



Meeting Minutes

ALCUE NET

Latin America, Caribbean and European Union Network on Research and Innovation

Latin America, Caribbean
and European Union

Network on Research and Innovation

ALCUE NET: The EULAC Bioeconomy Working Group of the Senior Official Meeting

**10 October 2013
San José, Costa Rica**

Task Leaders: MINCYT/CIRAD

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Meeting Objectives

Meeting objectives:

The main goal was to contribute to the Bi- Regional EULAC Policy Dialogue on Research and Innovation and increase the Social Changes through the participation of national experts in the Bioeconomy thematic for developing and strengthening networking capacities.

The meeting brought together selected partners countries' stakeholders as well as other invited experts from non-partners countries in order to:

- To inform about the Bioeconomy SOM Working Group progress
- To Identify opportunities and monitor progress made by the Bioeconomy SOM WG
- To Optimize synergies, complementarities, analyse follow-up needs and opportunities and disseminate experiences and lessons learnt
- Raise awareness and improve the ALCUE NET activities related to the Bioeconomy SOM Working Group
- To prepare the report for the next Senior Officials Meeting to be held in Costa Rica, April, 2014.

The EULAC Bioeconomy SOM Working Group meeting was organized together with the Ministry of Science, Technology and Productive Innovation (MINCYT) and the Ministry of Science, Technology and Telecommunications (MICITT) as host institution, in the framework of ALCUE NET project Activities: Work Package 4 "Addressing Societal Challenges through action in Bioeconomy of the EULAC Joint Initiative for research and Innovation (JIRI)"

The meeting was held at the Tryp Sabana Hotel on 10 October, 2013 in San José, Costa Rica.

The meeting was attended by 25 persons (*see full list in Annex I*). All project countries partners were represented except for Chile, Norway and Portugal.

Meeting agenda



ALCUE NET: The EULAC Bioeconomy Working Group of the Senior Official Meeting

San Jose, 10 October 2013

Venue: Hotel Tryp Sabana

Avenida 3, Calles 38 y 40, Calle 38, San Jose 1000, Costa Rica

Objective: To assess WG Bioeconomy progress (incl. ALCUE NET tasks) and to prepare for Senior Officials Meeting in Costa Rica, 2014

	Program
14:30-15:50	Brief presentation of the ALCUE NET and ERANET LAC projects + The EULAC Bioeconomy Working Group of the Senior Official Meeting: Activities carried out and expectation from the ALCUE NET <i>Eduardo Trigo, MINCYT, Argentina (20')</i> Elaboration/presentation of the Draft Concept Note on Bioeconomy to be presented in the next SOM in Costa Rica <i>Guy Henry, CIRAD, France (20')</i>
15:50 -16:05	<i>Coffee</i>
16:05-18:00	Round table: Discussion + recommendations on how to go forward Moderator: <i>Eduardo Trigo, MINCYT, Argentina</i>
18:00	Closure of meeting

1. Registration

All participants present at the meeting signed the attendance list presented on the page above. Each participant received, during registration, a set of documents in paper which included:

- Agenda
- Contact list of participants
- Documents
 - Template for the Delivered report of ALCUE NET: Bioeconomy report in the bi-regional STI cooperation addressing societal challenges (*See annex II*)
 - Last Report of the Bioeconomy SOM Working Group presented during last SOM in Brussels, April, 2013 (*See annex III*)
- ALCUE NET Project Summary (*See annex VII*)
- ERA Net LAC Project Summary (*See annex VIII*)
- Event Evaluation questionnaire (*See annex IX*)

2. Welcome

Mr. **Eduardo Trigo**, from the Ministry of Science, Technology and Productive Innovation of Argentina welcomed all participants to the meeting on behalf of the ALCUE NET Coordination.

1. General overview of the meeting objectives
2. Round table presentation: The participants introduced themselves.

3. Presentation of ALCUE NET & ERA Net LAC projects + The EULAC Bioeconomy WG of the SOM: Activities carried out and expectation from the ALCUE NET: Eduardo Trigo, MINCYT

1. A brief background of the EU-LAC Policy Dialogue process was presented to point out main SOM recommendations for INCO & ERA NET projects, like ALCUE NET & ERA Net LAC, to be focused on EU-LAC S&T Policy Dialogue & the JIRI implementation during 2013-2017 through the SOM WGs.
2. An overview of ALCUE NET and ERA Net LAC projects has been presented to the participants: objectives, strategic impact, main structure, implementation process and the central mechanisms for implementation.
3. The synergies between both projects were highlighted, as well as with other bi-regional thematic projects.
4. The EULAC SOM Bioeconomy main progress related to the activities that have been carried out (6 consultations since June 2011) was presented and 3 major areas were identified to be the focus of further discussion:

- a. **Proposal for Joint Call on selected RTD topics regarding Biorefineries, including biomass availability and conversion processes.** From the consultation held in Cali, Colombia, November 2012, the following research themes were identified:

	Topics
BIOTECHNOLOGY	• Artificial seeds for tropical timber product • a mobile device for multiplex pathogen detection in plants and the environment • Health promoting compounds from tropical plants • Bio-plastics
ECO INTENSIFICATION	• Isolation and characterization of genes/enzymes, microorganisms and compounds for sustainable phytosanitary management, fertilization and plant growth promotion of crops. • Bioprospection for processing agricultural and agro industrial waste.
BIODIVERSITY	• Establishment of an open access database of native plant species already prioritized in LAC countries, based on functional, nutritional, cosmetic, and pharmaceutical applications. • Standardization of valuable functional components in final products to meet the industrial quality requirements. • Screening for new bioactive metabolites and enzymes from terrestrial and marine microorganisms for food and cosmetic industry, based on market demand • Establish a collaborative platform to promote Quinoa production in LAC as a model for other under-utilized products
BIOREFINERY PRODUCTS	• Green Biorefinery: biorefinery of wet biomass – energy intensity • Green Biorefinery: biorefinery of wet biomass – new products • Lignocellulose Biorefinery - production of high value bio-based products • Oil-Based Biorefineries: Sustainable food production

b. Proposal for a LAC Observatory on Bioeconomy

Objective

- To Promote Bioeconomy in LAC by facilitating its knowledge to the general public and stakeholders
- To Provide specific information to those who drive Bioeconomy in the region
- To Establish a one-point entry to the LAC Bioeconomy and Bi-regional cooperation
- To provide Information support for decision making in policy development
- To provide a Promotion tool to increase levels of social acceptance of Bioeconomy
- To Offer a platform for ALCUE Bioeconomy stakeholders to exchange information.

Observatory actions

- To generate and collect systematically specific information related to Bioeconomy
- To Support policy making
- To Plan, develop & monitor bi-regional cooperation in Bioeconomy

Observatory tasks

- To establish mechanisms to facilitate access & up-dating of information of strategic value to the Bioeconomy
- To serve as a Link to already sources of qualitative-quantitative knowledge resources on selected topics
- To create an inventory of Bioeconomy related EC co-funded RTD bi-regional projects
- To monitor specific indicators of Bioeconomy in LAC and compare the performance of this sector with others located
- To provide information on access to Bioeconomy “success-stories” in the EU and LAC regions
- To provide information on access to LAC and EU key Bioeconomy stakeholder profiles
- To generate new information on themes identified as of strategic value

c. Proposal for Capacity Building: Bi-regional Master program in Bioeconomy

Capacity building, human resources development, through:

- Programs of mobility/interchange to facilitate training of EULAC scientists in EU and LAC universities and research organizations targeting Bioeconomy related disciplines
- The construction of EULAC bi-regional Master and doctoral programs in Bioeconomy

Goal: To Improve human resources capacities in bio-economy management by:

- Following the model of Bioeconomy
- Creating capacity to design/development/mgt of key Bioeconomy components: policies, sector markets, processes, platforms/hubs
- Including a methodology of case studies of concrete Bioeconomy experiences

Public/ students: public sector, government, private sector, researchers, civil society, NGOs,

Disciplines included:

- Bioeconomy principles & processes
- IPR law & management, regulations (national international)
- Market economics, trade and consumption issues
- Public policies economics
- Management, administration, business
- Engineering/process

Three different formulas are proposed:

- Post-graduate and under graduate formal modules on the Bioeconomy that can be inserted by LAC Universities in existing programs in agronomy, bio sciences, business, law, engineering, economics etc.
- Short-term tailor made courses on key Bioeconomy aspects to cater to selected mixed audiences of policy makers, business managers, research managers, NGOs, government agencies, etc.
- Formal, full-fledged bi-regional Master of Bioeconomy, including exchanges of students and professors, and student internships, whereby distance learning forms an integral part.

5. The proposed funding instruments to implement these activities were mentioned. During the round table, other instruments were explored.
6. The **Activities carried out in the framework of ALCUE NET project** were summarized as well as main inputs and next events:

Tasks

- To create an Observatory on relevant key thematic STI information, projects and assessments
- To do Networking: identification and organization of key actors and stakeholders
- To construct a Bi-regional RTD agenda
- To do Matchmaking (according to good practices) and priority topic profiles formulation
- To build Capacity and develop proposals to implement training programs
- To monitor of the development and impact of the joint activities

Inputs for ALCUE NET & SOM- Bioeconomy

- Report on the Bioeconomy area in the bi-regional STI cooperation addressing societal challenges
- Reports on the impact of Bioeconomy events (matchmaking, networking, twinning, etc)
- List of Bioeconomy target audience (key actors and stakeholders) constructed
- Construction and functioning of the Bioeconomy observatory
- Report on the state of bi- regional cooperation (including regional analysis on problems related to innovation and good practices) – All thematic areas
- Report on impact dimensions of the bi-regional cooperation with special focus on impact & outreach of ALCUE NET – All thematic areas
- Concept paper on issues ad hoc for the SOM – All thematic areas
- SOM Action Plan – All thematic areas

Events ALCUE NET- 1st period- Bioeconomy

- 9- 10 October '13 Bi-regional experts + policy workshop: Symposium on the Bioeconomy in Tropical America + Bioeconomy SOM Working Group in Costa Rica
- 23 October '13 ALCUE NET – CYTED: Multi Thematic Meeting on Renewable Energies, Biodiversity & Climate Change, Bioeconomy and ICT in Mexico
- March '14 Experts workshop for a qualitative interpretation and complementation of the results in Buenos Aires
- March '14 Bioeconomy meeting on capacity building and the formulation of pilot training programs in Cali, Colombia
- 1st week April '14 SOM + ALCUE NET Consortium Meeting in Costa Rica
- May '14 Yearly LAC NCP meetings in Uruguay

4. Elaboration of the Draft Report on Bioeconomy to be presented in the next SOM: Guy Henry, CIRAD

1. The ALCUE NET main input for the next Senior Official Meeting to be held in Costa Rica in April, 2013 will be the Bioeconomy report in the bi-regional STI cooperation addressing societal challenges

2. A draft Template for the elaboration of the report was presented with the following structure in order to put for the participants consideration and recommendations:

Section 1: Thematic Report

1. Bioeconomy's Background in LAC and EU
2. Current Bi-regional Cooperation Activities in Bioeconomy
 - a. EU framework programme and past experiences
 - b. Political framework
 - c. Towards Horizon 2020
3. Emerging Cooperation Activities
 - a. Science and Technology
 - b. LAC Observatory
 - c. Capacity Building
4. SOM as a tool to implement further cooperation actions
 - a. SOM background
 - b. ALCUE NET Project
 - c. ERANet-LAC Project
 - d. Other thematic projects

Section 2: Roadmap for implementation

Line for action	Activity	Work progress	Indicators	Responsibilities (Projects/ Institutions)

5. Round Table

1. A round table for discussion and recommendation on how to go forward was moderated by Guy Henry and Eduardo Trigo pointed out the 3 major areas that were presented in order to start working on the Bioeconomy's report:
2. **Proposal for Joint Call on selected RTD topics regarding Biorefineries, including biomass availability and conversion processes.**
 - a. Confusion between the topics identified in the meeting held in Cali and the report presented to the last SOM was solved during the ALCUE KBBE meeting held right after this meeting.

- b. It was remarked the idea that for a successful bi-regional integration into a joint proposal, the question regarding why a partner from LAC region should be involved taking into account the advantage and added value of their participation, need to be considered.
- c. The possibility to analyse the incoming HORIZON 2020 programme in the framework of the new calls will be examined.
- d. It is expected to make a round table consultation during next SOM (Costa Rica, April 2014), as a political decision making body, to involve interested regions/ countries in the Joint Call, thought national funding (common pot). A proposal will be elaborated including the link to the 3rd pillar of the new programme HORIZON 2020 related to “food security, sustainable agriculture, marine and maritime research & the Bioeconomy”.
- e. 3 new topics to be explored for future Joint Call were proposed during the meeting:
 - i. Design and screening for multipurpose crops (new)
 - ii. Characterization and uses of bio based waste and residues (modified)
 - iii. Small scale biorefinery (new)
- f. The list of topics was revised and updated during the ALCUE KBBE meeting held on the other day (October 11th). The final list is described below with the respective ranking:

	Topics	Rank
BIOTECHNOLOGY	• Artificial seeds for wood production	5
	• A mobile device for multiplex pathogen diagnosis in plants and the environment	4
	• Health promoting compounds from tropical plants	3
	• Biobased building blocks for polymers	2
	• Design and screening for multipurpose crops	1
ECO INTENSIFICATION	• Integrated pest management	2
	• Bio input for agriculture in a circular economy (closing the loop)	1
	• Characterization and uses of bio based waste and residues	2
BIODIVERSITY	• Integrated open access LAC databases on native organisms and their functionalities.	2
	• Screening for new bioactive metabolites and enzymes from terrestrial and marine microorganisms for food and cosmetic industry, based on market demand	1

BIOREFINERY & PRODUCTS	• Green Biorefinery: biorefinery of wet biomass – energy efficient processing	3
	• Lignocellulose and Green Biorefinery: production of new high value bio-based products	2
	• Biorefinery for sustainable food production	1
	• Small scale biorefinery	4

3. Proposal for a LAC Observatory on Bioeconomy

- a. It is expected to make a round table consultation during next SOM (Costa Rica, April 2014) to inform and involve interested regions/countries. A proposal framework will be elaborated to be presented to the Senior Officials regarding What? (Activities) How? (Funding instruments) and How much?
- b. The possibility to adapt the methodology of the EU Observatory will be considered
- c. Two main issues were discussed: implementation of the observatory (funding) and maintenance.
- d. The different instrument for funding the LAC observatory were summarized and analysed:
 - i. Submission of a proposal for funding in the framework of the HORIZON 2020 programme
 - ii. Proposal of Joint Call for funding the observatory in the framework of the SOM Consultation to include countries commitments.
 - iii. ALCUE NET project for funding the implementation phase of the observatory
 - iv. Blogs added to interested countries' websites (Ministries) + collect information
- e. For the maintenance phase, the possibility to include the CEPAL, IICA, RECYT were mentioned as pertinent.

4. Proposal for Capacity Building: Bi-regional Master program in Bioeconomy

- a. It was noticed that some funding instruments taken into account for funding capacity building (Master on Bioeconomy) were finalized.
- b. The need to explore the ERASMUS + programme was emphasized. Jimena Arango from MENON provided additional information (*see annex VI*)
- c. The progress made by Finland during last SOM supporting the idea to include a "Mobility Working Group" will also be explored. Maria Lima Barbosa from VTT is expected to provide more information.
- d. The possibility to submit a proposal for funding the Master in the framework of the HORIZON 2020 programme will be examined.
- e. The opportunities of the Directorate General Development and Cooperation (DG DEVCO) will also be studied for the Capacity Building proposal.
- f. It is also expected to make a round table consultation during next SOM to involve interested regions/ countries.
- g. The proposal for Capacity Building was revised and updated during the ALCUE KBBE meeting held on the other day (October 11th). A draft proposal was elaborated summarizing:

Human Resources

Task: - make an inventory of existing initiatives, training programs in the field of bio-economy in the EU and LAC region (qualitative and quantitative: what is covered? What is useful? What is given were? (What are the funding instruments?)

- **Introductory seminars** on different topics of the bio-economy, webinars free to download in different languages
- **Short bio-economy specific courses** at postgraduate level, make use of existing courses and e-distance courses, webinars e.g. legal, marketing, management, strategic planning, business development, engineering, biotechnology, bioinformatics, valorisation innovation partnerships... As an example the lesson learnt from the e-course (distance learning) in Biosafety in Plant Biotechnology that has been annually organized at the Marche Polytechnic University (MPU) in Italy and Ghent University (UGent) in Belgium since 2006, will be taken into account (*see annex IV*).
- **Summer courses tailored at specific audiences** that are modular in structure with flexibility for the students to select one or more modules taught by an international faculty and with a registration fee to (help) cover expenses. As an example, a Bioeconomy short course was given in Ghent. (*See Annex V*)
- **Specialized courses** for training of **technical** (operational) **skills** (train the trainer's principle). *Remark: trainings should be given in frame of a mutual project, fit into a cooperation, funding schemes needed for mobility of students and teachers*
- **Bi-regional Masters in the Bioeconomy:**
 - Mundus+?
 - Lessons learnt from the e-distance learning course (postgraduate in Biosafety Ghent University/UNIDO, one academic year): strong coordination needed, 20 students maximum (intensive for teachers e.g. discussions, assignments), local faculty needed, funding for scholarships (registration fee and on campus periods) and also for making the contents of the modules and upgrading at a yearly basis (fast moving field), selection of students, target audience important, internet problems can happen
 - Language?

6. Next steps

- It was decided to continue working on the selected topics for Joint Call and the Capacity Building area during the following day in the framework of the ALCUE KBBE meeting held on October 11th.

ALCUE NET event pictures



7. Acronyms and abbreviations

ALCUE	América Latina y Caribe – Unión Europea
ALCUE NET	Latin America, Caribbean and European Union Network on Research and Innovation
ALCUE-KBBE	Towards a Latin America and Caribbean Knowledge Based Bio-Economy in partnership with Europe
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement (France)
CYTED	Ibero- American Programme for Science, Technology and Development
ERANet- LAC	Network of the European Union, Latin America and the Caribbean Countries on Joint Innovation and Research Activities
ERA-Nets	European Research Area Networks
EU	European Union
EULAC	European Union, Latin America and the Caribbean
INCO-NETs	Platforms bringing together policy makers and stakeholders of an individual targeted region
IPR	Intellectual Property Rights
JIRI	Joint Initiative for Research and Innovation
JIRI	Joint Initiative for Research and Innovation
LAC	Latin America and the Caribbean
MICITT	Ministerio de Ciencia y Tecnología y Telecomunicaciones (Costa Rica)
MINCYT	Ministerio de Ciencia, Tecnología e Innovación Productiva (Argentina)
NCPs	National Contact Points for the Seventh Framework Programme
RTD	Research & Technological Development
S&T	Science & Technology
SOM	Senior Officials Meetings
SOM	Senior Officials Meetings
STI	Science Technology and Innovation
WG	Working Groups

ANNEX I: Attendance List

ALCUE NET- The EULAC Bioeconomy Working of the SOM			
Surname	Name	Institution/Company	Country
Arango	Jimena	ENLACE	BELGIUM
Arguello	Silvia	MICITT	COSTA RICA
Arias Dipré	Juan José	MESCYT	DOMINICAN REPUBLIC
Aycirix	Luciana	MINCYT	ARGENTINA
Barbosa Lima	María	VTT	FINLAND
Blache	Caroline	CIRAD	FRANCE/ARGENTINA
Bruins	Marieke	WAGENINGEN UNIVERSITY	THE NETHERLANDS
Buritica Ospina	Simón	COLCIENCIAS	COLOMBIA
Burssens	Sylvia	UGHENT	BELGIUM
Caballero	Catherina	SENACYT	PANAMA
Diels	Ludo	VITO	BELGIUM
Gamiette	Franciane	GAGE	GUADALUPE
Henry	Guy	CIRAD	FRANCE
Ingelbrecht	Ivan	UGHENT	BELGIUM
Jablonowski	Nicolai David	Jülich Research Center (FZJ)	GERMANY
Martin	Mariano	UNIVERSITY OF SALAMANCA	SPAIN
Pittaluga	Lucía	MEC	URUGUAY
Plan	Damien	EC DIRECTORATE-GENERAL JRC	EU
Rocha	Priscila	MCT	BRAZIL
Rojas	Keilor	MICITT	COSTA RICA
Samano Rocha	Hector	CONACYT	MEXICO
Tinto	Winston	CSF	BARBADOS
Trigo	Eduardo	MINCYT	ARGENTINA
Ulate	Eliana	MICITT	COSTA RICA
Van Hyfte	Cindy	CIRAD	FRANCE

ANNEX II: Template for the Delivered report of ALCUE NET

Bioeconomy report in the bi-regional STI cooperation addressing societal challenges

DRAFT STRUCTURE OF THE REPORT

Section 1: Thematic Report

1. Bioeconomy Background in LAC and EU (2 pages)
2. Current Bi-regional Cooperation Activities in Bioeconomy
 - a. EU framework programme and past experiences
 - b. Political framework
 - c. Towards Horizon 2020
3. Emerging Cooperation Activities
 - a. Science and Technology
 - b. LAC Observatory
 - c. Capacity Building
4. SOM as a tool to implement further cooperation actions
 - a. SOM background
 - b. ALCUE NET Project
 - c. ERANet- LAC Project
 - d. Other thematic projects

ANNEX III: Report of the Bioeconomy SOM Working Group

Update on the objectives, planned key activities and composition of Senior Officials Working Groups in the context of the Joint Initiative for Research and Innovation Bioeconomy between countries in the European Union, Latin America and the Caribbean. *April 2013*

1. *Bioeconomy including Food Security*

The specific objectives of the **Bio-Economy (“BE”) working group** are (i) to contribute to global supplies while improving agricultural environmental performance and (ii) to exploit new opportunities in agricultural/biomass production for equitable growth.

In the short term, the working group targets the integration or association of funded LAC and EU research teams into existing biorefinery (focusing on biomass availability and conversion processes) and food security (quality and quantity of available food supplies) research projects. In the longer run, the goal is the exploration of joint calls to extend and complement other experiences in terms of the required operational mechanisms and their financial viability.

The participating countries in the BE Working Group are:

Co-Leaders:

- Argentina - Ministerio de Ciencia, Tecnología e Innovación Productiva (MINCYT)
- France - Ministry of Higher Education and Research

LAC members:

- Bolivia - Ministerio de Educación
- Mexico - Consejo Nacional de Ciencia y Tecnología (CONACYT)
- Chile - Comisión Nacional de Investigación Científica y Tecnológica (CONICYT)
- Costa Rica - Ministerio Ciencia y Tecnología (MICIT)
- Panama - Secretaría Nacional de Ciencia, Tecnología e Innovación (SENACYT)
- Peru - CONCYTEC
- Guatemala - Secretaría Nacional de Ciencia y Tecnología (CONCYT/SENACYT)
- Nicaragua - Consejo Nicaragüense de Ciencia y Tecnología (CONICYT)
- Uruguay – Ministerio de Educación y Cultura (MEC)
- Colombia (COLCIENCIAS)

EU members:

- France - Ministry of Higher Education and Research
- Germany - Federal Ministry of Education and Research (BMBF)
- Spain - Ministerio de Economía y Competitividad (MINECO)
- Malta - Malta Council for Science and Technology (MCST)
- Austria - Federal Ministry for Education, Science and Culture
- European Commission

Other experts from other EU-LAC countries have participated in different WG activities.

Update of WG BE activities by topic:

Topic	Activity	Work progress
1. Proposal for Joint Call on selected RTD topics regarding Biorefineries, including biomass availability and conversion processes	1.1. Proposal for a joint call on Bioenergy together with the Renewable Energy working group	EULARINET EU-LAC Bioeconomy & Energy Working Groups Meeting Toulouse, June 2012: discuss the formulation of a Joint Call on selected RTD topics regarding Biorefineries, including biomass availability and conversion processes
	1.2. Proposal for a joint call on selected RTD topics on Bioeconomy pathways: Biotechnology, Biodiversity sustainable use, Biorefinery, Eco-system services, Ecological Intensification and Value chain efficiency	Several consultations held by ALCUE KBBE, ENLACE and EUCARINET allowed to identify priority research topics for bi-regional cooperation in R&I in the area of Bioeconomy. (Annexes 1, 2, 3)
	1.3. Good practices on Joint Call formulation and implementation mechanisms → Explore possibilities of “TOP-UP” procedure using national co-funding, vis-à-vis joint/coordinated calls	EULARINET EU-LAC Bioeconomy & Energy Working Groups Meeting Toulouse, June 2012: exchange highlights on the implementation mechanism.
2. LAC-based Bioeconomy Observatory	2.1. Initiate implementation as part of ALCUE-Net	Conceptual Framework for the Observatory on BE for LAC has been shared with other ALCUE NET WP/SOM working group (Annex 4)
	2.2. Mapping of relevant policy and regulatory frameworks in the LAC countries of interest and complemented by EU policy analyses	- Deliverable 5 of ALCUE KBBE “Assessment of BIOECONOMY related LAC institutional and regulatory (I&R) capacities and their importance for successful BIOECONOMY development in LAC, including relevant policy recommendations” - ALCUE KBBE Working paper n°2013-04: “Policy and institutional framework for the development of bioeconomy in Latin America and the Caribbean.” - EU database on bioeconomy

		FP7 funded projects
	3.3. Mapping of relevant R&D capacities, programs and projects	• ALCUE KBBE Deliverable 4 and Working paper n°2013-03 on “Current status and future potential of knowledge based bio-economy related research & innovation in Latin America and the Caribbean and policy recommendations”
	3.4. Bioeconomy “success-stories” in the EU and LA regions	• ALCUE KBBE started a “collection” of BE related success stories. • ALCUE KBBE Newsletters published a set of EU and LAC BE related success story
3. Proposal for Capacity Building: Bi-regional Master program in Bioeconomy	3.1. Short courses	Overall strategy, contents, partners, instruments + 1-2 events implemented : Synergy with the regional LAC BioSciences platform developed by CIAT
	3.2. BE module to insert	Organize partners, contents, clients, funding
	3.3. MS in BE	Explore the appropriate EC instruments available + partnering

Events held since last SOM of March 2012, Concepcion, Chile:

6 June 2012, Toulouse, France: The EU-LAC Bioeconomy & Energy SOM Working Groups Meeting’s general objective was to discuss a future Joint Call proposal on Biorefineries, some experiences on co- finance mechanism were presented in order to learn from past projects experiences. The following experiences on co- finance mechanism were exposed: EULANEST ERA NET project; PLANT KBBE project as a transnational initiative representing funding partners from France, Germany, Portugal, and Spain; BIOTEC SOJASUR II project; EU-Mexico Nano Technologies Coordinated call.

October 2012, Brussels, Belgium: The CA and Caribbean Experts’ Dialogue workshop on Bioeconomy organized by the EUCARINET and ENLACE projects in October 2012, wished to share and validate the first findings of the study with respectively Caribbean and Central American experts and further proceed to the establishment of a roadmap per subtheme identifying and prioritizing the interventions points to make the Bio-economy a reality. In April 2012, a preparatory workshop has been organized in Curaçao, which identified 4 “priority” potential Bioeconomy R&D themes / pathways which were tackled during the Brussels workshop:

“sustainable management of marine biodiversity”; “Food Value Chain efficiencies”, “Eco-intensification” and “Eco-services”.

The results of this consultation are available in the minutes of the event “Caribbean Bioeconomy in the context of the EU-LAC Initiative on Research and Innovation - Summary of proceedings” and “Towards a Caribbean & Central American Knowledge Based Bio-Economy: Visions, Pathways and Priorities”. **Annex 1** presents the key messages for the implementation of BE in CA and Caribbean regions.

5-6 November 2012, Cali, Colombia: the Workshop “Construction of Bioeconomy roadmap and RTD agenda for LAC” was 2nd consultation of ALCUE-KBBE aiming at identifying priority R&D topics for a **bi-regional cooperation agenda for Research and Innovation in Bioeconomy** was held in November 2012 in Cali (Colombia). The leading groups in Bioeconomy related to R&I areas from EU and LAC countries were also identified. **Annex 2** presents the priority RTD topics identified for which topic profile were formulated.

19-20 March 2013, Buenos Aires, Argentina: the workshop “LAC-EU Bioeconomy Policy Consultation: Towards a bi-regional cooperation agenda” was the 3rd consultation of ALCUE-KBBE ALCUE NET first experts consultation on BE, aimed at identifying the bioeconomy related policy issues in LAC, and further formulate policy recommendations for every identified issue. The result of this workshop is a **Bioeconomy Policy roadmap and Recommendations** for LAC providing a set of recommendations. **Annex 3** presents the set of recommendation which came out from this workshop.

Organizations/institutions that participated in any part of the SOM consultation in 2012-2013:

Country	Organization
Argentina	MINCYT
Argentina	Obispo Colombres Agro-industrial Experimental Station
Argentina	INTA
Argentina	PROIMI
Argentina	PLAPIQUI
Argentina	LABORATORIOS BIAGRO
Argentina	CEO
Argentina	Traulenco
Austria	Öko Cluster and University of Kassel
Barbados	UWI
Belgium	Ugent
Belgium	RIMS
Brazil	Univ de Parana
Brazil	Embrapa
CELAC	CEPAL

CGIAR	BIOVERSITY INTERNATIONAL
Chile	Universidad de Concepción
Chile	Consumer International
Colombia	CENIPALMA
Colombia	Fedepalma
Colombia	CIAT
Colombia	PONTIFICIA UNIVERSIDAD JAVERIANA
Colombia	COLCIENCIAS
Colombia	ICESI UNIVERSITY
Colombia	Universidad Nacional de Colombia
Costa Rica	UCR
Costa Rica	Instituto Tecnológico de Costa Rica
Costa Rica	MIN MEDIO AMBIENTE
Costa Rica	MICIT
Curaçao	CARMABI Foundation
Dominican Republic	UASD
Dominican Republic	Loyola Specialized Institute of Higher Studies
Dominican Republic	Embassy of the Dominican Republic in Brussels
Dominican Republic	Plan Yaque
Finland	fibic
France	CIRAD
France	Insa Toulouse
France	Université de LaRochelle
France	MESR
France (Guadeloupe)	INRA
France (Martinique)	UAG
France/Argentina	Ambassade de France en Argentine
France/Chile	French Embassy of Chile
Germany	JULICH
Guatemala	Consejo Superior Universitario Centroamericano
Guyane	University of Antilles
Honduras	Universidad Pedagógica Nacional
Italy	APRE
Italy	University of Bologna
Latin America	IICA
Mexico	CONACYT
Mexico	UNAM
Mexico	Colegio de la Frontera Sur (EcoSur)

Mexico	CINVESTAV
Nicaragua	UNA
Nicaragua	CONICYT
Panama	UNACHI
Peru	PUCP
Portugal	ADI
Portugal	FCT
Portugal	LNEG Portugal
Portugal	Faculty of Engineering, Oporto University (FEUP)
Portugal	University of Aveiro
Portugal	Algafuel/NECTON
Portugal	Ambisys, Grupo Monte Adriano
Portugal	IBET
Spain	MINECO
Spain	Algaenergy
Spain	Centro Nacional de Energías Renovables
Spain	INIA-Ministerio de Economía y Competitividad
Spain	DBA Center
The Netherlands	NIOZ
The Netherlands	WAGENINGEN UNIVERSITY
The Netherlands	BIOMASSRESEARCH
Trinidad and Tobago	UWI
Uruguay	INIA

ANNEX 1

KEY MESSAGES – CARIBBEAN (EUCARINET project)

- The Caribbean area endeavours a privileged position with regards to terrestrial and marine biodiversity availability for the development of bio-based strategies.
- There is however a high diversity in the actual use of biomass due to differences in technological equipment, institutional and legal frameworks.
- Bio-economy plans are to be developed based on a sustainable use, holistic and integrated approaches.

The pathways below were identified as priority domains for development of a bio-economy in the Caribbean during the EUCARINET dialogue in Brussels October 2012. To ease reading, they have been linked to the 3 priorities identified by the EU-LAC Senior Official Meeting Working Group on Bio-Economy. Some of these priority pathways are also relevant to the Climate Change and Biodiversity Working Group

EUCARINET-ENLACE Bio-Economy Priority Pathways	Priorities EU-LAC SOM Working Group on Bio-Economy			
	Capacity Building	EU-LAC Bio-Economy Observatory	Biomass Conversion	Beneficiary (Caribbean, Central America)
FOOD VALUE CHAIN EFFICIENCIES				
Capacity building for all stakeholders of the food value chain	✖			CAR
Information system on Caribbean fruit and vegetables		✖		CAR
Adding value to wastes from local agri-food processing			✖	CAR
Food Processing – effects & info about bioactives compounds	✖	✖		CA
ECO-INTENSIFICATION AND ECO-SERVICES				
Eco-tourism as a basis for sustainable development	✖			Both
Agro-diversification Synergetic production (agro-ecology)	✖			Both
Water and soil retention (water management & value)	✖	✖		Both
Climate change mitigation	✖			CAR
Integrated pest, waste and nutrient management	✖		✖	CA
Organic farming and sustainable land management	✖	✖		CA
No-till and conservation tillage agriculture		✖	✖	CA
Biodiversity conservation and sustainable management of ecosystems	✖	✖		CA
SUSTAINABLE MANAGEMENT OF MARINE BIODIVERSITY				
Integrated Coastal Zone Management and system approaches	✖	✖	✖	Both
Marine ecosystem degradation and its effects on human health		✖	✖	Both
Environmental profit and loss accounting / true pricing	✖	✖		CAR
Integrated aquaculture		✖	✖	CAR
Scientific Data Collection	✖	✖		Both
Natural Resources governance and socioeconomic studies	✖	✖		Both

This table gives account of the results achieved on the Biodiversity and climate change dialogue workshop that took place in Panama. Both ENLACE and EUCARINET results are recorder below. Since there is some overlapping between the two themes we expose here the most relevant research lines for the Bio economy discussion.

EUCARINET – ENLACE Bio-Diversity Priority Lines of Research	Beneficiary (Caribbean, Central America)	Leading Country (ies)	Water-related problems (the way they could alter biodiversity and ecosystem processes).	Bioprospecting, considering technology and knowledge transfer and benefit sharing	Interdisciplinary research looking for multiple and interactive factors that lead to biodiversity loss and impacts on ecosystem functioning.
Climate change and its relation with ecosystems (regional integrated approach including scenarios, modeling tools and assessment of climate extremes)					
Changes in behavioral responses in key species. - In depth exploration of invasive species theme	Both		x		x
Research on tropical forests in CAC region - mountain ecosystems Research in indicators (butterflies)	Both	Mezoamerica region (Guatemala, Mexico)	x	x	x
Water use practices in the communities - GIS data and Tools	Both	Dominican Republic	x	x	x
Sustainable management of natural resources and natural hazards related problems					
In depth research on fresh water and “Marine aspects” in both resources and policies - E.g., coral reefs, Impact on fisheries-	Both	Curaçao	x	x	x
Volcanology and their impacts: relation with crops, water and plants (i.e. greenhouse emissions and toxicity).	Both	Dominica or Costa Rica			x
Research and scale issues and models: i.e. habitat characterization and species inventories for a base line	Central America	Panama		x	x
Scenarios of climate change (Distribution and extinction risk of species)					
Land use change – forest ecosystems protection & sustainable land and resource exploitation.	Both	Honduras	x		x
Changes in cloudiness resulting from increasing sea surface temperatures likely to affect eco systems - Genetic improvement of bio-prospection reproductive and frequencies of flowering of trees.	Both	Nicaragua	x	x	x
Indicators and data collection-transversal themes for research cooperation	Both	Costa Rica	x	x	x
Research – Bioprospecting in dry forest in CAC region: wild life and human communities living in water limited areas - microorganisms potential for finding innovative solutions and products E.g, pharmaceutical field.	Central America	Mezoamerica region (Guatemala, Honduras, Nicaragua, Mexico)	x	x	x
Creation of a regional infrastructure to better monitor the direct impacts on tropical forest, and coastal and marine ecosystems	Both	Aruba		x	x

KEY MESSAGES- CENTRAL AMERICA (ENLACE project)

GENERAL CONCLUSIONS

The workshop allowed fruitful knowledge exchange and the identification of common areas of interest of European and Central American research groups on BE. Understandings of similar problems and different perception of various BE concepts emerged. It was the case for topics such as Food Chain efficiencies (zero waste) and Eco-intensification and Eco-systems services.

It is clear that Central American nations, despite the political difficulties faced from 2008 to 2010, still have room to grow together in order to advance our human development in a sustainable way. It is a major joint endeavour that requires a combination of national tasks and the removal of political blockages. Likewise, each country has to devote strong efforts to reduce social exclusion and by doing so, they will be able to strengthen institutional capacities both nationally and regionally. There are at least three areas of opportunity to articulate efforts: reversion of the insecurity climate prevailing in the region, risk management and climatic change, and building a common logistics and infrastructure platform that fosters regional interconnection. Any proposal to foster a Bio Economy initiative, should take into account the social and political context of the region.

As was concluded in the workshop, there are two main aspects that, once tackled, will contribute to the realization of a vision of Central America as an integrated region, clearly aware of their common goals, capabilities and resources. These are: the development of a broad regional communication infrastructure, both physical, (roads) and digital (Central American fiber optics backbone for data exchange), and new mechanisms to exchange knowledge, experiences, failures and aspiring goals. Central American region has “Centers of Excellence”, groups of high level scientific and technological expertise with a longstanding experience in collaborating through international networks, mainly in bilateral terms. This is why, it is time for our countries to expand this bilateral accomplishments regionally.

The consensus reached in the Dominican Republic Dialogue Workshop, sets the basis for further discussing the topics that were identified and discussed as potential topics of mutual interest:

- 1) Research on biodiversity to “optimize ecological services”,
- 2) Use of microorganisms, for food and non-food use,
- 3) Food and food chain related issues,
- 4) Optimization of the use of biomass for energy and industrial uses.

In terms of Marine Biodiversity the dialogue workshop panel evidenced that a great long-term efforts for strategic prioritization are required to develop an economically and ecologically balanced approach for coastal zone. A sustainable development is necessary, as coastal biodiversity conservation is indispensable for such activities. More time would have been necessary to develop pathways in a deeper way. ICZM in particular must be further developed before definite strategy goals are established for research cooperation between CA and the EU concerning the bio-economy issue.

In terms of Food efficiencies, the group agreed that more issues should be discussed. In particular in areas related to food chain structure, distribution of import and export of food products, generation of food waste (access to production, cold chain availability), land tenure legal systems,

taxes and trade regime, fair trade policies, certification and labelling financial and credit policies, access to markets by small producers, use of information and communication technologies, relevance of energy biomass production and effects of climate change.

In terms of Eco-intensification and Eco-services, clean production, social responsibility and energy efficiency were reflected on the discussion as a cross cutting issues. All this points take into account the worries of the panel regarding regional and global climate change impact

RECOMMENDATIONS

Although there was evident need to deepen on the pathway analysis during the workshop panels, some initial recommendations stemming from the dialogue have been identified. These can be taken as critical inflection points that could guide policymakers and researchers on a smoother cooperation for an active development of R&D&I.

Trans disciplinary research: Development of local solutions with those, who can/want to apply them, solutions that work, are of benefit for local communities and that are most convincing. Create knowledge by means of implementation of research projects according to family needs.

Scientific data collection: Overcome constraints pertaining to policy and weak institutional support by facilitating investment for sustainable research infrastructures and data access. This would facilitate the opportunities to work with existing data and experiences to identify major socioeconomic and anthropological issues.

Community empowerment: Develop competences and capacities in the rural family in the management of his or her farming systems, to promote ways of rural associative and organizational structure of the family that aims to articulate the agro feeding chain. Foster an entrepreneur culture in youngsters that permit generation of quality and sustainable employment, to establish educative modules of GAP that permit diffusion (TT) of knowledge amongst farmers and technician. Promote efficient productive systems that guarantee food sovereigns and security in the rural family.

Improving governance and sensibilisation: Develop necessary changes in human/society behavior in the face of the on-going loss of coastal and wild habitat and continue the re-structuration of these societies. Focus on particular needs for human resources to foster governance-related research in the region and needs to develop appropriate methodologies for social and economic valuation for sustainable bio-diversity management.

ANNEX 2

ALCUE-KBBE project : Bioeconomy priority RTD topics

Sustainable use of Biodiversity

Local use of biodiversity:

- Establishment of an open access database of native plant species already prioritized in LAC countries, based on functional, nutritional, cosmetic, and pharmaceutical applications.

- Establish a collaborative platform to promote Quinoa production in LAC as a model for other under-utilized products

High tech development:

- Standardization of valuable functional components in final products to meet the industrial quality requirements.
- Screening for new bioactive metabolites and enzymes from terrestrial and marine microorganisms for food and cosmetic industry, based on market demand.

Ecological intensification

- Isolation and characterization of genes/enzymes, microorganisms and compounds for sustainable phytosanitary management, fertilization and plant growth promotion of crops.
- Bioprospection for processing agricultural and agro industrial waste.

Biotechnology products, tools and processes

- Plant propagation and seeds (tissue culture) : Artificial seeds for tropical timber product
- Mobile device for multiplex pathogen detection in plants and the environment
- Health promoting compounds from tropical plants
- Bio-plastics

Biorefineries and bio-products

Decentralized small scale biogas units:

- Small scale biorefinery of rapeseed/ Jatropha/oil crops/ sugar cane residuals in rural areas for the production of biodiesel and protein as animal feed
- Small-scale production of ethanol from starchy crops

Demonstration projects in biorefineries

- Green Biorefinery: biorefinery of wet biomass:
 - energy intensity
 - new products
- Lignocelluloses' Biorefinery - production of high value bio-based products
- Oil-Based Biorefineries: Sustainable food production

ANNEX 3

ALCUE-KBBE project: Bioeconomy Policy recommendations for LAC

Blue shading = High potential for a win-win cooperation with EU

Science and Innovation

Science Base
Create a BE Observatory/Regional database using information already available on regulations, incentives, policies, resources, etc. relevant for the development of a LAC Bioeconomy for regular assessing its progress and impact, including the development of relevant forward-looking, modeling and assessment tools. Such an Observatory should cooperate by exchanging data, experiences and best practices with the relevant EU observatory or other relevant bodies in EU member states.
Governance
1. Develop National BE Strategies and/or National Committee or Council to implement workable action plans (e.g. who does what, when, with what resources, etc.) in consultation with relevant public, private, academic and social stakeholders
2. Generate / strengthen regional, national and sectoral policies, funding mechanisms and governance structures on STI development and technology transfer leading to the build-up of bioeconomies, and establish corresponding regional collaborative platforms for BE related R&D and bio-based businesses, using i.e. PPP mechanisms

Human resources and Social Participation

Human Resources
1. Build-up qualified human resources with integrated multidisciplinary bioeconomy capacities. - Develop specific trainings programs : <i>Technical</i> : IPR management, communication, product development, market analysis y marketing, innovation, <i>Academic</i>: Specialization:/Master in bioeconomy, - Bi-regional exchange programs for scientists and students - Develop adequately funded programs and incentives to attract highly qualified human resource to public and private academic and research institution, in particular BE related pathways - Promote the introduction of the bioeconomy concept in activities of the academic programmes in bioeconomy-related fields (e.g. seminars, workshops, etc.).
Social Participation
1. Develop general purpose and especially targeted (e.g. regional, industrial, scientists,

students, gender, consumers) awareness programs on bioeconomy related concepts (e.g. science and technology, eco-friendly practices and benefits, efficient biomass use, etc.) through already existing network and civil association (e.g. Consumers International).
2. Develop / strengthen meaningful dialogue mechanisms to engage BE stakeholders and consumer in the development of BE policies, programs and projects. (i.e.: through social networks)
3. Give incentives to articulate results-driven Private-Public Partnership platforms
4. Organize annual stakeholder meetings on regional bases and from time to time covering pan-Latin-American activities
5. Identify, evaluate, incubate and scale-up BE related ventures/businesses

Supporting market development

Market and regulation related policies
1. Assist small businesses in the Identification of potential markets and develop value chains for BE products through pilot projects and demonstration activities - Develop green procurement incentives - Appropriate selection of topics in funding mechanisms (project calls)
2. Stimulate and facilitate international trade of BE products through the development of appropriate market standards and regulations (ex: responsible soya roundtable) and the identification of current trade restrictions and other potential obstacles for the development and use of bio-based products in the market.
3. Create incentives for BE start-ups, risk capital, seed capital, company developments in collaboration with the private sector, in particular with a view to pilot and demonstration activities i.e. for biorefineries
4. Streamline existing procedures and regulations on access to genetic resources for the development of value-added products and developing adequate IPR and other mechanisms for sharing the benefits with local counterparts
5. Streamline norms for development and use of clean technologies and ecosystem services. (i.e. waste as valuable bio-product)
6. Develop and implement timely adequate regulatory frameworks for the management of products derived from novel technologies, involving relevant technical stakeholders and consumer organizations.
7. Discuss the possibility of elaborating Initiatives like the EU Lead-Market Initiative or the US bio-preferred programme also as models, offering space for future cooperation between the LAC and the EU, in particular when discussing norms and standards for biomass derived bio-based products and processes.

ANNEX 4

ALCUENET WP4 –

Conceptual framework for the Observatory on Bioeconomy (task 4.1)

I. What is an observatory in the context of ALCUENET

The concept of “observatory” in social, technical and political areas has been utilized to cover very different types of instruments, ranging from information desks, news services, innovation intelligence and complex databases, to scientific and political support centers on a given topic (policy analysis and evaluation, the *Observatorio de Políticas Públicas de America Latina*, OPPAL, <http://www.oppal.deusto.es/>, or the support for political resistance movements, as the *Observatorio Petroleo Sur*, of Argentina, www.opsur.org.ar, which concentrates on providing information on the oil industry environmental impact in support of local environmental activist groups.

For the purpose of ALCUENET, the idea of observatory is taken to be that of an instrument aimed at the systematic and “permanent” development of specific information (data collection and value adding, quantitatively & qualitatively) to support policy making, program development and monitoring of the different dimensions of bi-regional cooperation on the JIRI’s priority themes (Biodiversity and Climate Change, ICTs, Bioeconomy, including Food Security and Renewable Energies).

II. The Bioeconomy observatory

In this context, the ALCUENET Bioeconomy observatory is defined as an instrument (i) to serve all the stakeholders involved in research and innovation of bi-regional cooperation (members of the research and development community, policy makers, private sector, mainly but not exclusively), (ii) in support of the monitoring (collecting, updating) of relevant indicators and trends (policies, capacities, programs, projects, investments, impacts) and help anticipate new and emerging issues delineating future opportunities.

To the above purpose the task will:

- Establish mechanisms to facilitate rapid and efficient access and up-dating of information of strategic value to the bioeconomy in general and specific pathways in particular
- Link to already established sources of qualitative-quantitative knowledge resources on selected topics
- Inventory of Bioeconomy related EC co-funded RTD bi-regional projects
- Access to Bioeconomy “success-stories” in the EU and LA regions
- Access to LAC and EU key Bioeconomy stakeholder profiles
- Whenever necessary or opportune, to generate new information on themes identified as of strategic value for the improvement of bi-regional cooperation in their specific fields.

The 4.1 task – Observatory construction, is being led by a small taskforce of partners (Cirad, Mincyt, DLR, Mineco, Conacyt, MCT), supported by (i) contracted expert for specific activities/products and (ii) a virtual advisory/support group of ALCUE Bioeconomy experts. The

latter group will seek meeting opportunities piggy-backing on Bioeconomy related conferences etc. (e.a. ALCUE-kbbe, BA; RRB9, Antwerp).

Given the complexity of task – instrumental, logistical – it is proposed that the operational plan for the development of the observatory is organized in three phases:

The specific products of the observatory will be in terms of:

- Establishing a one-point entry to the LAC bioeconomy and Bi-regional cooperation in the related areas
- Information support for decision making in policy development and identification of R&D, investment and trade opportunities
- Serving as a promotion tool for generating increased levels of social acceptance of bioeconomy based development strategies, and
- Offering and information exchange platform for ALCUE bioeconomy stakeholders.

III. Implementation strategy/schedule

III.1 Initial contents of the observatory

The initial coverage of the observatory will focus on issues related to (i) general aspects of the bioeconomy, and (ii) three of the six bioeconomy pathways identified by the ALCUE-KBBE, which in part have served as basis for the discussions of the SOM Working Group on the Bioeconomy including Food Security: eco-intensification, biotechnology products and processes, and biorefineries and bio-products. These three pathways have been selected as initial entry points for the development of the observatory because their “*productivist*” orientation and direct relation to the food security dimension of the bioeconomy – which was defined explicitly by last SOM – and also because the other pathways were either covered by other WPs in ALCUENET (biodiversity) and/or represent areas which at this time are still institutionally bounded and consequently, their coverage would be extremely complex.¹ The final structure of the observatory will also take into consideration potential synergies with the proposed observatory of the European bioeconomy and other similar activities by other institutions. In this sense the strategy will seek to optimize this synergies by relying in as much as possible in the activities of strategic partners and investing ALCUENET efforts and resources in filling the “information gaps” and building the information shell through which all relevant information can be easily accessed by interested parties.

Within this general approach a first set-up will seek to cover, at the general bioeconomy level, the following fields & topics:

- A “who is who” in the LAC bioeconomy map

¹ Although the SOM talks about bioeconomy and food security, the observatory name will refer only to the bioeconomy. The reason for this is that the bioeconomy is itself defined in terms of the innovative response (use of biomass resources and /or biological processes) for effective response to anticipated global societal challenges, with one of them being that of meeting the food and fiber demands of a growing global population which is expected to reach more than 9 billion people in the next 30 years (BECOTEPS.....) That being the case the use of the addition is redundant and should be brought up for consideration and review during the next SOM.

- Data base on EC co-funded bi-regional projects (ALCUE-KBBE + SAH-YOG will serve as starting point) – Links to other EC co-funded projects data bases.
- Data base of program and projects funded by LAC countries
- National policies and strategies
- Natural resources issues
- Capacity development issues, including human resources development
- Regulatory issues (IPR, biosafety, market standards)
- Production /consumption / trade indicators (based on existing data bases)

For the selected pathways (by country) the focus will be on:

- R&D capacities, programs and projects
- Specific technology issues
- Specific policies and regulations
- Relevant private sector information (major investments, trade organizations, etc)
- Success stories

III.2 General implementation schedule

Three main phases can be identified

Phase I. 2013-15

- Conceived as a trial run
- Fully funded through project (ALCUE-Net) resources
- Aimed to be a support tool for SOM decision-making in relation to the JIRI objectives and Horizon 2020 initial deployment
- Should include an independent evaluation of results and value added

Phase II: 2015-16

- Based on evaluation recommendations scaling up in coverage of both “clients” and thematic scope
- Diversification of funding sources (further commitment of funds by partner countries, cooperation with other projects, specific donors)
- Expected to produce a business plan for long term operation (beyond ALCUENET project duration)

Phase III: 2016 - ??

- Institutionalization according to the business plan developed.

Phase I preliminary set of activities + calendar

Activity	Partner collaboration	Date
Finalization of the observatory operational plan proposal, including (i) responsibilities chart and (ii) advisory support group	Core group (CIRAD/MINCYT/DLR/CONACYT/MINECO) + ad-hoc meeting on 19 March, Buenos Aires	March 2013
Presentation to the KOM and finalization of the plan, formalization of the Advisory	Coordinator, core group, all partners	April-May 2013

Group		
Definition of information fields and their specific contents	Subcontract and core group + all ALCUENET partners	May –July 2013
Development of the data management tools and website	Subcontract supervised by one member of the Core group	May – July 2013
Setting up of β version of the website	Responsible partner (CIRAD) – core group	September 2013
Going public	Responsible partner (CIRAD) – core group	November – December 2013

III.3 Strategic partners

Institution / agency	Information topic(s)	Web link
CEPAL, Santiago	Economic, agricultural, R&D, natural resources, environment data bases and studies focused on LAC	
FAO – Rome / Santiago	Global economic, agricultural, R&D, natural resources, environment data bases and studies.	
IICA-BsAs	Biofuel newsletter	
IICA- CR	Agricultural and natural resources data bases and studies	
RIMISP, Santiago		
WAO FAO/Cirad/...	Farm system dynamics	
Bio-industry organizations global, regional, national to be identified		
JRC prospective studies		
IFPRI and other CGIAR centers	Data bases on agricultural research and other relevant R&D areas	

ANNEX IV: Lessons learnt from the e-course in Biosafety in Plant Biotechnology

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RESEARCH PAPER



Biosafety capacity building: experiences and challenges from a distance learning approach[☆]

Research Paper

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Biotechnology is revolutionizing industrial and agricultural practice as the number of commercial biotechnology products is increasing each year. Simultaneously, several regulatory approaches are put into place to allow technological advancement while preserving public health and the environment. Developing and/or emerging countries often face major barriers to access biotechnologies and biotechnology derived products as they frequently lack the institutional capacities and professional competence in exercising regulatory oversight. To address this need, intensive biosafety capacity building is required. Different training approaches can be used to train individuals in biosafety ranging from long-term leading to a postgraduate certificate or a Masters degree, to short term courses. In this paper, we discuss the applicability of a different approach to biosafety capacity building based on a distance e-learning system, the UNIDO e-Biosafety program that has been annually organized at the Marche Polytechnic University (MPU) in Italy and Ghent University (UGent) in Belgium since 2006. Even though there are some challenges, we can conclude based on our experience that distance learning in combination with on-campus tuition is amendable for biosafety capacity building.

Introduction

Since the first commercial release of GM crops in the mid 90s, GM technology has been widely adopted. In 2012, 28 countries all over the world planted 170.3 million hectares of GM crops and biotechnology is still revolutionizing industrial and agricultural practice as the number of commercial products is exponentially increasing and many new applications are in the pipeline each

year [1–3]. Adequate safety standards are required to allow technological advancement while preserving public health and the environment. This is reflected by the worldwide ratification by over 80 countries of the Cartagena Protocol on Biosafety (CPB), which regulates the transboundary movement, transit, handling and use of living modified organisms. Implementation of the CPB requires the presence of institutional capacities and professional competence in exercising regulatory oversight [4,5]. In 2012, 20 developing countries grew 52% of the GM crops worldwide indicating that for some developing countries the adoption rate of GM crops is significantly higher as compared to their industrialized counterparts. While several African countries run research programs focusing on GM crops, in 2012 only 7 (Burkina Faso,

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Cameroon, Egypt, Kenya, Nigeria, South-Africa, and Uganda) conducted confined field trials and only 4 countries on the African continent (Burkina Faso, Egypt, South Africa and Sudan) cultivate GM crops [2,6–9].

GM technology and GM products are also applicable in other sectors such as in health care delivery. In 1982, the first recombinant DNA product, the human insulin drug (Humulin) was released [10,11]. Since then several other drugs have been produced using GM products [12]. Many commercially available bioengineered industrial enzymes derived from GM microbes, are used in the food industry [13]. With improved GM technology, the potential use of novel enzymes for the sustainable growth of other sectors such as energy, is growing [14,15].

Most developing countries however, lack the capacity to develop, handle and/or commercialize these biotechnology products and often face major barriers to access the technology and derived products. Many developing and emerging countries are currently setting up and/or implementing National Biosafety Frameworks in compliance with the CPB to overcome this major hurdle. As a result, there is a rising demand for professionals who can effectively deal with biological risk assessment and management. Article 22 of the Cartagena protocol particularly deals with capacity-building. It states that 'the Parties shall cooperate in the development and/or strengthening of human resources and institutional capacities in biosafety, including biotechnology to the extent that it is required for biosafety, for the purpose of the effective implementation of this Protocol in developing country Parties, ...' [4]. In reality, similar needs are also of interest for the EU, EECCA countries and other developed countries facing the challenge to manage the introduction and application of biotechnology in agriculture and other industries. The need to strengthen professional expertise in biosafety regulations has thus become a priority for many national and international developmental programs.

Biosafety capacity development

Biosafety capacity building is a complex task and requires a multi-disciplinary approach, the main components being human resource development, institutional and policy development for regulatory bodies and relevant research institutions, to enable them efficiently and effectively use biotechnology products particularly GM crops, microbes and/or their processed products. In the last decade, various developmental agencies and donors, notably the Food and Agricultural Organization of the United Nations (FAO), the Global Environment Facility (GEF) and the United Nations Environment Programme (UNEP), have been supporting the biosafety capacity building needs of developing/emerging countries through their technical assistance programs [16,17]. The range of activities include: (i) the development of national policies and formulation of regulations; (ii) GMO detection and monitoring including equipping of laboratories and harmonizing protocols among countries; (iii) facilitating effective communication and public awareness and (iv) human resource development in biosafety.

For human resource development, different training concepts can be applied to train individuals in biosafety [18]. In-depth specialization can be delivered by opting for formal education from a university at a postgraduate or Master level. This allows an

intensive and hands-on practical training resulting in a profound development of the required competencies. Despite the advantage of this option with the resulting academic accreditation, long term university training has limited appeal to professionals as it requires them to take time off for full time study. In addition, it can be very expensive for students as well as for course providers. As such, only few long-term Master's degree courses in Biosafety are being organized worldwide. Short term courses on the other hand can rapidly and specifically target the needed skills of different stakeholders and are less time consuming for professionals. Moreover, the costs arising from their organization are much lower compared to the long-term training at a Masters or postgraduate diploma level. As a result of this, short term courses and workshops are the most frequent mode of biosafety capacity building (Biosafety Clearing House, <http://bch.cbd.int/database/activities/>) [7,19] and several such training courses have been organized by different international organizations and institutions, including the International Centre for Genetic Engineering (ICGEB), FAO, UNEP-GEF and Michigan State University [9,19,20].

The UNIDO e-biosafety program

Short term biosafety courses are very suitable to provide information and training for specific skills and needs [9]. Although short term courses have contributed significantly to the immediate implementation of the Cartagena protocol, our experience shows that they cannot deliver the intensive training that is required to deal effectively with the complexity of issues related to biological risk assessment and management. In view of this, a new approach was considered as a distance learning program conducted on-line, which combines the advantages of short- and long-term courses. This e-course is a one year academically accredited program characterized by the highest educational standards. The concept was born from UNIDO's aim to promote South-South cooperation in biosafety training, information exchange and advisory services. It was initiated in a pilot project that ran between 2003 and 2005 at the University of Concepcion, Chile providing the conceptual modus operandi for the first comprehensive and academically accredited training program in biosafety [18]. In 2006 regional nodes were established in Malaysia – University of Malaya; Belgium – Ghent University, Ghent; and Italy – Marche Polytechnic University, Ancona. In 2007, the second Latin America node was started in Belo Horizonte (Brazil) with the Pontificia Universidade Catolica de Minas Gerais. Currently, the course is organized annually at the Marche Polytechnic University (MPU) and Ghent University (UGent) as part of UNIDO's international e-Biosafety Network (<http://binas.unido.org/moodle/>).

The UNIDO e-Biosafety program aims at ensuring long-term sustainability through training of indigenous key resource persons ('train the trainers' approach) and strengthening the institutional capacities of regulatory agencies that must meet the requirements of national legislation and international agreements (Cartagena Protocol, WTO agreements, Codex Alimentarius, etc.). The structure of the program ensures that trainees from different backgrounds such as life sciences or law successfully acquire the entire range of disciplines and skills needed as biosafety practitioners. Towards this end the training material includes introductory sections teaching fundamental aspects of (plant) biotechnology and its current applications which complement

2 www.elsevier.com/locate/nbt

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the main core introducing the basics of risk assessment and regulatory structures. In separate sections students gain in-depth knowledge in food & feed as well as environmental safety assessment. Students are provided with an overview on national and international regulatory systems and trained in risk perception and communication. It delivers a solid basis to set up, implement and manage regulatory biosafety frameworks related to plant biotechnology. Furthermore, it allows participants to acquire the requisite skills to formulate applications for the release of genetically modified organisms (GMO) into the environment and to manage public policy issues with an integration of science, government policies, industry and civil society. Even though the course mainly targets individuals involved in biosafety in government or private agencies, it is also open to participants with a general interest in the political, legal and ethical aspects of biotechnology.

The e-Biosafety training program is accessible through a dedicated online Virtual Learning Environment (VLE; <https://moodle.org/about/>). The VLE is intended both for students and faculty and contains all training materials and resources (library, videos, etc.). The training material is divided into seven separate modules which are released iteratively as theoretical lessons. For each module, students engage in online discussion on topics given by the course faculty and complete a written assignment. At the end of the course students are expected to prepare for their dissertation (final assignment) a biosafety dossier on a GM plant of their choice, under the supervision of an individually assigned tutor. Dissertation, assignments, participation in online discussion as well as a final examination count towards the final grade in accordance with prevailing academic regulations of the host university. Upon successful completion of the program, students are awarded with an academically accredited postgraduate certificate at Ugent or a First Level Masters diploma at MPU.

The pilot phase of this program clearly identified the need for dedicated hands-on tuition in addition to the online tutorials to allow students to intensify their knowledge on core risk assessment topics. As a result, one to two weeks on-campus sessions have been organized at Ugent and MPU, both open to all students from the different network nodes. These sessions featured lectures and seminars by high-level experts from different fields (such as the Agro-Industry sector, the plant breeding and biotechnology community, intellectual property and biosafety issues and science communication) as well as the detailed discussion of case studies, PC and

laboratory exercises. The main aim was to provide students and participants with the unique opportunity to develop advanced skills in formulating and assessing applications for environmental releases and/or food & feed use of biotechnology-derived products through practical training provided by renowned and experienced competent institutions and their local faculty (MPU, Ugent) and to strengthen professional expertise in biosafety by interacting with recognized international experts with decades long experience in modern biotechnology and risk assessment.

For the past 3 years, European Food Safety Authority (EFSA) representatives have been invited to the MPU on campus session to introduce the European experience in the regulation of GMOs for Food/Feed/Environmental release and the main aspects of the scientific basis related to food and environmental risk assessment on products derived by biotechnology applications. In addition, real life scenarios and cases were presented which enriched the discussion during these on-campus sessions.

The on-campus sessions at Ugent also allowed to include two practical training sessions intended to familiarise trainees with little or no experience in plant biotechnology. During the first exercise, focusing on the techniques associated with plant transformation, students use *Agrobacterium tumefaciens* to introduce DNA into *Arabidopsis thaliana* root tissue and subsequently determine the degree of transformation efficiency by analyzing the expression of the reporter gene β -glucuronidase (gus). The second exercise familiarises students with GMO detection methods to detect, identify and quantify GMOs in food and feed products.

The modular set up of the course in combination with the on-campus sessions allows flexibility and tailoring of the content to regional and/or specific needs. As such, we are able to include specific training material as has been done in the past for example with a specific focus on crop species and aspects of priority for different cultivation areas (in particular the Balkans, Mediterranean and Central Africa areas).

From October 2006 to October 2012, 100 students from 37 different countries participated in the course at the Ugent and MPU network nodes (see Table 1). More than half of the students came from Africa (58%), followed by Europeans (23%). Only a minority came from Asia, Russia and Middle-East (10%), Central and South America (7%) or North-America (2%). East African countries have been well represented and more than one fifth of the participants were Kenyans. Generally the gender balance was not optimal as only 37% of the trainees were female. The

TABLE 1
Ugent and MPU participant nationalities for the e-Biosafety program 2006–2012

Africa (58)		Europe (23)	Asia, Russia and Middle East (10)	North America (2)	Central and South America (7)
Kenya (21)	Congo (2)	Italy (11)	India (3)	US (1)	Costa Rica (3)
Ghana (5)	Tanzania (2)	Belgium (4)	China (3)	Canada (1)	Argentina (1)
Uganda (5)	Rwanda (2)	Croatia (3)	Vietnam (1)		Uruguay (1)
Cameroon (4)	Sudan (1)	Ireland (1)	Russia (1)		Paraguay (1)
Ethiopia (4)	Malawi (1)	Romania (1)	Malaysia (1)		Colombia (1)
Libya (3)	Mauritius (1)	UK (1)	Pakistan (1)		
Nigeria (3)	Zimbabwe (1)	The Netherlands (1)			
Burkina Faso (2)	Swaziland (1)	Germany (1)			

TABLE 2

Results in percentage of a questionnaire completed by 45 MPU and UGent alumni (2006–2012) evaluating UNIDO's e-Biosafety program (July 2013)

	E	VG	G	M	S	I	
General							
How would you rate the organization of the course?	31.11	53.33	15.56	0	0	0	
Did the course meet your expectations?	28.89	53.33	17.78	0	0	0	
How did you appreciate the distance learning method?	22.22	56.82	13.33	6.67	2.22	0	
Has the acquired knowledge been valuable for your work at your home institution/country?	44.44	31.11	15.56	4.44	2.22	0	2.22 NY
Has the obtained degree opened up career opportunities?	20.00	22.22	22.22	11.11	2.22	6.67	15.56 NY
Course content							
Theoretical lectures	31.11	48.89	15.56	2.22	2.22	0	
Practical exercises	4.44	37.78	31.11	17.78	0	6.67	2.22 NO
Course material	35.56	40.00	15.56	4.44	0	0	4.44 NO

E: excellent; VG: very good; G: good; M: moderate; S: sufficient; I: insufficient.
NY: not yet; NO: no opinion.

success rate was approximately 79% and most of the trainees are currently engaged with national regulatory authorities.

In 2013, a questionnaire was sent out to 79 course alumni to evaluate the e-biosafety program. The form was returned by 45 alumni who reviewed the following issues:

- General organization of the course and the e-distance learning method
- Did the course meet the expectations?
- Course content and material
- Value for current work and career opportunities

Participants were able to select from the following answers: excellent, very good, good, moderate, sufficient and insufficient and had the opportunity to add comments to the specific topics if desired. For some topics participants expressed no opinion or indicated that there was not yet a result, which was included as such in the results (see Table 2). Overall, the outcome shows that the alumni are very satisfied with the course and that it has met their expectations. The overall majority rated the course organization, content and material ranging from good to excellent. With regards to the practical exercises, mixed opinions were received: one person had no opinion on the topic and others valued them only moderate or even insufficient. And even though the majority indicated they were satisfied, participants would prefer even more practical training. This result can be explained in two ways. First, the questionnaire was sent out to all alumni. As the hands-on lab training at the UGent on campus session only started in 2009, not all alumni had the opportunity to take part in this. Second, even though the UGent on campus session is open to the students registered at MPU, very few have participated in the past years, most likely because of limited time and/or resources. Nevertheless, as this evaluation shows a request to have this hands-on lab training in addition to the discussion of case studies, it should be considered to organize these exercises at the MPU on campus session as well. Even though the majority highly appreciated the e-distance learning method mainly because it allows to continue official duties while studying, some indicated it can be a challenge, especially in developing countries where a suitable internet connection can be a limiting factor.

Looking at the impact of the e-biosafety program, the overall majority indicated that the course has been very valuable to their

current work in their institution as they are often involved in field trials, biosafety committees and regulatory agencies. With regards to career opportunities, different opinions can be observed. While some indicated that the accreditation opened up or strengthened career opportunities by allowing them to be involved in biosafety trainings or committees others mentioned it did not yet do so. One aspect that was mentioned as limiting by the alumni was the difference in the obtained degree between Ghent and Ancona. Indeed, due to country-bound rules, Ghent University issues an accredited postgraduate certificate, while MPU offers a First Level Master diploma. This postgraduate certificate was scored as less beneficial compared to the First Level Master diploma. Unfortunately, we are afraid that this discrepancy will not be solved in the near future. Some students also indicated it would be valuable to have the possibility to complete the training program with a second year master program. Although this could be a future perspective, it would be challenging to organize as the most value for such an additional year would come from hands on training in lab work and dossier preparation which cannot be organized through e-distance learning.

Finally, several of the returned questionnaires requested to set up a solid alumni network to bring alumni in contact with each other, provide them with a forum and updated material and link them to ongoing courses. Following this observation, we will look into the options on how to organize this in the future.

Conclusion

Building capacities for biosafety in developing countries is crucial to enable them explore the range of biotechnologies and their derived products to sustainably boost production in agriculture and other bio-industries. Our experience in the human resource development aspect shows that long term distance e-learning brings several advantages to biosafety capacity building such as minimizing geographical constraints and costs. It is an attractive approach for professionals as it allows them flexibility to combine the training with their daily profession. In this way it can deliver in depth training according to the 'train the trainers' principle, resulting in a multiplication effect of capacity building. Despite these advantages of the distance e-learning system, however, some challenges still remain. The e-learning system highly benefited

from the additional hands-on training during the on-campus sessions. This of course implies that participants require the means and the time to travel to the network nodes where the training is being organized. In addition, a constant maintenance of the developed curriculum is required to ensure the continuous application of quality standards. Besides these educational challenges, the course set up also encountered several logistical challenges, which may account for a lower rate of success. First of all students need to have access to a suitable internet connection. Secondly, although the distance e-learning can minimize geographical constraints, it cannot lift existing language barriers. To date, the UNIDO course run by the MPU and UGent nodes is solely delivered in English. We do however experience a need to deliver the course in other languages particularly French and Spanish, especially for the French speaking community in Africa. Finally, the biggest challenge of this project appears to be the sustainability. Despite the fact that biosafety is a major issue for society and decision making on the implementation of the technology, and remains an important priority for countries to meet their national commitments under the Convention of Biodiversity (CBD) and the CPB [21], funding for biosafety capacity development keeps decreasing every year. As a result the number of scholarships dropped significantly although they are essential to give students from developing countries the opportunity to take part in this course. Moreover, it also resulted in a decreased number of network nodes where the course is being organized. At the start of this program in 2006, 5 nodes were member of UNIDO's international e-Biosafety Network. Due to lacking resources however, the

Universidad de Concepcion (Chili), the University of Malaya (Malaysia) and the Pontifical Catholic University of Sao Paulo (Brazil) no longer run this program at their universities.

It is generally recognized that proper institutional capacities need to be in place for countries to deal with the complex issues related to the adoption of GM-technology. It is therefore important to continuously bring to the attention of governments, developmental agencies and international organizations, the value of biosafety capacity development including training through formal degrees to encourage them to mobilize resources for these projects.

Overall, we can conclude that the distance e-learning system in combination with on-campus tuition is amendable for biosafety capacity building.

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ANNEX V: Bioeconomy short course given in Ghent

GHENT BIOBASED ECONOMY SUMMERSCHOOL (19 – 22 AUG 2013)				
Time	Monday	Tuesday	Wednesday	Thursday
9h00		Frank Van Breusegem (UGent) Improving biomass yields by genetic engineering	Tom Desmet (UGent) Enzymatic conversion of biomass	Marta Coma (UGent) Environmental biotechnology
9h45		Hilde Nelissen (UGent) Systems biology: <i>Arabidopsis</i> as model organism	Ingeborg Stals (HoGent) Physicochemical pretreatment of biomass	Robbert Kleerebezem (TU Delft) Resource recovery from waste
10h15		Michael Metzlaiff (Bayer Bioscience) Trying to look into the future of agriculture	Thijs Kaper (Genencor) New enzyme solutions for biomass conversion	Ron Gerards (Waterleau NV) Sustainability of environmental technologies
10h45		<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>
11h15		Bartel Vanholme (UGent) Modifying the cell wall for increased sugar yields	Marjan De Mey (UGent) Metabolic engineering for biomass conversion	Frederik Ronsse (UGent) Thermochemical conversion of biomass
12h00	Registration	Wout Boerjan (UGent) Engineering of lignifications in poplar	Carol Roa Engel (TNO) In situ product removal in the biorefinery	Pascal Boeckx (UGent) Applications of biochar as soil improver
12h30		Isabel Roldan-Ruiz (ILVO) Field performance of bio-energy crops	Paul Klaassen (DSM) Ethanol production from pentose sugars	Katina Kiep (Evonik) Biochar: production and carbon sequestration
13h00	Lunch	Lunch	Lunch	Lunch
14h00	Willy Verstraete (UGent) Microbial Resource Management	Visit to VIB	Tour of Ghent Bio-Economy Valley	Visit to FBW labs
14h45	Student introduction			Mirjam Knockaert (UGent) Innovation in Biotechnology
15h15				Hannes Iserentant (UGent) Patents in the life sciences
15h45	Coffee break	Coffee break	Coffee break	Coffee break
16h15	Joanna Dupont-Inglis (EuropaBio) The biobased economy in Europe	Discussion forum with stakeholders	Visit to Bio Base Europe	Johan Braeckman (UGent) Ethical issues in Biotechnology
17h00	Student introduction			Jeroen Buysse (UGent) The economics of Biotechnology
17h30				Tom Desmet (UGent) Closing remarks and goodbye
	Welcome drink	Reception	BBQ	Free evening

ANNEX VI: ERASMUS +

Erasmus + will be a 16.5 billion € Budget over 7 years (will be an overall increase of 40%). It will be a single integrated programme encompassing actions such as LLP and the old International Higher Education Programmes (Alfa, Erasmus mundus, tempus etc). The programme will be broken down into three pillars

1. Learning mobility (63% of the overall budget)
 2. Cooperation Projects
 3. Policy support. No differentiation between intra EU and international mobility
-
- Key Action 1 degree mobility/joint degrees 63% of the share for the EU education and youth Budget. Will be a continuation of Erasmus Mundus action 1, however emphasising on Excellent Joint Master courses offered by universities from Europe and partner countries attracting best students through high level scholarships. It will be centrally centrally managed
 - Key Action 2: capacity building (2) 28% of share for the EU education and Youth Budget has 2 types of projects
 - o Joint projects New curricula & degrees learning and teaching methodologies , staff development quality assurance, governance Bologna tools
 - o Structural projects: Reforms at national level with support of authorities in Partner Countries (policy modernisation, Bologna policies, governance and management of higher education systems...) +Additional mobility component for ENP and Enlargement countries (without National Agency): students and staff, to and from EU, same rules as for credit mobility (max 12 months. Action 2 will be also a centralised action with annual calls for proposals. Around 1000 projects over 7 years

Roadmap for implementation of Erasmus +

1. 2014 Initial Work Programme to be sent to MS : End Sept 15 - 10: Consultation of the E+ HL expert group
2. Adoption by College: November
3. Publication of provisional call and programme guide: December 2013

ANNEX VII: ALCUE NET Project Summary



"Latin America, Caribbean and European Union Network on Research and Innovation"

Starting date: 01/12/2012

End date: 31/05/2017

Duration: 54 months

Total Costs: 4.290.000 Euros

EU Contribution: 3.750.000 Euros

Institution	Short Name	Country
MINISTERIO DE CIENCIA, TECNOLOGÍA E INNOVACIÓN PRODUCTIVA (COORD)	MINCyT	Argentina
ZENTRUM FUER SOZIALE INNOVATION	ZSI	Austria
CARIBEAN SCIENCE FOUNDATION INC.	CSF	Barbados
CONSELHO NACIONAL DE DESENVOLVIMENTO CIENTIFICO E TECNOLÓGICO	CNPq	Brazil
COMISION NACIONAL DE INVESTIGACION CIENTIFICA Y TECNOLÓGICA	CONICYT	Chile
DEPARTAMENTO ADMINISTRATIVO DE CIENCIA, TECNOLOGÍA E INNOVACIÓN	COLCIENCIAS	Colombia
MINISTERIO DE CIENCIA Y TECNOLOGÍA Y TELECOMUNICACIONES	MICITT	Costa Rica
MINISTERIO DE EDUCACION SUPERIOR CIENCIA Y TECNOLOGIA	MESCYT	Dominican Republic
TEKNOLOGIAN TUTKIMUSKESKUS VTT	VTT	Finland
CENTRE DE COOPERATION INTERNATIONAL EN RECHERCHE AGRONOMIQUE POUR LE DEVELOPPEMENT	CIRAD	France
DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	DLR	Germany
CONSEJO NACIONAL DE CIENCIA Y TECNOLOGIA - CONACYT	CONACYT	Mexico
NORGES FORSKNINGSRAD	RCN	Norway
SECRETARIA NACIONAL DE CIENCIA, TECNOLOGIA E INNOVACION	SENACYT	Panama
FUNDACAO PARA A CIENCIA E A TECNOLOGIA	FCT	Portugal
MINISTERIO DE ECONOMIA Y COMPETITIVIDAD	MINECO	Spain
MINISTERIO DE EDUCACION Y CULTURA	MEC	Uruguay

MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E INOVAÇÃO / INSTITUTO BRASILEIRO DE INFORMAÇÃO EM CIÊNCIA E TECNOLOGIA	MCTI/IBICT	Brazil
INSTITUT DE RECHERCHE POUR LE DEVELOPPEMENT	IRD	France

PROJECT STRUCTURE (Work Packages)

WP1	Bi-regional EU-LAC Policy Dialogue on Research and Innovation
WP2	Addressing Societal Challenges through action in the Energy thematic priority of the Joint Initiative for Research and Innovation
WP3	Addressing Societal Challenges through action the ICT thematic priority of the Joint Initiative for Research and Innovation
WP4	Addressing Societal Challenges through action in the Bioeconomy thematic priority of the Joint Initiative for Research and Innovation
WP5	Addressing Societal Challenges through action in Biodiversity contributing to Climate Change thematic priority of the Joint Initiative for Research and Innovation.
WP6	Capacity strengthening and networking
WP7	Information management, monitoring, evaluation and quality control
WP8	Coordination and Management

PROJECT OBJECTIVES

The ALCUE NET objective is to establish a bi-regional European Union, Latin America and the Caribbean (EU-LAC) platform bringing together actors involved in R&I orientation, funding and implementation, as well as other relevant stakeholders from the public and private sector and the civil society, in an effort to support the international Science, Technology and Innovation (STI) dimension of the Europe 2020 Strategy and Innovation Union Flagship Initiative. It will do so by promoting bi-regional and bilateral partnerships for jointly societal challenges, working to develop the attractiveness of Europe in the world, and by promoting the establishment of a level-playing field in Research and Innovation.

The Project will support the Policy Dialogue process on STI to consolidate EU-LAC cooperation by contributing to the implementation of the Joint Initiative for Research and Innovation (EU-LAC JIRI) in the Senior Officials Meetings (EU-LAC SOM) and will contribute to the definition and implementation of joint strategic agendas for research, development and innovation during 2013-2017 (Technical secretariat support to the SOM)

Main guidelines to follow up the recommendations of SOM meetings, particularly to support the follow up of successive SOM Working Group process:

- To provide active support to the implementation of the roadmap of the Joint Initiative for Research and Innovation (JIRI), by developing concrete recommendations
- To support the updating of common priorities, encourage mutual policy learning and ensure the proper implementation and effectiveness of cooperation instruments
- To provide technical support to the SOM.

At the specific level the project will focus on:

- A. Achieving progress towards joint improvement of key aspects of societal challenges related to the areas addressed by the SOM Working Groups: Energy, ICT, Bioeconomy and Biodiversity including Climate Change.
- B. Supporting Policy Dialogue at all relevant levels
- C. Strengthening cooperation
 - a. Joint activities
 - b. Observatories on thematic priorities
 - c. Expand the network of National Contact Points (NCPs) in LAC
 - d. NCP & Horizon 2020 trainings
 - e. Provide information of the project achievements
 - f. Establish close linkages with other INCO-NETs, ERA-NETs & BILATs
- D. Increasing effectiveness and impact

ANNEX VIII: ERA Net LAC Project Summary

ERANet- LAC

Project full title: "Network of the European Union, Latin America and the Caribbean Countries on Joint Innovation and Research Activities"

Starting date: 01/10/2013

Duration: 42 months

Total Costs: 2.848.418

EU Contribution: 2.495.746

Institution	Short Name	Country
DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV (COORD)	DLR	Germany
CONSEJO NACIONAL DE CIENCIA Y TECNOLOGIA	CONACYT	Mexico
FUNDACAO PARA A CIENCIA E A TECNOLOGIA	FCT	Portugal
NORGES FORSKNINGSRAD	RCN	Norway
SECRETARIA NACIONAL DE CIENCIA, TECNOLOGIA E INNOVACION	SENACYT	Panama
SUOMEN AKATEMIA	AKA	Finland
MINISTERIO DE ECONOMIA Y COMPETITIVIDAD	MINECO	Spain
COMISION NACIONAL DE INVESTIGACION CIENTIFICA Y TECNOLOGICA	CONICYT	Chile
INSTITUT DE RECHERCHE POUR LE DEVELOPPEMENT	IRD	France
MINISTERIO DE CIENCIA, TECNOLOGÍA E INNOVACIÓN PRODUCTIVA	MINCyT	Argentina
CARIBBEAN SCIENCE FOUNDATION INC.	CSF	Barbados
FUNDACIÓN ESPAÑOLA PARA LA CIENCIA Y LA TECNOLOGÍA	FECYT-CYTED	Spain
MINISTERIO DE EDUCACION Y CULTURA	MEC	Uruguay
CONCEJO NACIONAL DE CIENCIA, TECNOLOGÍA E INNOVACIÓN TECNOLÓGICA	CONCYTEC	Peru
UNITATEA EXECUTIVA PENTRU FINANTAREA INVATAMANTULUI SUPERIOR, A CERCETARII, DEZVOLTARII SI INOVARII	UEFISCDI	Romania
TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU	TUBITAK	Turkey
CONSELHO NACIONAL DE DESENVOLVIMENTO CIENTIFICO E TECNOLOGICO	CNPq	Brazil

WORK PACKAGES

WP1	Identifying procedures, topics, instruments and actors
WP2	Definition of a Project Strategy and development of the Action Plan for the ERA-NET
WP3	Promoting mutual opening and coordination of EU-LAC existing programmes and infrastructures
WP4	Implementation of Joint Calls
WP5	Paving the way for innovative and sustainable bi-regional joint activities
WP6	Project Management

PROJECT OBJECTIVES

General Objective: Develop and implement strategic joint activities involving funding agencies or other actors from both regions.

Specific Objectives:

- **Integrate the EU and LAC funding agencies into the JIRI process:** ERANet-LAC will organize a consultation process with funding agencies and other stakeholders.
- **Promote new joint funding activities:** A first call will be launched at the end of Year 1 and will include mainly consortium partners (following the recommendations of the SOM working groups). A second call will be launched in Year 2 upon results of the consultation process with EU and LAC funding and innovation agencies, enhancing the involvement of funding agencies outside the consortium.
- **Facilitate the coordination of existing research and innovation programmes:** The project will identify and support identification pilot coordination actions by:
 - clustering nationally-funded research actions or initiating mutual opening of new ones;
 - developing schemes for the mutual opening of facilities or laboratories in one country for scientists from another;
 - opening and coordinating innovation programmes;
 - creating synergies - avoid doubling - with other coordination initiatives such as thematic ERANets, as well as support actions such as INCO-Net and BILAT projects.
- **Pave the way for long perspective joint funding actions:** ERANet-LAC will formulate an Action Plan for bi-regional joint activities, which recommends a road map and concrete steps to be taken. A new management structure for launching calls will be established in the form of a EU-CELAC Research and Innovation Funding Agency Platform. This funding platform will be used as a communication and support platform for interested funding organisations.
- **Lay a stronger emphasis on innovation:** will be a focal aspect of the project activities. The joint activities implemented in ERANet-LAC will also focus on “Bringing ideas to market”. This will be done through the involvement of industries, Clusters of Excellence and Regions as important funding partners with strong link to the regional industry on both sides.
- **Build on previous projects:** ERA-Net EULANEST; ACCESS4EU with Mexico and Brazil; EULARINET
- **Create synergies and complementarities with on-going projects and initiatives:** ALCUE NET; BILAT projects with Argentina, Brazil, Chile and Mexico; and thematic projects and initiatives.

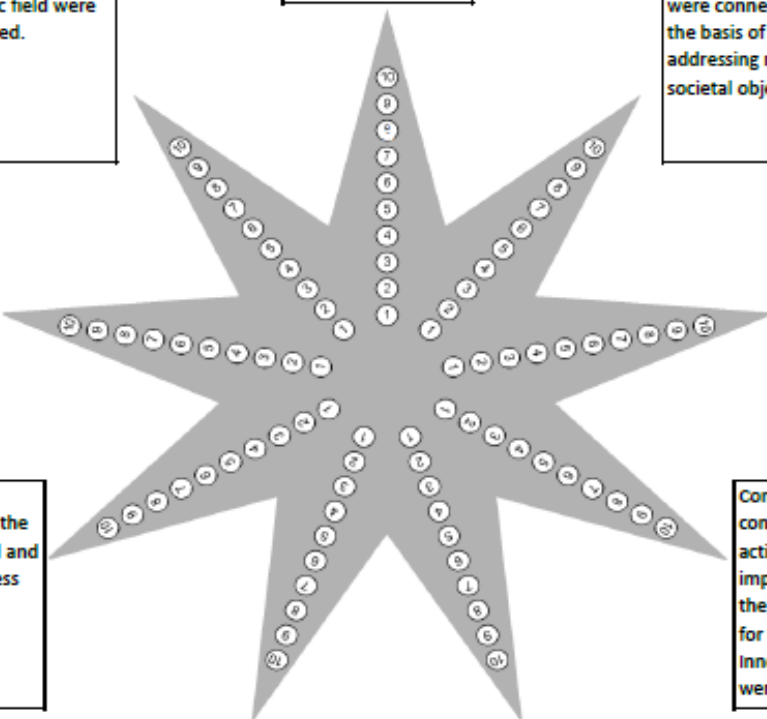
ANNEX IX: Event Evaluation Questionnaire

Dear participant!

It is important to us that we create longerlasting results and impacts with our event! Please take some minutes to evaluate, how you benefited from today's event!

The main goals, that we wanted to achieve with this event, are shown in the star underneath.

(1) Please rate (on a scale from 1 -10) , how each goal was fulfilled for you today! Make a cross in each scale! (1 = hardly fulfilled ; 10 = highly fulfilled; no cross = don't know)



The star has 10 points, each with a scale from 1 to 10. The goals are listed in boxes around the star:

- Top:** New partnerships for innovation were enabled (between private sector, public R&D, technology platforms, etc.).
- Top-Right:** LAC and EU thematic projects or platforms were connected on the basis of addressing mutual societal objectives.
- Right:** A dialogue between researchers (or other stakeholder groups) and policy makers took place (e.g. research results were fed into the policy dialogue).
- Bottom-Right:** Concrete contributions or actions for the implementations of the Joint Initiative for Research & Innovation (JIRI) were developed.
- Bottom:** I maintained or extended my professional network.
- Bottom-Left:** Consensus on priorities or topics for joint strategic actions were found.
- Left:** Information provided during the event was useful and will facilitate access to cooperation.
- Top-Left:** Leading minds from both regions in the thematic field were connected.

The star's points are labeled with numbers 1 to 10, corresponding to the goals listed in the boxes.

Please turn the page!

(2) Maybe you identified other main benefits from the participation in today's event?

If yes, please make a cross (*one or more*):

- ☐ Strong thematic research lines for the EU-LAC cooperation were defined.
- ☐ The cooperation framework has been fine-tuned (e.g. common rules and regulations have been developed).
- ☐ National Contact Points (NCPs) were trained / skilled.
- ☐ New human resources for STI cooperation have been attracted or skilled.
- ☐ I feel more confident and motivated to participate in international cooperation.
- ☐ I gained relevant complementary knowledge, expertise and skills.
- ☐ National STI instruments and resources were better coordinated.
- ☐ National perspectives and priorities for solving global challenges were included in the bi-regional policy debate.
- ☐ I created (international) visibility of my (scientific) work.
- ☐ Participating countries could make their scientific quality and research excellence more visible.
- ☐ OTHER:

(3) In general, do you think the participation in this event was useful for your work?

- ☐ very useful
 ☐ useful
 ☐ hardly useful
 ☐ not useful

Please turn the page!

Please explain why it was or was not useful!:
(or is there anything else you want to share with the event organizers?)

(4) You participate in the event in your function as a:

- ☐ researcher, thematic expert
- ☐ young researcher, student
- ☐ representative of a national authority (e.g. Ministry)
- ☐ representative of a funding agency / program owner
- ☐ representative of the European Commission (EC)
- ☐ National Contact Point (NCP)
- ☐ project beneficiary / project manager (FP7, etc.)
- ☐ innovator (representative of a SME, Industry, Technology Centre, etc.)
- ☐ representative of a NGO
- ☐ representative of a regional/ international organization
- ☐ interested public
- ☐ other:

(5) If you allow, we may contact you briefly in some weeks to know if your participation in the event brought any further results or changes! Please leave:

your email: _____

your name: _____