

Senior Officials Working Group on Biodiversity and Climate Change

Thematic Report

Elaborated by IRD and COLCIENCIAS

V EU-CELAC Senior Officials Meeting

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1 Objective of the thematic report

- To inform about progress of activities on each Thematic Senior Officials Working Group (SOM WGs), underlining the strategic contribution to the JIRI Roadmap and the EU-CELAC Common Research Area
- To present concrete proposals to be implemented by the WGs in synergy with ongoing related projects and initiatives.
- To forward recommendations for SOM deliberations: i) Ideas to enhance biregional cooperation on R&I and future sustainability beyond lifetime of ongoing supporting projects and initiatives; ii) Reflections towards HORIZON 2020, focused on calls, participant rules & new instruments and opportunities.
- To define next Activity Plan 2016-2017, including concrete actions and resources to be committed.

2 Bi-regional Cooperation Activities in the Biodiversity and Climate Change Area

- **Thematic area background in Latin America, Caribbean and the European Union**

The following is an extract of a more complete study: “Research on biodiversity and climate change at a distance: collaboration networks between Europe and Latin America and the Caribbean”, supported by ALCUE NET (www.alcuenet.eu) and BiodivERSA (www.biodiversa.org) projects, available upon request to ALCUE NET Work Package 5 coleader, IRD (Institut de Recherche pour le Développement).

Biodiversity and climate change both correspond to issues that are relevant at global scale and require skills and research inputs from different countries and disciplines. Evaluating the capacity of research networks at the interface between biodiversity and climate change to develop across continents is increasingly needed in the context of the recent creation of the IPBES and the forthcoming COP21. This issue is particularly relevant for the European Research Area (ERA) and Latin America and Caribbean (LAC) regions as they both harbour a great proportion of the world’s biodiversity and will experience significantly changed climate in the future.

As Europe and LAC countries both harbour a great proportion of the world’s biodiversity (Groombridge & Jenkins 2002) and may experience significantly changed climate in the future including increased climatic extremes (Pachauri et al. 2014), cooperation at the biodiversity and climate change’ interface should be of common interest and necessarily requires holistic and regional approaches.

ERA-LAC collaboration for research on biodiversity and climate change is still largely in its infancy. For many years, it has been mainly promoted by bilateral schemes promoting research between one European country and one LAC country.

In parallel, and in the context of the EU Strategy to stand as a world leader to tackle global challenges, the European Commission (EC) has promoted the ties between the EU, Latin America and the Caribbean in the field of science, technology and innovation. For instance, more than 750 participations of Latin American and Caribbean researchers have been funded in collaborative projects with European partners for a total €100 million through the Framework Program 7 for research and innovation (2007-2013, www.eeas.europa.eu/lac).

The LAC region harbours an outstandingly rich diversity of species and ecosystems whose capacity to deliver essential services to society is already under severe pressure (Hoorn et al. 2019, Perez et al. 2010, Martinez et al. 2011). While a sound management of biological resources may strengthen the economies of the region, their mismanagement in some countries accelerates environmental degradation, food and water insecurity, and health and social problems (Swanson 2013). The additional challenges imposed by climate change require the scientific community to join forces in addressing key challenges such as documenting the climate change-induced changes in ecosystems, increasing the understanding of the

biological underpinnings for ecosystem services (in particular those linked to climate regulation, and climate change effects on services) and ecosystem-based adaptation (Munang et al. 2013) and other approaches for maintaining and restoring resilient socio-ecological systems in face of climate change (Mooney et al. 2009).

Our results reveal that the ERA-LAC scientific community has appreciated the importance of this challenge, as the growth in the number of papers at the 'biodiversity and climate change' interface has been exponential over the last decade. Remarkably, the proportion of 'biodiversity and climate change' publications and those involving ERA-LAC partners has also significantly increased. Various theories have been proposed to explain the rise of international scientific cooperation (Wagner & Leydesdorff 2005). Among them, the development of 'big science' including global biodiversity projects (e.g., GLORIA, CTFS), historical relationships like former colonial ties (e.g. within the hispanophone communities), and the development of national research funding programmes (e.g., in Brazil or Ecuador) have likely contributed to the expansion of the ERA-LAC co-publication network in 'biodiversity and climate change'.

The increase in scientific co-authorships between ERA-LAC countries is also likely an outcome of the increasingly complex web of relationships that has been weaved among scientists of the two regions (Russel & Ainsworth 2014). While some countries like Mexico, Italy and the Netherlands relied heavily on international and regional collaboration to boost scientific production, others like Brazil and UK appear to become more independent to boost mainstream production, a pattern also reported in other works (Russel & Ainsworth 2014). Many countries like Brazil, France, UK and Germany mostly develop bilateral cooperation with poor regional integration, and further efforts should be made to foster south-south cooperation. It is noteworthy that while no individual ERA country reached the levels of co-authorship of the US with LAC, the region as a whole equalled North America as the number one scientific partner of LAC.

Many issues addressed by the 'biodiversity and climate change' scientific community (e.g., the study of reef system's resilience to climate change, or adaption to changing fishery resources) require an interdisciplinary approach between Life, Earth and Social sciences. Our study suggests that interdisciplinarity is still in its infancy in the ERA-LAC cooperation network. Although the internal disciplinary differentiation of science motivates linkages among research teams in specific research domain at the international level (Wagner & Leydesdorff 2005) more efforts should be done by the scientific community of both regions to develop common study models. This would help integrating various expertises, fostering participatory science and informing decision makers, in the same way of thinking as the Intergovernmental Panel on Climate Change (IPCC) and Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).

Over the last twenty years, the ERA and LAC countries have committed themselves to consolidating their links through a strategic partnership. If a major objective of these reinforced links is to build countries' capacity and promote academic excellence and productivity, their real impact in terms of generating scientific independence of academics in LAC countries remains uncertain. Further parameters like journal impact factors and corresponding author metrics could be incorporated into bibliometric analyses to better understand whether ERA-LAC collaboration has recently developed in a way that fulfils this goal. Another major objective of reinforced ERA-LAC links is to properly study the interplay of biodiversity and climate change issues over the entire LAC area. However, our results indicate that ERA-LAC collaboration is biased

towards a few, emerging countries, with most studies focused on sites in Brazil and Mexico. Our results indicate a need to better tailor cooperation with low- and mid-income countries by conducting more targeted collaborations for R&D studies on biodiversity and climate change. However, strengthening the connection between less developed countries and the global cooperation network will not be easy. For example, Bolivia appears in our analysis only as a peripheral link to the global network through regional hubs, but it has very limited academic resources in biodiversity and climate change science. The limitations of climate model downscaling (for example in the Andean region, Pachauri et al., 2014) and the fragmented information available on the conservation status of many South American species (UNEP 2010) illustrate the urgent need for ERA-LAC initiatives at the interface of climate change and biodiversity to integrate a truly regional approach. As it is unlikely that such an initiative would come from individual countries, the EU faces a key challenge in promoting regional scientific cooperation in LAC countries. It is a daunting task, but the recent calls launched by ERA-LAC networking projects such as the ERANet-LAC (<http://eranet-lac.eu>) are promising advances to address this issue.

- **Description of activities**

Since the previous SOM in San José (April 2014), significant progress had been made on several issues: two bioregional workshops have been organized in France and in Colombia, the mapping of bioregional cooperation on biodiversity and climate change has been finalized, ALCUE NET work package on biodiversity and climate change has been represented in strategic events (COP 20 in Lima, Buenos Aires Environment Seminar, JPI Climate Symposium...). This was achieved with substantial input from associated projects and key initiatives involved in the field of biodiversity and climate change research and innovation and with a specific interest in the bioregional or international cooperation (ENSOCIO-LAC, CORDEX LAC, ERANET-LAC, BiodivERSA, JPI Climate, ABEST, IPBES, GBIF, IAI...). Following these successful collaborations, recommendations have emerged to strengthen the JIRI Roadmap including concrete proposals of activities with various scopes and instruments. The main activities are described below. It encompasses the analysis of the cooperation landscape, the development of capacity building activities, the identification and dissemination of common priority topics, the implementation of an observatories platform and the promotion of synergies among key initiatives related with biodiversity and climate change at bioregional or international level.

COOPERATION LANDSCAPE ANALYSIS

The mapping and analysis of the cooperation landscape was performed based on a bibliometric analysis, conducted with ALCUE NET and BiodivERSA (ERA NET on PanEuropean coordination of biodiversity research), which has been finalized in early 2015. The results of this analysis form a useful basis to identify and quantify cooperation activities between EU and LAC countries with a focus on temporal evolution, EU versus LAC leadership and the types of research domains covered. The analysis will support the promotion of EULAC cooperation on biodiversity and climate change to targeted projects fostering synergies and joint activities at the bi-regional and international level. Furthermore, in order that the results are disseminated to relevant target audiences, the analysis has been submitted in November 2015 to a dedicated research

and policy international journal. In parallel, BiodivERsA will publish a brochure, based on the results of the analysis covering biodiversity field, by the end of 2015. As BiodivERsA network is made of around 30 national funding agencies in Europe, with interest in biodiversity research, this will help to extend the bi-regional cooperation with LAC countries on this field.

Furthermore, more than 450 projects involving scientists from both regions in the areas of climate, natural resources and raw materials were mapped by ENSOCIO-LAC. This information has been made available on the website of ALCUE NET as well as the ENSOCIO-LAC project.

CAPACITY BUILDING ACTIVITIES

ALCUE NET workshops held during the last two years showed the existence of a significant demand for developing capacity building activities between the two regions and between biodiversity and climate change communities. Dissemination of information on opportunities for funding needs to be strengthened, as well as the sharing of good practices among institutions, in particular in the academic sector (universities, research institutes...). Research projects including both biodiversity and climate communities are highly relevant to develop consistent responses to societal challenges at the global level. Therefore, interactions between the two communities should be particularly reinforced through capacity building activities.

Opportunities for funding in Horizon 2020 and Erasmus + (doctoral and post-doctoral programmes, staff exchange, Summer schools, training...) were presented during ALCUE NET / CORDEX workshop in Bogotá (September 2015). Among the funding opportunities provided by the European Commission, biodiversity and climate experts are particularly interested in RISE instrument (Research and Innovation Staff Exchange) to develop training activities and workshops at the interface between biodiversity and climate change communities and integrating theoretical but also field knowledge. Furthermore, there is a particular interest in developing activities including pilot studies on climate services and high resolution downscaling. The Marseille workshop (November 2014) has also shown that there is a need for training on data management and intellectual and property right issues in LAC countries. Horizontal activities (between LAC countries) should also be considered. Moreover, a specific session held on Public/Private partnerships with the support of the Portugal Research Centre on Biodiversity and Genetic Resources (CIBIO) and several representatives of private companies highlighted the importance of enhancing the exchange of experience and knowledge between the academic and non academic sectors.

Finally, the day of training held in the frame of ALCUE NET / CORDEX III workshop in Bogotá, has provided a very effective basis to strengthen links between biodiversity and climate communities, which should be widespread and combined with incentives to encourage collaborative projects.

The next activities of the Working Group on capacity-building oriented towards both scientific communities could also apply to the implementation of the future transnational observatory platform. The subject will be further developed below.

COMMON PRIORITY TOPICS

- 1) **Biodiversity assessment and monitoring** – Improving baseline distribution data and compatibility with climate datasets

- 2) **Observatories network platform** on biodiversity and climate change - Coordinating data acquisition and fostering data access and transfer, as well as exchange successful experiences between EU and LAC researchers in the evaluation of climate change in the biodiversity of both regions.
- 3) Ecosystem-based **adaptation and resilience**
- 4) Enhancement of public and private market for **Climate Services** through institutional innovation in response to socioeconomic needs in CELAC region
- 5) **Incentives** to encourage collaborative projects on biodiversity and climate change
- 6) **Flagship Pilot Study (FPS)** of high resolution downscaling endorsed by CORDEX

Six priority topics for future bi-regional activities were identified during the workshops which ALCUE NET organized or participated in (see description of topics in annex 5.5).

Two of them have been selected by the ERANet LAC for its first and second joint calls: “*Biodiversity assessment and monitoring*” (2014- 2015), and “*Ecosystem-based adaptation and resilience*” (2015 – 2016). In parallel, the topic focusing on “*Observatories network*” was refined in 2015 with a concept note to establish an observatories platform (see in annex 5.4). Furthermore, a topic on the “*Enhancement of public and private market for Climate Services through institutional innovation in response to socioeconomic needs in CELAC region*” emerged from the Environment Seminar in Buenos Aires (February 2015), which was also supported by ENSOCIO-LAC. This topic has been submitted by the ENSOCIO-LAC project to the European Commission DGRI as a recommendation topic for future H2020 calls involving collaboration with LAC countries. An additional topic on “*Incentives to encourage collaborative projects on biodiversity and climate change*” emerged in September 2015 and it will be further defined in the next months. As highlighted at the last ALCUE NET/CORDEX workshop in Bogotá, scientists have little opportunity of connecting with their peers from a different field or discipline (e.g. modelers with biologists working on climate change impacts on ecosystems). Therefore, the need of incentives for developing more collaborative projects on biodiversity and climate change is essential to facilitating the interactions between biodiversity and climate research communities. This will provide opportunities, especially to young researchers to engage into interdisciplinary projects and to develop innovative research lines. Several actions are envisaged to encourage incentives as developing calls at the interface between biodiversity and climate change, joint CORDEX/ALCUE NET publication with IPCC, identifying pilot studies where combined biodiversity and climate change approached are needed to solve societal challenges. Finally, another topic emerged from Bogotá workshop. It is based on fostering a *Flagship Pilot Study (FPS) focused on a sub-continental-scale targeted region*, so as to allow a number of capabilities towards addressing key scientific questions related to biodiversity and climate change. The proposed study will run RCMs at a broad range of resolutions, down to convection-permitting side-by-side experimental design and evaluations of both statistical and dynamical downscaling techniques at scales more typical of biodiversity applications; The FPS developed proposal will be submitted to the International Project Office for CORDEX (IPOC) for endorsement.

The above topics reflect the results of a continuous process of reflection that took place at a numerous of biregional workshops and events involving high level scientists and stakeholders with experience in the biodiversity and climate change area. It is expected that these topics will be promoted to key initiatives (projects, international platform, policy makers, funding agencies, research organizations) to foster biregional joint calls, capacity building activities, strategic research agenda etc. In parallel, specific calls on nature based solutions, climate services and smart and sustainable cities, including an international scope,

have been identified and were presented during ALCUE NET / CORDEX workshop in Bogotá (September 2015). However, though international cooperation is defined as a priority issue of Horizon 2020, the work programmes 2015-2016 does not provide many opportunities for LAC experts working on biodiversity and climate change topics.

OBSERVATORIES PLATFORM (see concept note in annex 5.4)

This proposal emerged from the thematic workshop held in Marseille and it was reviewed during Bogotá workshop and SOM biodiversity and climate change working group meeting. The need of developing an observatories network platform on biodiversity and climate change was recognized. It is agreed on the importance of having a common platform from where researchers and decision makers could get the latest information about climate change scenarios, climate data, vulnerability assessments, biodiversity legislation and adaptation measures proposed to diminish the negative effect of climate change on biodiversity, water resources and local and regional economies.

The general objective of this platform is to provide both researcher and decision-maker communities with an appropriate tool for dealing with data and analysis about EU-LAC cooperation on biodiversity and climate change. Based on a mapping of relevant existing infrastructures and information platforms, this tool will facilitate the sharing of knowledge on projects in the European Union and Latin America and Caribbean countries. This would allow for an interdisciplinary and bi-regional approach that would encourage promotion of information, sharing of experiences and emergence of innovative actions. Furthermore, it will contribute to developing climate and adaptation services, integrated scenarios, and vulnerability assessments, to tackle the negative impact of climate change on biodiversity, water resources and local and regional economies.

On the other hand, the platform reflects the specific objectives of EU-LAC JIRI: “Helping to improve the conditions for bi-regional cooperation in biodiversity and climate change, through the promotion of information, sharing experiences and good practices and encouragement of innovation initiatives.”

A small group of participants will develop a proposal for a CELAC observatories platform to present at the next meeting of the SOM. The strategy would be to raise the interest of senior officials to fund their respective national subpages providing the local information required by the observatory. In their presentation the group will also propose those studies that will need to be done for designing, developing and implementing this platform.

The next activities of the Working Group around the observatory platform could be focused on the following steps:

- Further definition of concept on the basis of the first concept note elaborated
- Debates about sensitive issues related to such a platform: data use and management, intellectual property and legal issues, national and transnational regulations, etc.
- Capacity-building for end-users of the future platform

SYNERGIES WITH KEY INITIATIVES BEYOND ALCUE NET

Synergies with associated and targeted initiatives (JPI Climate, JPI Water, JPI Ocean, BiodivERSA, CYTED, EUROCLIMA, IAI, GFCS, Future Earth...) will be improved through the dissemination of strategic information

(ALCUE NET/BiodivERsA publication and brochure), the participation and invitation in meetings, and in particular through consultation about the internationalization of European or LAC networks. Strategic bilateral meetings with the coordinators of the key initiatives mentioned before (and potentially with their consortium's members as a second step) could be organized with the aim of identifying specific synergies according to the [specificities of each network](#). The leader and co-leader of the JIRI WG, the MINCYT as coordinator of ALCUE NET, some key experts involved in the field concerned, and representatives of the EC could potentially participate to these strategic meetings to be held during the 2016 year. This approach will support the design of concerted actions to sustain bi-regional activities beyond ALCUE NET. Information about the project outputs should be shared building on the appropriate materials designed prior to the meetings. A significant interest has also been indicated in organizing high level technical workshops with very specific and innovative case studies, which also could raise awareness of programme managers and stakeholders.

During the last months, new avenues for cooperation were discussed with relevant initiatives in the field of biodiversity, climate change and the bi-regional cooperation. This should pass through the share of knowledge and dissemination of information about ALCUE NET. For instance, in December 2014, ALCUE NET activities on biodiversity and climate change were presented at the COP 20 in Lima during a specific side-event. In addition, following the bibliometric analysis conducted by IRD and BiodivERsA on bi-regional cooperation, BiodivERsA coordinator expressed his interest in continuing the collaboration with ALCUE NET. ALCUE NET / BiodivERsA brochure on bi-regional cooperation on biodiversity will be released during the first semester of 2016 and other activities are expected to emerge in 2016 (capacity building activities, consultation on priority topics...). ALCUENET WP5 was also invited to participate in the ENSOCIO-LAC final workshop in Berlin (March 2015). This meeting provided an opportunity to share information on both projects, and a fruitful exchange on how to highlight and make use of ENSOCIO-LAC outputs (database of projects, policy brief on climate services...). In parallel, after a first meeting held in September 2015, JPI Climate, as well as JPI Water and JPI Ocean were invited to attend the SOM 2016. Strategic information and good practices will be provided about ALCUE NET and other projects (ERANET-LAC, ENSOCIO-LAC...). For instance, CLARIS LPB project outputs would be a good example to highlight the potential of bi-regional activities on climate change. One of the main objectives will be to pave the way for the participation of LAC countries in the above-mentioned JPIS' activities, such as joint calls. Regarding EULAC cooperation and development, EUROCLIMA programme has been approached by the ALCUE NET coordination team to discuss potential synergies too. They will also be invited to participate in the next activities of ALCUE NET, in 2016. Other initiatives, such as Future, Earth, CYTED or IAI are also targeted. Lastly, the COP 22 in Marrakech in 2016 will be a key event where ALCUE NET work and achievements should be presented.

3 Cooperation Actions and instruments: Road Map for implementation

Activity	Concrete Actions	Work progress	Instruments & resources	Indicators + Impact	Timeline
<i>Analysis of the bi-regional cooperation landscape</i>	Improvement of the bibliometric analysis with the support of BiodivERSA ERA-Net. Additional inputs, tools (BiodivERSA database) and statistical analyses	Completed – report released	ALCUE NET BiodivERSA	Networking with other initiatives (including funding networks) interested in EULAC cooperation on B&CC Dissemination of the analysis to a large audience of experts from research to policy fields	Completed
	Publication of the analysis in an international journal	Paper reviewed and submitted Publication pending (international journal)			Early 2016
	Publication of a brochure on the biregional cooperation on biodiversity	Review of the brochure			Early 2016
<i>Synergies with key initiatives</i>		Participation to ENSOCIO-LAC final workshop (March 2015) Consultation on how to sustain and build upon ENSOCIO-LAC project's results	ALCUE NET ENSOCIO-LAC	Dissemination of ENSOCIO outputs on biodiversity and climate change	Integrated in this report

	Sharing knowledge with associated initiatives involved in EULAC cooperation: ENSOCIO LA and ERANET-LAC	<p>Submission of topics to the ERANET-LAC One topic selected: "Biodiversity assessment and monitoring" (2014-2015 joint call)</p> <p>Submission of topics to the ERANET-LAC One topic selected: "Ecosystems adaptation and resilience" (2015 – 2016 joint call)</p>	ALCUE NET ERANET-LAC	<p>3 EULAC research projects funded following 2014-2015 joint call (overall budget: 2.2Meuros)</p> <p>Other Research projects will be funded in 2016</p>	2015-2016
EU-LAC cooperation on climate change research and innovation		Organization of a COP 20 side-event on ALCUE NET activities related to climate change in LAC	ALCUE NET	Dissemination of information on ALCUE NET specific activities on climate change	December 2014
		Participation in bi-regional seminar on climate services (Buenos Aires, February 2015)	JPI Climate CLARIS-LPB CORDEX	Identification of a common topic on climate services	March 2015
		<p>Meetings with JPI Climate general secretariat coordinator (Sept 2015)</p> <p>Participation in JPI Climate Symposium in Madrid (Nov 2015)</p> <p>Invitation to the SOM (March 2016)</p> <p>Consultation on JPI Climate, Water and Ocean future strategy through strategic bilateral meetings (2016)</p>	ALCUE NET JPI Climate JPI Water JPI Ocean	<p>Dissemination of information about EULAC cooperation on climate change</p> <p>Internationalization of JPI Climate, Water and Ocean</p> <p>Funding of EULAC research projects on climate change through ERA4CS ERANET</p>	2015 – 2016 - 2017
	EU-LAC cooperation on biodiversity research and innovation	Meetings with BiodivERsA coordinator through 2014 and 2015	ALCUE NET BiodivERsA	Dissemination of information about	2015-2016-2017

		Co-authored paper and brochure to be published (end 2015) Consultation on internationalization of BiodivERsA		EULAC cooperation on biodiversity Funding of EULAC research projects on biodiversity	
	Developing links with other key initiatives	EUROCLIMA, GBIF and IPBES have already been involved into ALCUE NET workshops. Further interactions are envisaged as well as with other initiatives IPCC, GEOSS, CYTED, Future Earth...	ALCUE NET	Share of knowledge on EULAC cooperation landscape on biodiversity and climate change Funding opportunities, identification of common topics, capacity building activities...	2016 - 2017
Capacity Building activities	Training activity with EU-LAC biodiversity and climate change communities' experts Presentation and consultation on capacity building activities with relevance for biodiversity and climate change communities Common workshop of capacity-building linked to the future implementation of the observatory network	Organization of a joint workshop with CORDEX including training and information on opportunities for capacity building activities Organization of future workshops to be better defined	Horizon 2020 & Erasmus + programmes CORDEX ALCUE NET	Improvement of interactions between biodiversity and climate change experts Future EULAC research proposals on biodiversity and climate change research Future EULAC capacity building activities on biodiversity and climate change	Workshop in Bogotá (Sept 2015) Workshop in 2016-2017?

<p><i>Common priority topics</i></p>	<p>Identification and improvement of EU LAC common priority topics on biodiversity and climate change:</p> <ul style="list-style-type: none"> • Biodiversity monitoring and assessment • Observatory Network Platform • Resilience and adaptation of ecosystems • Climate Services • Incentives for collaborative projects • Flagship Pilot Study (FPS) project of high resolution downscaling endorsed by CORDEX 	<p>Improvement of topics identified in 2014 (Marseille workshop Nov 2014)</p> <p>Identification of a topic on climate services (Buenos Aires workshop, Feb 2015) – Submission of this topic to European Commission DGRI to foster calls on this thematic and including collaboration with LAC countries</p> <p>Identification of a topic on Incentives for collaborative projects and Flagship Pilot Studies on high resolution downscaling including biodiversity applications (Bogotá workshop Sept 2015)</p>	<p>ALCUE NET ENSOCIO-LAC CORDEX</p>	<p>Development of a strategic agenda with common priority topics</p> <p>Dissemination to funding agencies and programmes at the bioregional and international level</p>	<p>2015 - 2016</p>
<p><i>Observatories network platform</i></p>	<p>Project proposal to implement a LAC observatories platform on biodiversity and climate change</p>	<p>Presentation of the concept of LAC observatories network platform on biodiversity and climate change</p>	<p>ALCUE NET</p>	<p>Implementation of a EULAC observatories platform on biodiversity and climate change to improve data standard and access as well as to share knowledge and experiences and to provide policy makers with appropriate tools and information</p>	<p>Marseille workshop (Nov 2014)</p>
<p>Development of a roadmap for implementation</p>	<p>ALCUE NET</p>	<p>Submission of the roadmap to the SOM (March 2016)</p>			
<p>Further development of concept through concept note and debates around sensitive issues as transnational regulations on intellectual property linked to data use and management in biodiversity</p>	<p>ALCUE NET</p>	<p>2016 - 2017</p>			
<p><i>Innovation</i></p>	<p>Foster Public-Private partnerships</p>	<p>Case study analysis on Portugal during Marseille workshop, including managers of private companies and the CIBIO</p>	<p>CIBIO ALCUE NET</p>	<p>Dissemination of public/private good practices</p>	<p>November 2014</p>

		(share of knowledge and good practices)		Development of public/private partnerships between EU and LAC	
	Focused bioregional workshops on very specific and innovative case studies	To plan high level technical workshop	ALCUE NET High Level project	To raise awareness of programme managers, stakeholders and decision makers on EULAC cooperation on innovation New EULAC innovative project proposals	2016
<i>Strategic bioregional workshops and events</i>	Promote development of partnerships between biodiversity and climate change community from both regions	Marseille workshop - Share of knowledge and good practices on data use and management - Presentation and dialogue with key initiatives (BiodivERSA, IPBES, GBIF, FRB)	ALCUE NET CIBIO (Portugal) FRB (France)	Establish a bioregional platform of actors involved in biodiversity and climate change research and innovation	November 2014
	Identify common priority topics for both regions	- Share of good practices on public/private partnerships (CIBIO)			
	Share knowledge on research breakthroughs, infrastructures and key initiatives to facilitate the development of R&I projects between both regions	Buenos Aires workshop - Identification of a common topic on climate services - Share of good practices and experiences on climate research projects (CORDEX, CLARIS-LPB, ENSOCIO-LAC, IAI...)	ABEST CORDEX ENSOCIO-LAC ALCUE NET		March 2015
Inform on funding opportunities on biodiversity and climate change at the bioregional level					
Disseminate information on the bioregional cooperation landscape, main actors, fields of research and funders		Bogotá workshop - Training on dialogue between biodiversity and climate scientists and modeling activity - Share of knowledge and good practices on opportunities for funding and developing capacity building activities	CORDEX ALCUE NET		September 2015
Encourage public-private partnerships					

	Develop science policy dialogue	<ul style="list-style-type: none"> - Identification of priority topics and good practices to facilitate the production of scenarios including biodiversity and climate communities 			
		<ul style="list-style-type: none"> - Present ALCUE NET outputs on biodiversity and climate change to key initiatives to develop opportunities for funding (JPIs, ERA-Nets, Research institutes, Private companies and Foundations...) - Encourage science policy dialogue on priority topics identified 	<p>ALCUE NET Other initiatives to be identified</p>		2016

4 Summary of EU-CELAC SOM decisions-making issues

- *To forward recommendations for SOM deliberations: i) Ideas to enhance biregional cooperation on R&I and future sustainability beyond lifetime of ongoing supporting projects and initiatives; ii) Reflections towards HORIZON 2020, focused on calls, participant rules & new instruments and opportunities.*
- Recommendation 2: Strengthening the dialogue between biodiversity and climate communities through **capacity building activities and cooperation projects** so that biodiversity community's expectations could be better identified and climate models limitations better assessed. As evidenced in the different workshops, a major barrier to the scientific cooperation between biodiversity and climate change communities seems to be the discrepancy in the data formats, resolution, uncertainties, and access of each community.
- Recommendation 1: Improving understanding and collaboration between both communities and both regions by promoting **common priority topics** identified and by integrating **incentives**. This will help to develop collaborative projects including biodiversity and climate communities, in particular on pilot studies on climate services with high resolution downscaling.
- Recommendation 3: Facilitating the **integration of biregional or global strategies** into European initiatives agenda (JPIs, ERA NETs) and promoting the access of LAC countries to international networks. Also, the dissemination of appropriate information on the analysis of the biregional cooperation to these strategic initiatives will foster joint activities and support to develop the **dialogue with policy makers**.
- Recommendation 4: Implementing the first steps of an **observatories network platform** in LAC countries on biodiversity and climate, as detailed in the concept note on the observatories network platform (see Annex 5.4)

5 Annexes

- **5.1 List of participants that contribute to the SOM WG activities**

Name	Firstname	Organisation	Country
DANGLES	Olivier	IRD	France
EREÑO	Carlos	MINCYT / UBA	Argentina
FREOUR	Claire	IRD	France
GIRON	Olivier	MENESR	France (SOM WG official representative)
MORRIS	Mark	SAMUI	France
PATIÑO	Carlos	CONACYT / UDLAP	Mexico
SÁNCHEZ	Marcela	COLCIENCIAS	Colombia
GUERRERO	Laura Catalina	COLCIENCIAS	Colombia
SPLETT	Stephanie	DLR	Germany
CHAVEZ	Juliana	COLCIENCIAS	Colombia (SOM WG official representative)

- **5.2 Short description of projects and initiatives mentioned in the report**

ALCUE NET is a four and a half year project funded by the 7th Framework Programme of the European Union, which started in December 2012. The consortium is composed of 19 institutions, eight from the European Union and eleven from Latin American and Caribbean countries, representing stakeholders from government and research. Its main goal is to strengthen bi-regional sustainable dialogue on Science and Technology between European (EU), Latin American and Caribbean (LAC) countries by focusing on the following areas defined as bi regional interest: Bioeconomy, Information and Communication Technologies, Biodiversity and Climate Change, and Energy.

ENSOCIO-LAC (EU-project funded in the framework of FP7 from May 2013 to April 2015): The ENSOCIO-LAC project aimed at establishing sustainable and integrated research and innovation cooperation between the EU and Latin American Countries in the environmental field, namely in climate change, resource efficiency and raw materials. ENSOCIO-LAC elaborated a roadmap for bioregional collaboration in the areas mentioned above, including recommendations for future priority topic, instruments and policy support.

ERANet-LAC (EU-project funded in the framework of FP7 from October 2013 to March 2017): ERANet-LAC is a Network of the European Union (EU) and the Community of Latin American and Caribbean States (CELAC) on Joint Innovation and Research Activities. It strengthens the bi-regional partnership in Science, Technology and Innovation by planning and implementing concrete joint

activities and by creating a sustainable framework for future bi-regional joint activities. ERANet-LAC organizes two biregional joint calls for research projects, the first was launched in September 2014, the second will be published in December 2015.

CORDEX COordinated Regional climate Downscaling Experiment, is a WCRP-sponsored program to organize an international coordinated framework to produce an improved generation of regional climate change projections world-wide for input into impact and adaptation studies within the AR5 timeline and beyond. CORDEX will produce an ensemble of multiple dynamical and statistical downscaling models considering multiple forcing GCMs from the CMIP5 archive. Initially, a 50km grid spacing has been selected, favoring engagement of wider community. Multiple common domains covering all (or most) land areas in the World have been selected.

BIODIVERSA is a network of 31 research-funding agencies across 18 European countries. It is an ERA-NEt Co-fund, funded under the EU's Horizon 2020 Framework Programme for Research and Innovation. BiodivERsA works to coordinate national research programmes on biodiversity across Europe and to organize international funding for research projects in this field, on a competitive basis.

JPI CLIMATE is a collaboration between 14 European countries to coordinate jointly their climate research and fund new transnational research initiatives. JPI Climate connects scientific disciplines, enables cross-border research and increases the science-practice interaction. JPI Climate contributes to the overall EU objective of developing a European Research Area and is coordinated with the EU Programme Horizon 2020.

IPBES (Intergovernmental Platform on Biodiversity and Ecosystem Services) was established in April 2012, as an independent intergovernmental body open to all member countries of the United Nations. The members are committed to building IPBES as the leading intergovernmental body for assessing the state of the planet's biodiversity, its ecosystems and the essential services they provide to society.

- **5.3 ENSOCIO-LA project: Strategic, Sustainable R&I Cooperation with Latin America (Climate Action, Resource Efficiency and Raw Materials)**

Executive summary

The ENSOCIO-LA project was a 2-year Coordination and Support Action which supported sustainable and integrated research and innovation cooperation between the EU and Latin American Countries in the environmental field, namely in climate change, resource efficiency and raw materials. The project ran from May 2013 until April 2015, with 14 partners – half drawn from the EU and half from LAC. The project had strong links with a series of other projects and programmes and fed into the Joint Initiative for Research and Innovation (JIRI) of EU and CELAC (Community of Latin American and Caribbean States) as one of the thematic projects supporting the SOM working groups; in particular, ENSOCIO-LA supported the goals of the SOM Biodiversity Working Group. (See <http://www.ensocio-la.eu/project-links.php>).

The anticipated impacts of ENSOCIO-LA included:

- a) To establish a more strategic, integrated and sustainable research and innovation collaboration in the field of climate change, resource efficiency and raw materials between the EU and LAC
- b) Stimulation of future integrated and strategic cooperation activities
- c) Mobilisation of financial means from various sources
- d) Enhanced uptake and use of research and research results for meeting societal challenges in bi-regional and bilateral mutual priorities.
- e) Supporting policy advice and agenda setting

The approach taken by ENSOCIO-LA to enhance EU-LAC cooperation in these areas included the following actions:

- 1) An extensive review of past and ongoing projects linking the EU and LAC in these topic areas, funded by a variety of programmes (leading to a long list of ~500 projects)
- 2) Evaluation of those projects for future potential (based upon potential for ongoing development, uptake and industry implementation of the project outcomes); identification of a short list (~60 projects) for closer consultation
- 3) Focussing upon the short listed projects, identification of priorities and opportunities for further research collaboration, including prioritised actions, and potential sources of funding
- 4) Initiation of supporting actions wherever possible and provision of recommendations for research priorities and actions into funding projects and programmes such as ALCUE NET, ERANet-LAC, SOM Working Groups, Horizon 2020 etc. Production of a specific roadmap summarising these actions, priorities and recommendations
- 5) Creation of a knowledge platform for public online access containing all project data, including long listed, short listed projects, funding sources etc with a user interface to allow searching in many different ways, supporting the longer term use and uptake of the project knowledge

Links to the EU-CELAC SOM process

The project had strong links with the SOM process and various supporting projects. In mid 2015, ENSOCIO-LA partners such as Colciencias, leads the Biodiversity Working Group, MINCyT coordinates the ALCUE NET project and DLR Coordinates the ERANet-LAC project. In particular, efforts were taken to ensure that the recommendations from ENSOCIO-LA supported the Biodiversity working group programme and fed into the ERANet-LAC project, where national funding was focussed to support two rounds of research calls.

Consortium

The ENSOCIO-LA work was undertaken by a team of 14 project partners, with 7 drawn from Latin America and the Caribbean, and 7 from Europe. The ENSOCIO-LA partnership comprised:

No	Partner	Country	No.	Partner	Country
P01	Samui France (Coord)	France	P09	IVL	Sweden
P03	UPCT	Spain	P10	CARIRI	Trini & Tob.
P04	DLR	Germany	P11	Fraunhofer	Germany
P05	MINCyT	Argentina	P12	IAI	Uruguay ¹
P06	CONICYT	Chile	P13	HZDR	Germany

¹ IAI has an office base in Uruguay but is an inter-American organisation serving 19 countries of the Americas

P07	COLCIENCIAS	Colombia	P14	CICITEM	Chile
P08	CONACYT	Mexico	P15	Metcenias	Czech Rep.

The Strategic Roadmap – summarizing the main results and recommendations

The main findings and outcomes of the activities of the ENSOCIO-LAC project were summarized in a “Strategic roadmap for bi-regional cooperation including recommendations for EU and national funding agencies”. This roadmap aims to enhance research cooperation between LAC and EU in the three thematic areas mentioned above by formulating concrete suggestions, which target various end users such as the European Commission, national ministries and policy makers as well as scientists in both regions.

Those main finding and recommendations can be summarized as follows:

- Research activities involving actors from both regions are intense and manifold, covering a large set of research topics with specific focus on water resources (management) and sustainable mining.
- The countries most represented in the more than 450 projects and networks analysed were – not surprisingly - Argentina, Brazil, Chile, Mexico and Colombia on LAC side and France, Germany, the Netherlands, Spain and UK on EU side.
- In all three thematic areas a lack of (access to) standardized data and the need for enhanced modelling activities and improved know how was identified.
- A strong need for enhanced interdisciplinarity and getting science into market (considering sustainable value chains and involving stakeholder networks) in future bi-regional research activities was formulated.

Setting up three promising new initiatives

- On the basis of existing research activities and the networking activities enhanced by ENSOCIO-LAC, three promising new initiatives were set up: “Water resources and food security: Water balances as a key issues”, “Participatory implementation of small-scale waste water treatment systems and water reuse technologies” and “Sustainable mining”. For all three initiatives a core consortium and the first set of activities were defined (including ENSOCIO-LAC partners) and the funding opportunities were identified.

Suggestions for future research topics

- The Framework Programmes of the EC are one of the main funding sources of the bi-regional research activities analysed by ENSOCIO-LAC. Currently, there is a lack of LAC targeted calls on H2020 inspite of a high political interest of the EU in strengthening the partnership with LAC. Therefore, the suggestions include the following specific H2020 topics, which are of high relevance for both regions:
 - Climate change and biodiversity: “Governance of climate, biodiversity and ecosystem services” and “Sustainable agriculture development with earth observation systems, carbon and water footprints and decision making systems for resource efficiency use”.
 - Resource efficiency: “Water resources and food security”, “Valorisation of agro-industrial, food-industrial, and urban residues including nutrient recovery from wastewater and organic residues and metal recovery from wastes and by-products” and “Research on the health – water – climate change nexus”.
 - Raw materials: “Biofuels”, “Bioplastics”, “Sustainable bio-prospecting of marine based materials”, “Enhancement of industrial symbiosis”, “Sustainable agriculture” and “Sustainable mining”.

- In the first Joint Call of the ERANet-LAC project, no ENSOCIO-LAC related topics were considered. Therefore, the consortium elaborated the following six topics for the 2nd Joint Call of ERANet-LAC:
 - Enhancement of public and private market for Climate Services through institutional innovation in response to socioeconomic needs in CELAC region
 - Bioeconomy
 - Health – Water – Climate change nexus
 - Sustainable mining: health and remediation of contaminated sites
 - Waste management, recycling and urban mining
 - Waste water treatment (small scale facilities)

Suggestions for the EU-CELAC SOM

- The following recommendations for an optimized bi-regional cooperation were formulated, to be discussed at the next EU-CELAC SOM meeting end of 2015:
 - Improve communication and dialogue processes between science and industry as well as between public and private actors and improve the involvement of small-holders as users and protectors of ecosystems in decision making processes.
 - Capacitate technical advisors and local scientists to policy makers
 - Implement adequate legislation procedures in order to enhance comprehensive & scientifically-based policies
 - Establish common methodologies and observatories in order to make information on water regime and balance, climate and biodiversity available for actors and decision makers in both regions.

For more information see www.ensocio-la.eu
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- ***5.4 Concept note on the observatories network platform***

1. INTRODUCTION.

Strengthening the cooperation between European Union (EU) and Latin America and Caribbean (LAC) countries in the context of biodiversity loss and climate change is a promising action for both regions. Indeed, in both EU and LAC the future of biodiversity and of the availability of and access to biological resources and ecosystem services in the context of climate change are of increasing importance in decision making. For this reason, it is fundamental the development of an observatories network platform on climate change: “a common platform from where researchers and decision makers could get the latest information about climate change scenarios, climate data, vulnerability assessments, biodiversity legislation and adaptation measures proposed to diminish the negative effect of climate change on biodiversity, water resources and local and regional economies”.

2. MAIN OBJECTIVES.

The general objective of this platform is to provide both researcher and decision-maker communities with an appropriate tool for dealing with data and analysis about EU-LAC cooperation on biodiversity and climate change. Based on a mapping of relevant existing infrastructures and information platforms, this tool will facilitate the sharing of knowledge on projects in the European Union and Latin America and Caribbean countries. This would allow for an interdisciplinary and bi-regional approach that would encourage promotion of information, sharing of experiences and emergence of innovative actions.

3. PARTICULAR OBJECTIVES.

The Observatory Network platform will in particular contribute to the following objectives:

- a. To avoid overlaps and fragmentation of information, and to develop synergies between different observatories programmes (research projects, capacity building...);
- b. To enable the establishment of common indicators and improve the flexibility of data source and database management;
- c. To facilitate dissemination and share of information and data on climate and adaptation services, biodiversity scenarios and ecosystem services.

4. METHODOLOGY.

The Observatory Network platform in biodiversity and climate change would be created following next tasks:

- a. Give a common and comprehensive definition of what is called “EU-LAC observatory on biodiversity and climate change”
- b. Design and disseminate a survey for mapping observatories in LAC related with climate services and biodiversity data and projects during the first phase, and in the future to incorporate EU
- c. Analyze observatories’ missions, functionalities, complementarities and monitoring and generate indicators (co-publications, databases, technical tools, access to data, sustainability, and collaborations, among others)
- d. Design of a catalogue of observatories
- e. Organize a networking meeting

• **5.5 Description of common priority topics (topics 1 to 4)**

Topic 1: Biodiversity assessment and monitoring - Improving baseline distribution data and compatibility with climate datasets

CHALLENGE: High quality biodiversity data are a pre-requisite for a better understanding of the interactions between biodiversity and climate change, which is a key issue for human well being. This requires strong investment in collecting solid data on the spatial distribution of Biodiversity, which are currently highly deficient. There is an urgent need for the development and improvement of taxonomy, databases, technical platforms and, the development of innovative approaches, as for modelling of species and habitat distributions. Long-term research in biodiversity and climate monitoring should be strengthened with capacity building and knowledge transfer from communities to academics and vice versa.

SCOPE: The following sub-topics are envisaged, pooling both regions’ capacities, means and priorities: First, innovation for biodiversity inventorying (from DNA to remote sensing) will improve primary data on species distributions. Then, sentinel species and communities can be identified from these data. Additionally, the urgent issue of exotic and alien species can be considered within an ecosystem framework. Finally, biodiversity values and ecosystem services can be better defined among academics, politicians and stakeholders.

IMPACT: Biodiversity must be preserved in Latin America and the Caribbean (LAC) where there is an urgent need for high quality and extensive raw data. Furthermore exchanges of experts and knowledge will allow mitigating taxonomic impediments, improve data exchange and compatibility, thereby strengthening scientific expertise in EU and LAC.

Topic 2: Observatories network platform on biodiversity and climate change: Coordinating data acquisition and fostering data access and transfer

CHALLENGE: One of the major challenges for the bi-regional cooperation on biodiversity and climate change is the strengthening of networks of environmental observatories so that multi-scale environmental changes can be soundly assessed and interpreted. To achieve this goal, there is a strong need for the homogenization of survey designs, data collection and statistical analyses at both regional and local levels. Studies coupling long-term monitoring and shorter-term studies and experiments should be encouraged. Moreover, promoting small research projects on database analysis, involving research teams and infrastructures or synthesis centers from both regions, is a key component in strengthening the bi-regional cooperation. This will contribute to facilitating data integration on biodiversity and climate change, in line with the recommendations arising from international networks and initiatives already operating in this field (IPBES, IPCC, GBIF, GEO BON...).

SCOPE: The strengthening of environmental data monitoring and further management calls for improving interdisciplinary cooperation, which will serve both regions by structuring solid research networks. Research in Earth, life and social sciences must be integrated for improved modeling development across scales (from local to global) and disciplines (from climate physics to anthropology). The development of scientific scenarios should be addressed with an interdisciplinary approach (interdisciplinary climate-related ecosystems and biodiversity vulnerability assessment). Monitoring and understanding of extreme events can be better assumed by combining geo-bio-physical analyses, such as studies on land-ocean-atmosphere interactions. Data management plan and data life cycle analysis (managing the data and making the data available to guarantee database life and availability) should be considered. The use of existing platforms of information and data would allow avoiding overlaps and duplication of efforts. Joint projects are encouraged to include short training events (summer schools, specialized training courses) on building databases, bioinformatics or data management plans.

IMPACT: Implementation of observatories network platform will avoid duplicated efforts, raise complementary knowledge and strengthen understanding of ongoing changes and their impacts. Lessons learned from different disciplines and environments would be exploited, thus enabling transfer of knowledge between different countries and different ecosystems. Furthermore this will improve the connectivity between ecosystems, policies and research fields.

Topic 3: Ecosystem-based adaptation and resilience

CHALLENGE: This topic addresses the implementation of ecosystems based management methodologies in a context of rapid and global changes. There is incomplete understanding how ecosystem (= landscape) change due to climate change can be mitigated and which role ecosystem resilience plays in this. Climate variability internalization, through interdisciplinary and regional approaches, permits the development of conservation measures, adaptive management strategies and sustainable resource use (biodiversity and ecosystem services). It is designed to increase public and private sector awareness on the impact of climate change and adaptation strategies regarding priorities at different spatial and temporal scales.

SCOPE: The following sub-topics are envisaged, pooling both region capacities, means and priorities: Identification and development of standardized methodologies and tools, for the characterization of landscape attributes, such as connectivity, multi-functionality, sustainable uses and ecosystem planning and management under multiple stress conditions including organic and inorganic pollution, land use change, climate variability and change, invasive species, pathogens, etc. This will improve the evaluation and understanding of ecosystem vulnerability and their response to climate change, to design prioritized adaptation measures. These include methods to improve the sustainable management of natural resources, (especially water, soils and forests). Ecosystem resilience and the functional role of biodiversity should be better characterized in order to identify possible socio-ecological trade-offs, non-linearities, and feedbacks. Interface between science and policy should be developed in order to introduce dialogue and to

facilitate transfer of knowledge. This combination of approaches helps to address the Aichi Biodiversity Targets:

- [Strategic Goal A](#): To address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
- [Strategic Goal B](#): To reduce the direct pressures on biodiversity and promote sustainable use
- [Strategic Goal C](#): To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- [Strategic Goal D](#): To enhance the benefits to all from biodiversity and ecosystem services
- [Strategic Goal E](#): To enhance implementation through participatory planning, knowledge management and capacity building

IMPACT: Research cooperation on that topic induces major improvements in areas of health, water security, sustainable environment and fight against poverty and hunger, reducing social and economical impact of climate change. It will contribute to raise awareness and invest on appropriate infrastructures based on vulnerability assessment. It allows identifying specific systems of conservation reconciling conservation and development via habitat corridors and their services for biodiversity and ecosystem services.

Topic 4: Enhancement of public and private market for Climate Services through institutional innovation in response to socioeconomic needs in CELAC region

CHALLENGE: Climate change is a worldwide threat having major impacts on environment, food Security and human health. These impacts affect both CELAC countries and the European Union, so that it seems rational to search for joint solutions and experiences. A comparative analysis of successful experiences in EU and CELAC for mutual learning in Climate Service field should be highly desirable.

The expansion of the market for Climate Services and products in EU and CELAC will open business opportunities for the private sector. EU has potential to lead in the provision of Climate Services at the global level. This would require, however, strong cross-disciplinary teams as well as effective interaction with local stakeholders. Climate Services are based on forecast and modelling. Prediction accuracy depends on data and related worldwide information. Improved access to data and information for the public and private sector in EU and CELAC could be of great value in foster better predictions in both regions.

SCOPE: The following sub-topics are envisaged, pooling both regions' capacities, means and priorities:

a) To assess the present situation and the evolving needs of the market for climate services in EU and CELAC: country, institutional, sector, regional, commonalities and differences. To survey and map social actors, government and business manager needs of Climate Services at different time and spatial scales, for current and future users.

b) At both country and regional levels, the aim of the call is to contribute to the emergence of a viable international scientific community on the use of Climate Services improving the capacity building in order to promote their growth and displace potential barriers. Potential constraints limiting the use of climate information should be analyzed to bridge the gap between scientific and stakeholders' needs by making the different science and user languages compatible.

c) Use at least one type of climate phenomena of relevance for key sector(s) within the CELAC region to develop and implement all of the operational processes required to provide end-to-end climate services (generation, translation, dissemination and actual use of climate knowledge in decision-making, policy elaboration and planning). This will provide a working example of the development and implementation of Climate Services for the chosen sector, which may be used as a model for subsequent up-scaling to other sectors, regions and countries. This action should include the improvement of understanding, monitoring, and modelling which underpins the Climate Services linked to this specific climate phenomena.

d) Building from the working example, assess and scope the up-scaling and implementation of services to wider markets and communities of interest to both EU and CELAC actors, providing a roadmap for the potential development and implementation of these services.

e) Develop and apply tools to quantify the economic and intangible impacts of climate events and the value of Climate Services for society to support national and regional institutions that provide public climate services.

f) Analyze the social perception and response of climate change and the practical use of climate forecast for raising awareness and planning.

g) Test innovative schemes of Climate Services on key sectors (agriculture, health, land use planning, natural risk mitigation, etc.)

h) Participative integration of different users in the generation of Climate Services products and the identification of opportunities for application, including government support actions and SME incubators, certifications and quality control.

i) Promote strategies for the dissemination of outputs and use of products. Harness social networking to assess and manage risk especially in extreme weather situations.

IMPACT:

- Emergence of national and regional communities co-producing Climate Services
- More effective integration of climate knowledge into decision-making within EU and CELAC communities
- Increased regional networking and collaboration between CELAC and European partners devoted to Climate Services.
- Improved understanding of climate phenomena relevant to support the provision of effective Climate Services in the region.
- Clear understanding of policy, institutional and technical barriers influencing the development of Climate Services market, both within the EU and CELAC regions, and on a country-by-country basis.
- Innovative technological Climate Services solutions with high reliability.
- Open access to added value information for civil society, business, policy sectors and natural resource management.
- Develop weather institutions able to provide the climate products demanded by the community.
- Contribute to generate job opportunities by developing the sector of Climate Services.
- Enhanced and broader on-going research biregional cooperation partnerships.
- Future alignment of national policies, programs and projects for matching fund schemes (JPI, ERANETs, Joint Calls/Pilot Joint Actions)

6 Acronyms

ALCUE NET	Latin America, Caribbean and European Union Network on Research and Innovation
CORDEX	Coordinated Regional Climate Downscaling Experiment
CIBIO	Research Center in Biodiversity and Genetic Resources (Portugal)
COLCIENCIAS	Administrative Department of Science, Technology and Innovation of Colombia
ENSOCIO-LAC	Strategic, Sustainable Research and Innovation Cooperation with Latin America and the Caribbean (Climate Action, Resource Efficiency and Raw Materials)
ERANet-LAC	Network of the European Union, Latin America and the Caribbean Countries on Joint Innovation and Research Activities
RCM	CORDEX Regional Climate Model
EU-LAC	European Union, Latin America and the Caribbean
GBIF	Global Biodiversity Information Facility
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Platform on Climate Change
IRD	Institut de Recherche pour le Développement (France)
JPI	Joint Programming Initiative
BIODIVERSA	Network of National and Regional Funding Organizations promoting Pan- European research on biodiversity and Ecosystem Services (ERA-NET)
