 9, focusing on education, literacy and language documentation.

1.3 Group number 3

Areas/Actors	Platform	General criteria	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
Period (2 phases)	ATLAS		Short term (Phase 1): 2016-2017				
Development of public domain content		<p>Acknowledge indigenous knowledge as knowledge rather than folklore.</p> <p>Interactive and participatory content.</p> <p>Civil society should be consulted regarding open content and content limited to specific audiences.</p> <p>Some knowledge is not in the public domain and should be restricted. Some should remain at the community level.</p>	<p>Encourage the creation of radio and television content in indigenous languages.</p> <p>Articulate, finance and support local technology-related initiatives (micro-funds).</p> <p>Publicize, through the media, the regulations and laws developed by local, regional and national governments.</p> <p>The countries' founding documents (Constitutions) must recognize multinationality and</p>	<p>Develop academies for all national languages.</p> <p>Universities must develop and support research into indigenous languages and ICTs.</p> <p>Ask universities to give indigenous students access to document repositories about their peoples.</p> <p>Develop social action programmes to teach information skills that facilitate access to content.</p> <p>Establish quota systems for access to higher education for the</p>	<p>Communities must be consulted, authorized and involved, based on their need for and form of knowledge, and guided by the principles of sustainability and reappropriation.</p> <p>Identify appropriate, widely recognized representatives in all areas: school, community, women's organizations, etc.</p> <p>Promote appropriate situations and processes from,</p>	<p>Support research into indigenous languages.</p> <p>Support training in indigenous languages and use of ICTs.</p>	<p>Knowledge has often been monetized as a means of subsistence</p> <p>Knowledge must be respected beyond its monetary value.</p> <p>Adapt and develop software and hardware to accommodate the alphabets of indigenous languages.</p> <p>Partnerships with the private</p>

Areas/Actors	Platform	General criteria	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
		Properly identify the legitimate bearers of knowledge.	multilingualism, and languages must be given official recognition.	indigenous population and support programmes. Promote scholarships for a variety of university degrees: linguistics, social media management, indigenous communications specialists, commentators, writers, journalists, systems engineers, cultural mediators.	by and for indigenous communities. Ensure that work undertaken in the communities is not invasive, but rather a joint, collaborative effort. Work on the dissemination and prior approval of content. Work with indigenous representatives and leaders, also considering collectives, their decisions and consensus. Specify audiences: children, adolescents, young people, male and female adults.		sector for access to, training in and promotion of indigenous languages.

Areas/Actors	Platform	Government	Academia and educational institutions	Communities and civil society	International organizations	Industry and private sector
Period (2 phases)	ATLAS	Long term (Phase 2): 2018-2019				
Development of public domain content			<p>Develop curriculum frameworks for each people.</p> <p>Educate indigenous and non-indigenous students through an intercultural approach.</p> <p>Create opportunities for professionalization and job opportunities for indigenous people.</p>		Encourage the translation of literary works from and into indigenous languages.	

1.4 Group number 4.

In relation to the subject of preparing the Atlas, the question of how to preserve the assets of indigenous peoples arises. This is linked to the theme of the collective intellectual property rights of those peoples. It should be noted that these intellectual property rights should be observed in the process of preparing the Atlas, as language is part of the heritage created by indigenous peoples and, before using such knowledge outside of their native communities or in preparation of the Atlas, the right of consultation must be observed to obtain their consent as, regrettably, daily practice has produced examples of plundering of the knowledge of said peoples, without them receiving any benefits in return. In this respect, UNESCO and WIPO are urged to explore the possibility of setting up a permanent regional observatory for Central America to discuss and encourage actions that promote knowledge, discussion and proposals about the intellectual property rights of indigenous peoples. The experience of countries that already have experience and legislation in this field can be drawn on, with a view to national states legislating on this subject where there is currently no legislation on said rights or, where there is legislation, if necessary, amending it to include and regulate intellectual property rights.

Indigenous peoples.

The question of the fate of indigenous knowledge that is uploaded to the Internet also arose. In this respect, it is pointed out that, nowadays, content that is uploaded to websites or social networks is unprotected, unless it is kept safely on a server for the use of indigenous peoples; however, the company that provides the service is fully entitled to make use of those assets. Hence, the identification of the need for those peoples to be able to have a free, secure, reliable and well-protected server and for any use of it to be with their consent, thus guaranteeing the effective observance of indigenous intellectual property rights. It is important to create these types of protocols for digital files; they can be national or regional servers. It must be taken into account that indigenous peoples are not selling their assets and knowledge; rather, they are for their own use and the use of humanity in general. It would be important to set up a critical regional round table to address this theme with the aim of deepening understanding of the subject and generating ideas for its multidisciplinary treatment. Within this framework of ideas, the possibility has been suggested of setting up a special fund, supported by the initiatives of UNESCO, WIPO and the national states, as well as the information and communication technology industry, to foster work with professionals and leaders with knowledge in this field, to ensure that the work carried out is effective and does not simply remain at the level of an attempt or "mere romanticism" (quoted from the discussions). Within the framework of this protection and safekeeping of indigenous assets, it is envisaged that it will probably be necessary to have a government institution, or a registration unit managed by the peoples themselves, to guarantee said rights. The need to understand and critically study national legislations concerning intellectual property rights is stressed, in order to ascertain whether they provide protection and guarantees in relation to the knowledge and assets of indigenous peoples.

ANNEX 2

Notes on the Regional Conference for Central America

Multilingualism in Cyberspace: Indigenous Languages for Empowerment

27 and 28 November 2015

SESSION 3: PANEL. Legal frameworks for indigenous languages regarding education policies

Rapporteur: Clara M Chu, Director and distinguished professor at Mortenson Center for International Library Programs, University of Illinois at Urbana-Champaign, USA.

Indigenous language teaching in Costa Rica, by Carmen Rojas Chaves, Advisor, Department of Intercultural Education, Ministry of Public Education, Costa Rica.

- Costa Rica has small indigenous populations that do not exceed 20,000 inhabitants.
- There are five living indigenous languages, as well as Nicaraguan Miskito migrants.
- Costa Rica has a law for maintaining and strengthening indigenous languages.
- There is an indigenous language school that teaches indigenous people with different levels of schooling and fluency in the language (as both the first language and a second language).
- There are 133 teachers who speak indigenous languages (64 Cabécar, 37 Bribri, 8 Boruca, 2 Térraba, 2 Maléku, 18 Ngäbere, 1 Buglere, 1 Miskito).
- As there are no reading materials or texts, students cannot take home resources to share with their families.
- The primary school teachers are indigenous but at secondary level not all teachers are indigenous.

Summary: There is still a significant need for educational content and resources. Nevertheless, the law recognizing indigenous languages has catalysed advances in indigenous language education and there is political interest in developing public policies that address the needs of the indigenous population.

Language policies for multilingualism and university training of indigenous teachers in Brazil, by Gilvan Müller de Oliveira, Institute for Research and Development in Language Policy (IPOL), Federal University of Santa Catarina (UFSC), Florianopolis, Brazil.

- Indigenous peoples make up 0.43% of the population of Brazil.
- There are fewer than 3,000 schools and approximately 1,400 teachers, representing 44 indigenous languages.
- All teachers are indigenous.
- A resolution has been passed to allow each people to build its own vision.

- There are social technologies in place to promote multilingualism: municipalities granting joint official status to languages, municipal language censuses, the national inventory of linguistic diversity (INDL) (2010).
- An inventory of the Guarani language has been carried out, as has a survey in which 11,000 respondents participated.
- There are still 190 languages in the UNESCO Atlas of Languages in Danger which are not represented in cyberspace.
- There is no general plan defining goals and there is a lack of coordination in management of the languages.
- An example of a good practice was the introduction of a degree course in the municipality of São Gabriel da Cachoeira, where the Federal University of Santa Catarina (UFSC) transfers to an indigenous community and works with a different methodology adapted to the context, basically through research, avoiding Western subjects and producing research publications in indigenous languages (not about languages).

Summary: This is an example of a good practice for the education and training of teachers, so that they teach from their own culture. The framework for working in this area is that each people can build its own vision.

It is also important to highlight the impact that political interest has on these issues, as policies are being formulated that strengthen indigenous culture and languages.

Challenges of the process of implementing IBE in indigenous territories of the Miskito: "political will vs. demand from the Miskito", by Cirilo Rasio Feldeman, Miskitu Asla Takanka (MASTA), Honduras.

- Indigenous people have been rendered invisible by the government. There are no laws or official policies that support them; there is only ILO Convention 169.
- Intercultural bilingual education (IBE): the Moravian Evangelical Church started working to value and promote the language in the 1940s, however, in the 1950s IBE still had not been followed up.
- In the 1980s, MOPAWI resumed the IBE process.
- In 2012, PRONEEAAH defined the strategies for the implementation of IBE in La Mosquitia. The training modules for IBE teachers and facilitators were commenced in each municipality under the district headquarters.
- In October 2013, DIGEIM and Proyecto EducAcción undertook a preliminary selection of establishments.
- In 2014, the training of teachers and directors of educational establishments began.
- In 2015, IBE is being implemented up to year six in 200 educational establishments.
- Difficulties: teacher turnover, lack of texts, poor communication between teachers and families, poor decision-making.

- Goals: bring about a change of attitude on the part of teachers and authorities regarding the importance of IBE.
- Challenges: train teachers in all territories; the Miskito people have the right to differentiated education. Seventy % of the child population speaks no other language than Miskito so, when they start school, they are faced with language barriers that impede normal learning.
- Challenges: set up an indigenous university or university centres in indigenous communities, make Miskito an official language and set up academies of arts and languages.

Summary: This is a good example of a commitment to develop and offer Miskito intercultural bilingual education and how, with patience, effort and collaboration, the objective can be achieved; the Miskito people have the right to differentiated education.

Intercultural bilingual education and the development of indigenous languages in cyberspace.
Notes on Peru, by Alicia Matta Gonzales, Ministry of Education, Peru.

- Knowing how to use technology is a fundamental skill.
- ICTs are part of practical education and a resource for learning.
- In Peru, there is a lack of information linking IBE and ICTs.
- Technology is a linguistic domain.
- There is a political imaginary of language symmetry; a hierarchical asymmetry between languages.
- A policy is needed to reverse the practices of diglossia and 'cyberglossia'.
- One in ten inhabitants speak an indigenous language.
- There are 47 indigenous languages, and a great diversity and heterogeneity of indigenous languages.
- The digital divide and its causes are diverse, but there is insufficient data on the issue.
- Access to technology is limited, the education received by indigenous peoples is poor quality and is not adapted to their context; therefore, the levels of education of the population are low.
- ICTs are not viewed as a resource because they cannot easily use them.
- Recommendations: use of ICTs, sustainable intercultural approach, bilingual users, target population, training.
- Objective of the Peruvian policy: set symbolic and technical challenges, and establish favourable conditions for more ambitious programmes.

Summary: Knowing how to use technology is a fundamental skill. ICTs are part of practical education and a resource for learning. There is a need for information linking IBE and ICTs, a policy to reverse the practices of diglossia and cyberglossia, greater access to ICTs and training in their use.

Bilingual and intercultural education in Guatemala, by Gutberto Leiva, Deputy Minister for Education, Directorate General for Bilingual Intercultural Education (DIGEBI), Guatemala.

- Garifuna (mother), English (father), Spanish (school).
- The Maya, Garifuna, Ladino and Xinka ethnic groups are present in Guatemala.
- There are four million students in public schools, cooperatives and private establishments.
- In 1967, bilingual education was developed.
- In 1962, a seminar was given at the university for those who would become promoters of bilingual education in 1964.
- For the 2012-2016 period, the Strategic Implementation Plan for Education has been introduced.
- Language is a vehicle for culture.
- In the Ministry of Education, indigenous matters are addressed through a multi-disciplinary approach to secure the commitment of all those concerned.
- In Guatemala, there are 21 colleges that train primary school teachers.
- A training programme is currently being developed at the baccalaureate level.
- Partnerships have been established with companies and ministries in other countries.

Summary: In the Ministry of Education, indigenous matters are addressed through a multi-disciplinary approach that encompasses the entire structure, to secure the commitment of all those concerned.

General summary of the session: Political interest is essential for developing public policies in Guatemala. It is important to undertake research in Peru. Recognition of the Miskito over time is needed in Honduras. Greater empowerment is required to defend the rights of indigenous peoples and allocate resources in both Brazil and Costa Rica.

SESSION 4: Promotion of indigenous languages in cyberspace. Best practices. PART I

Rapporteur: Alicia Matta Gonzales, Ministry of Education, Peru.

Intercultural education in Belize, by Filiberto Penados, Center for Engaged Learning Abroad (CELA), Belize.

Technologies must be considered in intergenerational spaces and for different audiences: young people and older people. In Belize, there is little opening in the regulatory framework; to address this unfavourable situation, two initiatives have been developed:

The Tumul K'in Centre: this centre was developed in an area that had no secondary school; it has Internet and equipment, offers courses to the elderly, and articulates the school with the family and the community.

Gulis Community School (2007): The results achieved by this initiative have been a more critical style of education that has brought about changes. A teachers' conference has also been held, leading to the organization of Mayan spelling competitions. Furthermore, dictionaries and vocabulary lists have been developed. Finally, it contributed to the empowerment of language speakers, not through techniques, but by broadening their critical thinking and reflecting on the role of the holder of knowledge.

The panorama in Belize is marked by associative action and collective work to overcome the state vacuum which, in his view, is the main feature of the education landscape in Belize in relation to indigenous peoples. He also highlights the importance of recognizing cultural identities, for both teachers and students.

Access, preservation and multiple literacies: library and information services to foster the use of indigenous languages in cyberspace, by Clara Chu, Director and distinguished Professor at Mortenson Center for International Library Programs, University of Illinois at Urbana-Champaign, USA.

One of the most important aspects is the use of libraries to ensure the promotion of indigenous languages on four levels: preservation, access, use and collective impact.

With regard to preservation, various initiatives are presented to protect and save written and audio collections, through the concept of "Indigitization".

1. The Living Archive of Aboriginal Language (Australia), which undertakes digital documentation in the community.
2. The Mukurtu initiative, which promotes the development of indigenous cultural protocols and software.
3. The Wikimedia initiative, which promotes a flexible platform for audio and video content.

With regard to access, numerous initiatives are mentioned, such as:

- Sawbo (video platform that provides access to illiterate people).
- LibGuides and online language schools.

With regard to use, the following recommendations are made:

- Develop digital storytelling, as is being done in Australia.
- Encourage the creation in national libraries of meeting places, places of learning and creative spaces with and about indigenous languages and cultures.

Another important aspect is associative action to integrate various institutional and local efforts.

Recommendations for transforming libraries:

- Libraries cannot be sealed spaces, dedicated solely to the written word and for scholars, where indigenous heritage is amassed and extracted.
- Libraries must become places of construction, dissemination and transmission of the heritage of indigenous peoples, where they are the main gatherers of the knowledge, and where that

knowledge is available to reaffirm, transmit and preserve their identity as a valuable form of cultural and linguistic heritage.

The experience of the Academy of Mayan Languages of Guatemala in social networks, by Raymundo Caz, Representative of the Academy of Mayan Languages of Guatemala on social networks.

- The importance of social networks for disseminating and increasing the visibility of indigenous languages.
- In the case of the Academy of Mayan Languages of Guatemala, Facebook is used to publicize administrative, educational and cultural activities for 11 language communities: Itsil, Ixil, K'iche', Poqomchi', Uspantec, Q'anjob'al, Chi'í, Acateco, Aguacateco.

The indigenous language translator, by Julio de León, Association for Linguistic and Scientific Research and Mayan Worldview, Guatemala.

- The indigenous language translator is a tool that translates into four languages: Garifuna, Xinka, Spanish and English.
- The development of this tool involves working on four stages: grammatical integration, analysis, replacement and rearrangement. In addition, the interface is user-friendly.

Intercultural bilingual reality in Honduras, by José Reyniery, Suyapa Educational TV, Tegucigalpa, Honduras.

At the government level, the reality in Honduras is still limited, due to a lack of specific funding. However, dictionaries of new words, and high school certificates, diplomas and bachelor's degrees in IBE have been developed through agreements with universities, textbooks loaded onto tablets and the installation of solar panels.

Suyapa TV is an initiative dedicated to making 15-minute videos with sample classes.

SkwaqGtloG: Revitalization of the Chatino language in cyberspace, by Hilaria Cruz, University of Kentucky, USA.

The revitalization of the Chatino language took place in two phases.

- The first phase was a standardization phase, which took a long time as Chatino is a tonal language. The process of gathering information, identifying the tones and developing a user-friendly spelling system for the tones (differentiated with a dash "-" and a letter, e.g. "ke-c").
- The second phase is a visibility raising stage, using technologies. The speaker mentioned a Google Maps map. The second resource is the "Amigos de la Lengua Chatina" Facebook group. The third are the two available repositories of language documentation.

General overview:

The presentations given show a great diversity of contexts, recommendations and challenges to articulate indigenous languages and technologies through an interactive platform:

- Consider the participation and central role of governments, in terms of initiatives, funding, programmes and regulations.

- Technologies must play a central role in increasing the visibility of indigenous languages, reaffirming their dignity and importance as living heritage.
- Technologies can be used to develop tools to develop literature, such as dictionaries.
- Identification tools, such as virtual maps, are also mentioned.
- All the information gathered about indigenous peoples should be collected with and for the peoples, according to their own cultural protocols. Information must not be extracted, but rather made available to the peoples, as a resource for their past, present and future.
- Special emphasis must be placed on oral culture.
- The alphabets must be disseminated, promoting literature in indigenous languages.
- It should be considered that, in some cases, standardization is a long, delicate and technical process

