



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 Joint Events

18-21 March 2014

Cali, Colombia

Task Leaders: MINCYT/CIRAD

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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 bi-regional EU funded project representatives (EUCARINET and BILATs projects) and 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.

These Joint Events were organized together with the Ministry of Science, Technology and Productive Innovation (MINCYT) and the Recherche Agronomique pour le Développement (CIRAD) from France, 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 meetings were held from 18 to 21 March 2014 in Cali; the host institution was the International Center for Tropical Agriculture (CIAT).

This minute will inform what was discussed in the three meetings organized by ALCUE NET project:

- March 18th: Information Day: European funding programmes 2014-2020
- March 19th: Working meeting on the CELAC Bioeconomy Observatory
- March 20th: LAC-EU Bioeconomy Awareness Raising and Capacity Development workshop
- March 21st: Meeting of the SOM JIRI Working Group on Bioeconomy

Around 115 people attended the joint events (*see full list in Annex XV*).

Meetings general agenda



ALCUE NET Joint Events

March 18th - 21st, 2014

CIAT, Centro Internacional de Agricultura tropical - KM 17, Recta Cali- Palmira, Colombia

	Events
DAY 1 18/03 pm	Information Day: European funding programmes 2014-2020 <i>Organised by: Colciencias, CIAT, ALCUE NET project, EUCARINET project</i> ❖ Horizon 2020, the S&I framework programme ❖ Other EU funding programmes <i>Meeting room: Tropico</i>
DAY 2 19/03 am+pm	Working meeting on the CELAC bioeconomy Observatory <i>Organised by: ALCUE NET project, MINCyT, CIRAD</i> ❖ Objectives & proposal: synergies with the European Bioeconomy Observatory ❖ Methodology: key questions for analysis and discussion <i>Meeting room: Tropico</i>
DAY 3 20/03 am+ pm	LAC-EU Bioeconomy Awareness Raising and Capacity Development (CD) workshop <i>Organised by: ALCUE NET project</i> ❖ Workshop on awareness raising of the Bioeconomy in LAC region ❖ Workshop on bi-regional Master of Bioeconomy EU-LAC <i>Meeting room: Tropico</i>
DAY 4 21/03 am+ pm	Meeting of the SOM JIRI Working Group on Bioeconomy <i>Organised by : ALCUE NET project</i> <i>Meeting room: Latino America</i>

Information Day: European funding programmes 2014-2020

The objective of this meeting was to provide information about the guidelines and basic concepts to be applied to the new calls in the framework of Horizon 2020. The agenda (is available as Annex III) of the information session was organized in two modules. During the first panels, speakers presented general guidelines and tools required to participate in Horizon 2020, and specific details of the EC H2020 challenge 2 (Food Security, Sustainable Agriculture, and Forestry, Marine/Water Research and the Bioeconomy). In the second panels, CIRAD and MENON introduced other EU funding programmes, in particular those focused on capacity development.

The meeting was attended by 68 people, mainly researchers, post graduate students and representatives of local public and private institutions (see full list in Annex XV). Main questions and discussions were related to specific conditions and opportunities for Latin American and Caribbean institutions and experts.

Working Meeting on the Latin America and the Caribbean Bioeconomy Observatory (BIO-CELAC)

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

- Agenda of each meeting
- Contact list of participants

The objective of this meeting was to present main objectives and scope to set up the Latin America and the Caribbean Bioeconomy Observatory (BIO-CELAC) and formulate 2014 work plan and funding proposal for the upcoming SOM. See this working meeting agenda in Annex IV.

Participants: ALCUE NET WP4 team members and a number of experts from CIAT, FAO, CEPAL, IICA, Consumers International LAC invited by the project. The meeting was attended by 16 persons (see full list in Annex XV).

Mr. **Eduardo Trigo**, from the Ministry of Science, Technology and Productive Innovation (MINCYT) of Argentina welcomed all participants to the meeting on behalf of the ALCUE NET Coordination. Due to a local strike in the route between the city airport and Cali, CIAT representative and Guy Henry from CIRAD were not able to open the meeting. They arrived to the venue right after.

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

Ms. **Luciana Ayciriex**, from the Ministry of Science, Technology and Productive Innovation (MINCYT) of Argentina introduced the ALCUE NET project and related issues to Bioeconomy Working Group and the next steps forward the upcoming SOM in Costa Rica. She pointed out that Bioeconomy is one of the four EU-LAC Joint Initiative for Research and Innovation (JIRI)'s priority themes and, there is a specific task to develop a BIO-CELAC Observatory in close collaboration with existing regional information systems to regularly assess the progress and impact of the bioeconomy and develop forward-looking and modeling tools for cooperation activities in R&I. She highlighted that the WG of reference decided to prepare an Observatory while other WGs chose to plan a mapping of capacities and initiatives.

Mr. **Trigo** presents the whole proposal for preparing the Latin America and the Caribbean Bioeconomy Observatory (BIO-CELAC) and the ways to interact with similar EU and LAC platforms. He made a very brief introduction to the 30 months EULAC project ALKUE KBBE and its workshops. In the framework of this project, 6 principal bioeconomy pathways were identified (see details of each pathway in Annex V):

- Biodiversity resources exploitation
- Eco-intensification
- Biotechnology applications
- Biorefineries and bio-products
- Value chain improved efficiencies
- Ecosystem services

Mr. Trigo stressed on the importance to consider these topics within the region but also at a global context for all Latin America.

Mr. Trigo said Bioeconomy is an increasingly central issue at a global level. Different regions of the world have specific Bioeconomy strategies and action plans to address societal and economic challenges: OECD 2009, Canada 2009, European Union 2012, United States 2012, and South Africa 2013. LAC region needs a Bioeconomy reporting tool to make visible its comparative advantages. The availability of information - in various forms and presentations- and visibility-building is a core value for the development of research and trade.

After a brief presentation of preliminary observatory's objectives and tasks by Mr. Trigo, all participants analysed them agreed on that the BIO-CELAC Observatory would act as a tool to support following objectives:

- The understanding of the model to general public and stakeholders
- Providing specific information to those who drive Bioeconomy in the region
- Establishing a one-point entry to the LAC Bioeconomy and Bi-regional cooperation
- Providing information support for decision making in policy development
- Providing a promotion tool to increase levels of social acceptance of Bioeconomy
- Offering a platform for ALCUE Bioeconomy stakeholders to exchange information

Regarding the structure that the BIO-LAC Observatory would have, Mr. Trigo suggested a three pillar structure (R&I, Policy and Market) to cover information in country and regional levels. International level would be taken into account to make synergies with other regions, in particular with the European Union that is preparing a Bioeconomy Observatory with a similar structure. All participants stated pro and cons of this three pillar structure proposal and agreed on the following:

- Research & Innovation: information and initiatives of new technologies and processes for the bio-economy, by using R&D and innovation.
- Policy: data to be used for collaboration between policymakers and stakeholders.
- Markets: data to enhancing markets and competitiveness in bio-based industries.

All participants accepted the suggested BIO-CELAC Observatory layout. See the visual Annex VI.

The VC with **Ms. Leticia Landa** from the JRC was cancelled.

The other three panels, moderated by **Ms. Alejandra Davidziuk** and **Mr. Eduardo Trigo**, dealt on the following topics:

- Methodology for the BIO-CELAC Observatory: key questions for analysis and discussion (Data identification: which data/information should be collected? Data analysis: which key indicators

should be produced or taken into account? Data supply: which data/information sources should be used?)

- Develop proposal: core team, main collaborators and tentative alliances
- Work Schedule 2014-2016

Moderators stimulated the discussion to reach an integral and coherent proposal. Main remarks and suggestion was the following:

- Bioeconomy is already happening in the Region, but it is very difficult to find any policy paper offering an integrated vision of this new bioeconomy, or any scientific research regarding biotechnology development in Latin America or Caribbean's region. There is not a Bioeconomy perspective within the region, only opportunistic actions or some bioenergy or biodiversity policies within some LAC countries.
- It would be useful to think the strategy for capacity building to enrich the observatory one.
- To think and systematize how what happens in LAC can impact Europe. This could be solved through benchmarking studies.
- The first question to answer should be what we need and what we expect from the observatory. These would help us to find the right place for developing the initiative.
- Regarding support policy awareness and policy development, it would be important to take into account the "social acceptance" of the observatory "thematic line". In this regard, other attendees suggested limiting resistors to avoid misunderstandings, to differentiate between information and disinformation, and present the observatory as a positive oriented initiative.
- The observatory should be presented as a one-point entry for stakeholders from LAC and Europe. In this regard, awareness raising needs to target general public and experts at the same time.
- As a supporting tool, it is essential to make measurements for the three identified pillars in order to obtain a database that supports the proposed objectives. The Observatory could offer data about European projects, national projects from LAC and templates from LAC countries.
- Particularly in the Policy pillar, someone suggested to search policies in the region, and check how they positive affect and / or restrict the development of the bioeconomy in LAC. It was also recommended to create a Policy Watch to monitor this specific search and information database.
- Introduce the Observatory as a place where small LAC countries can begin discussions to develop national strategies and where those initiatives could be taken into account by other countries.
- Related who can run the pillars, no institution has the ability to solve information seeking and promoting each subject fully.

A compilation of discussion and the main aspects of the working plan of the Latin America and the Caribbean Bioeconomy Observatory (BIO-CELAC) in Annex VII.

Results from that discussion are listed below in the form of a working structure (three thematic pillars and one management section):

Latin America and the Caribbean Bioeconomy Observatory (BIO-CELAC) working structure

WP1- Research & Innovation:

Task 1.1: Development of a common methodology, work team and main sources

Task 1.2: First pilot database implementation (ALCUE NET) & methodological validation

Task 1.3: Expansion of the database by different countries / different topics

Task 1.4: White papers

Suggested collaborators: RICYT, CIAT

Outcomes:

- Quantitative data (publication of key facts and figures on R&I on bioeconomy).
- Qualitative information (mapping of various initiatives on R&I on bioeconomy).

WP2 - Policy:

Task 2.1: Development of a common methodology, work team and main sources

Task 2.2: First pilot policy inventory (ALCUE NET) & methodological validation

Task 2.3: Policy Watch (expansion to different countries / different topics)

Task 2.4: White papers

Suggested collaborators: CEPAL, IICA, FAO

Outcomes:

- Comprehensive collection of qualitative policy information (in form of news), relevant to the bioeconomy to interact with policy-makers, dissemination, visibility at the international level

WP3 - Market:

Task 3.1: Development of a common methodology, work team and main sources

Task 3.2: First pilot sector value studies in selected countries (ALCUE NET) & methodological validation

Task 3.3: Expansion of countries and sectors

Task 3.4: White papers

Suggested collaborators: Buenos Aires Grain Exchange, Consumers International, CIAT, Latin American Exchange Association, UNICA

Outcomes:

- Collection of data to estimate economic impact and opportunities to make visible the LAC bio-based industries

WP4 – Management:

Task 4.1: Communication & dissemination strategy

Task 4.2: Technology aspects

Task 4.3: Partners coordination

Task 4.4: Financial administration

Task 4.5: Completion of full proposal formulation + funding-negotiation

Task 4.6: Direct link to Observatories from EU and other regions and countries

Tentative timeline:

Pilot phase as part of the ALCUE NET project: 2014

Tasks: 1.1; 1.2; 2.1; 2.2; 3.1; 3.2; 4.1-4.5

Scaling-up phase: 2015-2017

Tasks: 1.3; 1.4; 2.3; 2.4; 3.3; 3.4; 4.6

Recommendation for SOM:

Senior Officials support to the scaling up phase and funding requirements

Working Meeting on LAC-EU Bioeconomy Awareness Raising and Capacity Development

The LAC-EU Bioeconomy Awareness Raising and Capacity Development meeting was organized together with the Ministry of Science, Technology and Productive Innovation (MINCYT) and the CIRAD (Center for International Research on Environment and Development), 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)”. See agenda of the event in Annex VIII. The meeting was attended by 22 persons (see full list in Annex XV).

Morning sessions: “LAC-EU Bioeconomy Awareness Raising”

A 6 pages document regarding an Awareness Raising Initiative (ARI LAC-Bioeconomy) was written during the session (Annex IX). An illustration of the ARI-LAC Proposal can be found in Annex XII.

Objectives of ARI LAC-Bioeconomy are defined as follow:

- To promote a better understanding of the bioeconomy concept
- To promote policy dialogue, exchange and understanding among public and private bioeconomy stakeholders.
- To strengthen understanding of the potential of the bioeconomy and bioeconomic growth for inclusive, competitive and sustainable development.
- To systematize successful bioeconomy experiences in the region, especially on market and business development, public-private collaboration, university-business collaboration.
- To promote exchange of successful bioeconomy experiences from the region at local, national and regional levels.

Mr. Guy Henry, from the Center of Agricultural Research for Development (CIRAD, France) 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.

Mr. Eduardo Trigo from the Ministry of Science, Technology and Productive Innovation of Argentina, presented a state of the art of the diffusion/uptake of the bioeconomy concept in the LAC region. **Ms. Jimena Arango**, (MENON, Belgium) and **Mr. Adrian Rodriguez** (CEPAL, Chile) moderated the discussions to analyse and formulate a proposal to promote awareness raising of the Bioeconomy in the region, and to prepare a common Action Agenda.

The initiative is composed of three pillars: Policy dialogue; Capacity development and networking; and Media incidence.

Results from that discussion are listed below in the form of a working structure (three thematic pillars and one management section). This structure assigned specific tasks, suggested collaborators and principal outcomes for each pillar.

WP1 – Policy Dialogue:

Task 1.1: Bioeconomy policy conference LAC 2015 (2016) (ALCUE NET support)

Task 1.2: Regional bioeconomy policy dialogues (the first following the Bioeconomy Policy Conference).

Task 1.3: National conferences and issue specific workshops in interested countries (drawing from ALCUE-KBBE experience).

Task 1.4: Workshops with targeted audiences (e.g. Legislators, journalist).

Task 1.5: Policy position papers

Suggested collaborators: CEPAL, ...

Outcomes:

- An enabling policy context for the development of a policy supported bioeconomy.
- At least three countries have on-going initiatives towards the development of National Bioeconomy Strategies.

WP2 – Capacity development and networking:

Task 2.1: Bioeconomy School for Middle Managers in the Public and Private Sector (intensive two week training on bioeconomy issues)

Task 2.2: National and regional bioeconomy thematic networks

Task 2.3: Workshops with targeted audiences (e.g. young business leaders; graduate students)

Task 2.4: National business rounds (along with national conferences and workshops)

Task 2.5: Documents and other communication materials on the market potentials of the bioeconomy.

Suggested collaborators: (academic and private sector actors): CIRAD, CIAT, ICESI.

Outcomes:

- An enabling context for the development of a business driven and scientifically supported bioeconomy cluster.
- Increased public-private, business-academia collaboration on bioeconomy issues.

WP3 – Media incidence:

Task 3.1: LAC bioeconomy website

Task 3.2: Development of educational materials aimed at middle school students

Task 3.3: A series of info-graphs negotiated and published with major popular newspapers with bioeconomy related information.

Task 3.4: A survey on the public perception and knowledge of the bioeconomy.

Task 3.5: Focus groups to explore public perceptions of the bioeconomy (to support the elaboration of communication strategies at the national level in support of National Bioeconomy Strategies).

Suggested collaborators: MENON, NGO in Communication

Outcomes:

- Increased public knowledge about the bioeconomy concept, its potentials and requirements.

WP4 – Management:

Task 4.1: Communication & dissemination strategy

Task 4.2: Technology aspects

Task 4.3: Partners coordination

Task 4.4: Financial administration

Task 4.5: Project management

Tentative timeline: 2016-2018

Recommendation for SOM:

Senior Officials support to the implementation phase and funding requirements

EUCARINET submitted a proposal to enhance their participation in the Horizon 2020. A brief of this document can be found in Annex X.

Evening Sessions: “Capacity Development: Construction of Bi-lateral Pilot Bioeconomy Masters”

1. Presentation and discussion: Analysis of Bioeconomy postgraduate programs in the EU

Ms. Jimena Arango (MENON Belgium) introduced the general objective of capacity Development workshop which was to design a strategy for bioeconomy bilateral educational training and write a proposal for LAC capacity development for the next SOM. Mrs. Arango reminded the audience that a “bi-lateral Pilot Bioeconomy Masters” was only an idea proposed to improve LAC Bioeconomy capacity development. Therefore, she invited the audience to feel free to propose other tools regarding educational training and bioeconomy capacity development. See details of these suggestions in Annex XI.

To prepare this workshop a preliminary study was conducted in order to identify and invite appropriate EU experts regarding Bioeconomy educational training. The selection criteria regarding EU Bioeconomy Masters were the following ones:

- Interdisciplinary masters containing multidisciplinary subjects- At least a module on soft practices other than scientific and engineering methods (law, policy, socio-economics, project management)
- One of the syllabus’ central objectives has to deal with critical thinking on innovative solutions to achieve efficient use of resources by using Biotechnology methods
- Identifiable and concrete application modules of biotechnology for optimizing a specific natural resource (water, agriculture, fisheries, cattle, food safety)
- Masters containing exclusively a science and engineering combination without the other criteria were not selected

The three Masters who best suite these criteria would be:

- ECORES master – University of Eastern Finland – FINLAND
- MASTERNOVA- Neoma Business School – FRANCE
- MSc in Management of Bioeconomy, Innovation and Governance – University of Edinburgh – UNITED KINGDOM
- Presentation of current supply of Master (EU) of courses (LAC) related to bioeconomy

2. Presentation of current supply of Master (EU) of courses (LAC) related to bioeconomy

Three delegates of the 3 EU bioeconomy Masters selected made a presentation of their Masters focusing on: Degree of Multidisciplinary of Masters courses/ Integration between business schools and science engineering department/ presentation of teaching team and students profile (number/background/mother language/interests) / Program language/Duration / Cost/ Exchange Schemes and International dimension of the Masters/ Internship and job opportunities/ Relatives Funding Schemes etc...

Mr. Xavier Derooy for MasterNova

Mr. Alessandro Rosiello for the Management of the Bioeconomy, Innovation and Governance Masters

Mr. Markku Huttunen for MDP in Bio-Economy and Natural Resources Management

Same presentations were made by representatives of LAC Universities (2 countries represented: Argentina and Colombia):

Ms. Zaida Lentini and **MR. Hector Ochoa** for ICESI University, Colombia

Mr. Ramiro Costa and **Mr. Eduardo Trigo** introduces some training experiences from Argentinean universities and the Buenos Aires Grain Exchange

3. Discussion on potential “supply meets demand”

Mr. Guy Henry from CIRAD moderated this discussion. His first point was to underline the complementarity of EU and LAC universities regarding Bioeconomy topics. A common educational training would be boosted by a diversity of approaches, visions, savoir-faire, expertise and skills. All participants agreed that it will not be a unidirectional Masters Program.

The first question addressed to the audience was: How could you visualize in 3 or 4 years an educational training regarding Bioeconomy topics between EU and LAC? Some replies provided by the audience are presented in the following paragraphs:

Contents:

Students have to realize the prize of biodiversity. We do not want to teach a particular biotechnology application, we want to teach a vision, a stay of mind.

Distant learning:

Participant agreed that they don't want to go to a 100% virtual training program. Courses online are not excluded but they have to be limited (no more than 20%). The “face to face” is very important during the learning process; furthermore, students need to be coached and to exchange among themselves. The role of internship must also play a central role of Masters training.

“If you are talking about diversity and if you want to teach it, you do need a diversity of thoughts, of culture, etc. A bi-lateral Masters could be this opportunity of diversity.”

The online courses might be used as prerequisite courses. Thus, students can start the formation with the same minimum amount of knowledge.

Teaching:

The objective is to train student to become creative and out of the box thinking in the field of the bioeconomy. To do so, the training program has to be as well creative and out of the box thinking. To initiate an “active learning” (more interactions between students and teachers but also among the students) might be a good place to start an innovated Masters degree.

The actual lack of integration between science and business from Argentina side was raised. For now, it's complicated to involve Argentina universities in the construction of a formal degree between LAC and EU regarding bioeconomy because of the lack of appropriate institutions, said Argentina representatives.

Major turning point of Capacity development workshop:

The further Masters Degree between LAC and EU universities is a tool for capacity development. “We see how interest can converge. You have a strong demand and great supply which can meet. We have to build a network where demand can match supply, where all these great ideas of collaboration can be gathered. Then, maybe some stronger collaboration (as bi-lateral Masters Program) will emerge.”

4. Analysis and formulation of a proposal for a platform for bioeconomy LAC –EU educational training

During the rest of the session, a “SOM Proposal for Capacity-Building: Defining a platform for bioeconomy LAC –EU educational training” was elaborated by all participants:

Type of platform

There is a need for a capacity building network for Integration flexibility & sharing of skills > interactive on-line platform for educational training in order to develop further collaboration between LAC and EU faculties regarding bioeconomy studies.

Functions of virtual platform – educational training

1. Updated & dynamic data base of bioeconomy related courses – but offer a link with categorized courses (specialties), pilot installations available
2. Course material - Library of bioeconomy courses and professors
 - a. Shorter-courses
 - b. Undergraduate
 - c. Graduate
3. Help desk/ match maker with EU-LAC universities in the field
 - a. Brokerage events
 - b. TGS
 - c. Education angels – coaches
4. Private sector and industry related to bioeconomy for internships data base
5. Alumni network of bioeconomy
 - a. Diaspora network

Action agenda

- Demands and supplies

- Funding needed – spell the needs that need to be funded in order to prepare request – in order to propose there is a need of a figure
- Developing case studies repository (in coordination with Biodiversity & CC as well as Renewable energies WPs)
- Brokerage events (B2B with other events)
- Take potential LAC U key actors (deans, faculty coordinator) to visit the EU interested parties (TGS)
- Help the initial phase of the programme structure
- Education angels

Time line

2014 – Platform consolidation

2015-2017 – Implementation phase (in parallel to the BIO-CELAC Observatory)

This proposal will be added to the SOM Bioeconomy thematic report.

Meeting of the SOM JIRI Working Group on Bioeconomy

The objective of this meeting was to gather the outcomes and suggestions from the different proposals prepared during these Joint Events for the upcoming SOM.

- To inform about progress of activities on the Bioeconomy SOM WG
- To present concrete proposals and action plans on specific initiatives:
 - o Identification of research topics for Joint Calls implementation
 - o CELAC- BIOeconomy Observatory
 - o Capacity Development, including Awareness Rising
- To forward recommendation for SOM deliberations

Participants: ALCUE NET WP4 team members (10 representatives). See Agenda in Annex XII.

During the first module, Ms. Luciana Ayciriex from MINCyT pointed out the “Joint Call on selected R&I topics” process and the different activities that this work implied.

- Identification of bi-regional topics
- Elaboration of topic profiles + formulation of a report to be presented to the SOM, supported by ALCUE NET & ERANet-LAC
- Suggestions of topics to the EU-CELAC SOM for a first Joint Call (October/November 2014).

In Annex XIII, the whole list of the 12 identified topics is presented by thematic pathway.

During the rest of the modules, based on the progress and results of the recent Cali events, all participants were working on preparing the Roadmap for Implementation to present at the SOM. The draft roadmap prepared then is copied below.

Cooperation Actions and instruments: Road Map for implementation

Action	Activity (since March 2013)	Work progress (since March 2013)	Instruments (since March 2013)	Indicators + Impact (since March 2013)
Scientific areas/topics identification <u>Objective:</u> identification of research topics for Joint Calls in ERANet-LAC and H2020	- Identification and elaboration of research topics profiles in the following areas to be presented to the EU-CELAC SOM for a first ERANet-LAC Joint Call (see point 4 of this report): • Eco intensification • Biodiversity • Biotechnology • Biorefinery & BIO Products	4 Working Group Meetings (Buenos Aires, San Jose, Mexico DF, and Cali) 4 profiles of research areas 5 relative priority (topics)¹	Bi Regional Projects: ALCUE KBBE, EUCARINET, ALCUE NET EU-CELAC SOM Working Group on Bioeconomy Potential instruments for future implementation: -ERANet-LAC -H2020	- # of LAC research institutions included in the Joint Calls & H2020 research projects
CELAC Bioeconomy (BE) Observatory Support tool for the following objectives: - To support the understanding of the Bioeconomy in the region by providing specific information - Establishing a one-point entry to	<u>Proposal of the Observatory project:</u> Pillar 1 - Research & Innovation: Task 1.1: Development of common methodology, work team and main sources Task 1.2: First pilot database implementation (ALCUE NET) & methodological validation Task 1.3: Expansion of the databases by different countries / different topics Task 1.4: White papers Suggested collaborators: RICYT, CIAT Pillar 2 - Policy: Task 2.1: Development of common methodology, work team and main sources	First draft of CELAC Bioeconomy Observatory action plan beyond pilot phase in ALCUE NET (see annex I)	ALCUE NET project: implementation phase Studies Database mapping on CELAC on the three pillars ERANet-LAC Joint Call Bioeconomy SOM Working Group Cross cutting (funding) SOM Working Group	<u>Impact:</u> Better evidence base on Bioeconomy in the LAC region More focus on research and development national programmes and bi-regional cooperation projects Improve investment levels in Bioeconomy in LAC region

¹ The WG did not define explicit priorities; however relative emphasis was allotted to some topics/areas during discussion.

the LAC Bioeconomy - Providing information for policy making decisions	Task 2.2: First pilot policy inventory (ALCUE NET) & methodological validation Task 2.3: Policy watch (expansion to different countries / different topics) Task 2.4: White papers Suggested collaborators: CEPAL, IICA, FAO Pillar 3 - Market: Task 3.1: Development of common methodology, work team and main sources Task 3.2: First pilot sector value studies in selected countries (ALCUE NET) & methodological validation Task 3.3: Expansion of countries and sectors Task 3.4: White papers Suggested collaborators: Buenos Aires Grain Exchange, Consumers International, CIAT, Latin American Exchange Association, UNICA Management Task 4.1: Communication & dissemination strategy Task 4.2: Technology aspects Task 4.3: Partners coordination Task 4.4: Financial administration Task 4.5: completion of full proposal formulation + funding-negotiation Task 4.6: Direct link to databases from EU and other regions and countries			Europe and Latin American synergy in relation to the development of the global Bioeconomy <u>Indicators:</u> R&D investment; R&D personnel and Human Resources skills; Patents; Research and innovation programmes Number of regional policies & policies that could have an impact on bioeconomy; Define data availability (by sources & specific users); Database management; Bio-based industries and chains.
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Capacity Development (including awareness raising) Objective: advance the awareness on the bioeconomy model in technology market and societal aspects & the capacity development of relevant actors	<u>Proposal on Awareness Raising and Capacity Development for the Bioeconomy in LAC:</u> Pillar 1: Policy dialogue Pillar 2: CD network: Course work materials (some are already exist, majority has to be prepared). Databases on education / training watch / companies / alumni / professors. Brokerages (grant schemes, coaching / angels). Pillar 3: Media incidence by target audiences Pillar 4: Management & coordination	First draft of Awareness Raising Capacity Development action plan beyond pilot phase in ALCUE NET (see annex II)	Brainstorming Working Group Meeting (Cali, 2014) Awareness Raising activities: mass media rounds Formal Courses, Seminars and Master Degree programmes Report	# of informed people by target audiences # of mass media response publishing news related to Bioeconomy # of people trained graduated from the targeted Bioeconomy Capacity Development events
Formulation of a policy note highlighting Caribbean interest in H2020 participation	The EUCARINET policy brief provides Caribbean specific insights to improve H2020 EU-CAR collaborations as well as inputs into the multi-annual road map for the CELAC region of Horizon2020. The paper highlights clear cross-thematic (transversal) Caribbean specific advantages/assets for collaboration within H2020. Five topics for targeted EU-CAR collaboration have been identified for input in the multi-annual EU-LAC roadmap within the focal areas “Blue Growth (BG): unlocking the potential of seas and oceans” and “Sustainable Food Security (SFS)”. Furthermore, six recommendations for H2020 EU-CAR collaboration have been formulated.	EUCARINET Policy note “Securing greater impact through EU-Caribbean collaboration in Horizon 2020” (see annex III)	EUCARINET project	Increase EU-CAR research & innovation collaboration in the H2020

Annual Work Plan	
Activities	Timeline
First Observatory study on Successful cases (ALCUE NET)	May 2014
Second Observatory study on value quantification of national BE sectors (ALCUE NET)	May 2014
Bioeconomy Observatory pilot phase as part of the ALCUE NET project: Tasks: 1.1; 1.2; 2.1; 2.2; 3.1; 3.2; 4.1-4.5	2014
Capacity development pilot phase as part of the ALCUE NET project	2014
ALCUE NET Workshop on Europe- back-to-back the EU Bioeconomy Observatory meeting	2014
Bioeconomy Observatory Scaling-up phase: 2015-2017 Tasks: 1.3; 1.4; 2.3; 2.4; 3.3; 3.4; 4.6	
Joint Calls	October – November 2014
Bioeconomy Observatory formulation of the expansion phase project + negotiation	End 2014
Capacity development formulation of the expansion phase project + negotiation	End 2014
ALCUE NET Workshop on LAC (Brazil)- Evaluation of the pilot phase of the Bioeconomy Observatory & the Capacity Development	2015

ANNEX I: ALCUE NET Joint Events pictures



ANNEX II: 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
CELAC	Community of Latin American and Caribbean States
CEPAL	Economic Commission for Latin America and the Caribbean
CIAT	International Center for Tropical Agriculture
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
EUCARINET	Fostering the European Union - Caribbean Research and Innovation Networks
EULAC	European Union, Latin America and the Caribbean
FAO	Food and Agriculture Organization of the United Nations
IICA	Inter-American Institute for Cooperation on Agriculture
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
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
NGO	Non-governmental organization
OECD	Organisation for Economic Co-operation and Development
R&D	Research and development
R&I	Research and innovation

RICYT	Network of Science and Technology Indicators –Ibero-American and Inter-American
RTD	Research & Technological Development
S&T	Science & Technology
SOM	Senior Officials Meetings
STI	Science Technology and Innovation
WG	Working Groups

ANNEX III: Agenda for the Information Day: European funding programmes 2014-2020

March 18th, 2014 – CIAT, Cali
KM 17, Recta Cali- Palmira, Meeting room: Tropico

Time	Topic	Speaker / moderator
14:00 – 14:30	Word of welcome	Albin Hubscher, DDG CIAT
	Objectives & expected outcomes of the event	Guy Henry, CIRAD/CIAT
	COLCIENCIAS: collaborative activities with EU	Claudia Tinjaca, COLCIENCIAS
14:30 – 15:00	General objectives, context and conditions of the EC Horizon 2020 framework program	Cindy Van Hyfte, CIRAD
15:00 – 16:00	EC H2020 challenge 2 – Food security, sustainable agriculture, and forestry, marine/water research and the bioeconomy	Guy Henry, CIRAD/CIAT
16:00-16:20	<i>Coffee break</i>	
16:20-18:00	Presentation of other EU funding programmes ○ Specific calls, objectives and conditions from DG DEVCO (Development and Cooperation) Questions & Answers ○ EU financing instruments for Capacity Development Questions & answers	Cindy Van Hyfte, CIRAD Jimena Arango, MENON Magalie Dufour, CIRAD
18:00	Workshop closure	Guy Henry, CIRAD/CIAT

Annex IV: Agenda for the Working meeting on the LAC Bioeconomy Observatory



E4. Working meeting of the CELAC Bioeconomy Observatory

March 19th, 2014

CIAT, Centro Internacional de Agricultura tropical - KM 17, Recta Cali- Palmira, Colombia

Time	Topic	Speaker / moderator
08:30 – 08:50	Word of welcome by host representatives Meeting objectives + tour de table	Guy Henry, CIRAD
08:50 – 09:10	ALCUE NET project presentation & SOM relevance	Luciana Ayciriex, MINCYT
09:10 – 09:50	CELAC Bioeconomy Observatory: objectives & proposal Questions & answers	Eduardo Trigo, MINCYT
09:50 – 10:20	Synergies with the European Bioeconomy Observatory Questions & answers	Leticia Landa, JRC (via VC)
10:20 - 10:40	Coffee break	
10:40 - 12:20	Methodology for the CELAC Bioeconomy Observatory: key questions for analysis and discussion - Data identification: which data/information should be collected? - Data analysis: which key indicators should be produced or taken into account? - Data supply: which data/information sources should be used?	Alejandra Davidziuk, MINCYT
12:20 – 14:00	Lunch	
14:00 – 15:00	WG – Develop proposal: core team, main collaborators and tentative alliances	Eduardo Trigo, MINCYT
15:00 – 16:00	WG – Develop proposal: Modus operandi, hosting, etc	
16:00 – 16:20	Coffee break	
16:20 – 17:00	Work Schedule 2014-2016	Alejandra Davidziuk, MINCYT
17:20 – 18:00	WG - Funding and actions proposal for the SOM: 1 st draft	
18:00	Next steps + Workshop closure	Guy Henry / Eduardo Trigo
19:00	Dinner at CIAT (organization by ALCUE NET – CIRAD)	

ANNEX V: Thematic pathways details

	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
BIOREFINARY 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

ANNEX VII: Roadmap for the development of a Latin America and the Caribbean Bioeconomy Observatory (BIO-CELAC)

Introduction: setting the scene

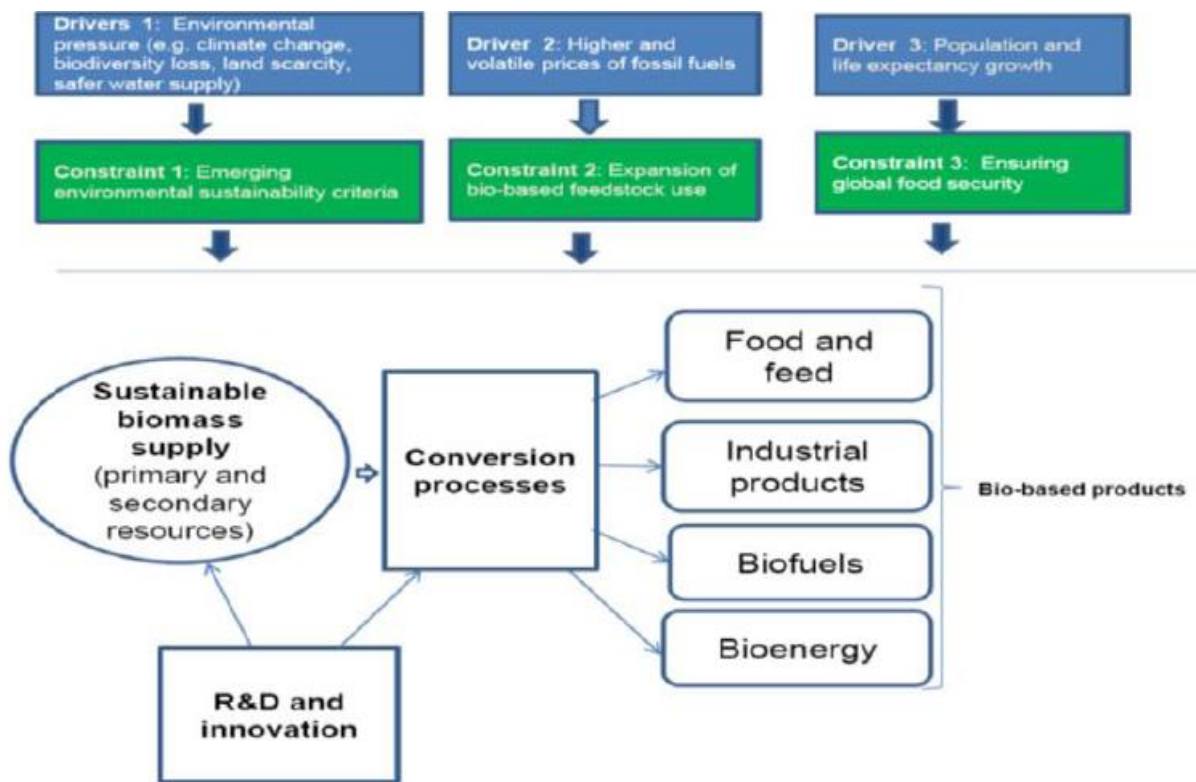
The emerging bio-economy is a dynamic and complex phenomenon.² Since the bio-economy is cross-sectoral in nature and influenced by a wide range of inter-connected global drivers and constraints, understanding and managing the bio-economy requires an integrated multi-dimensional approach. Existence of interrelated, multi-scale effects, feedback loops, limitations in estimating both the multiple relationships between the bio-economy sector and the rest of the economy and its overall impact call for an integrated assessment and monitoring of bio-economy development.

In this context, several questions are of immediate interest, including: i) how best to characterize bio-economy's structure, scope and relationships with the rest of the economy; ii) what data, methods and models are to be used for its measurement and modelling and what are their application limitations; iii) what is its (current and future) global impact on environmental and development processes - i.e. to some extent, similar to the debate on the effects of first generation biofuels production on food prices and indirect land use changes; and iv) what will be its long-term aggregated impacts on society? For answering these questions a systematic approach for collecting specific information is essential.

Today, the transition from a fossil-based economy to a bio-economy is justified by the need for an integrated response to several global mega-trends such as: i) food security concerns induced by the fast-growing global (increasingly urban) population, diet dynamics and higher life expectancy, and the consequent rise of food and feed production and demand (according to Food and Agriculture Organization, plus 60% by 2050); ii) high dependence on fossil-based resources and the need for strengthening energy security, which call for a more diversified supply option range; iii) increasing demand of biological resources for bio-based products; iv) increasing sustainability concerns (e.g. GHG emission reduction, moving towards a zero-waste society, environmental sustainability of primary production systems, increasing land use competition, etc.). Figure 1, highlights the essential relationships of the bioeconomy with these challenges.

² For the purpose of this document the "bioeconomy" it is understood as *the production of renewable resources and the conversion of these resources and waste streams into value-added products, such as food, feed, bio-based products and bioenergy.*

Figure 1: Global drivers and constraints conducive to bio-economy transition



The LAC Bioeconomy Observatory as a tool to support the development of the LAC bioeconomy

The EC financed bioregional network project ALCUE NET³ project has a specific task to develop a Bioeconomy Observatory in close collaboration with existing regional and national information systems to regularly assess the progress and impact of the bioeconomy and develop forward-looking and modeling tools for cooperation activities especially in but not restricted to R&I.

The specific objectives of this initiative are to contribute to:

- A better understanding of the bioeconomy by the general public and stakeholders
- Provide specific information to those actors who drive bioeconomy development within the region
- Establishing a one-point entry to the LAC Bioeconomy and Bi-regional cooperation
- Provide information support for decision making and policy development
- To promote business development and support investment decisions in the related sectors

³ For details of this EU FP7 INCO-Net project see www.alcuenet.eu

- To promote and increase the levels of social acceptance of the Bioeconomy principles, sectors and products
- Offering a platform for ALCUE Bioeconomy stakeholders to exchange information

A three pillar approach

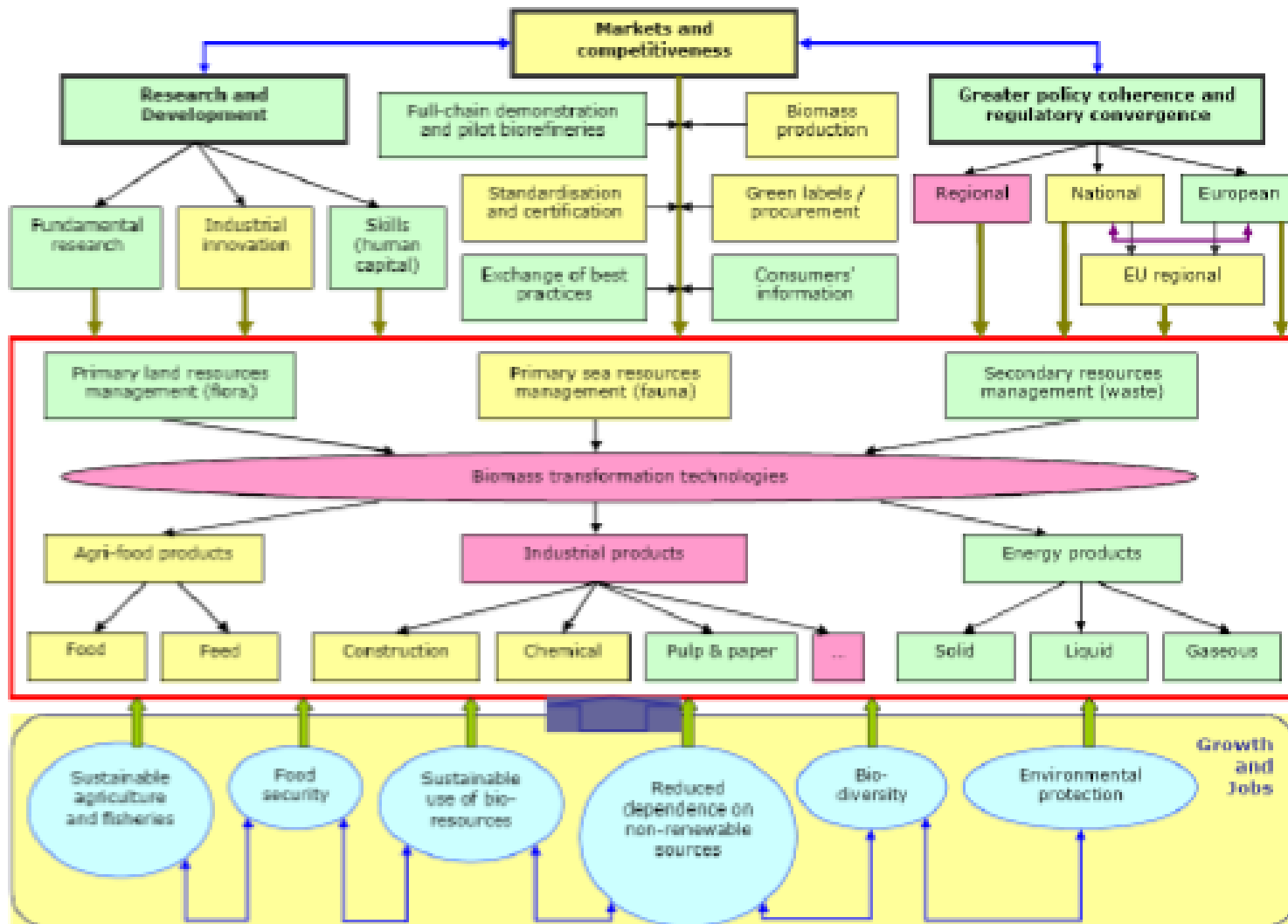
Experiences to date indicate that the bioeconomy is (i) highly dependent on the availability of new knowledge generating new options for linking natural resources to products and services, (ii) policy dependent, as it implies in many cases, the “creation” of new markets and for that public regulatory and policy interventions are essential, and (iii) creating investment opportunities in many sector of the economy (new value chains, new products, etc.).

Reflecting upon this reality the observatory will be organized around three main information pillars (i) research, development and information, (ii) bioeconomy related policies, and (iii) markets and investment opportunities.

Operationally, the observatory will be developed in a decentralized fashion seeking to take advantage – in as much as possible – of efforts already underway in relation to the collection and dissemination of relevant key information. Following this approach each of the pillars will be developed by an organization (or a group of organizations) already working in that field, with ALCUE-NET providing – during the initial phase – an “umbrella” entry point for all three pillars. This decentralized networking approach will also facilitate (i) to better reflect the diversity existing within the region, and (ii) the long term sustainability of the mechanism.

From the conceptual point of view (basis for the identification of the specific information to be included in each pillar), the organization of the observatory will follow a similar conceptual framework as the one currently being constructed for the development, monitoring and evaluation of the European Bioeconomy Observatory (see Figure 2).

Figure 2: Conceptual and analytical framework for the LAC bioeconomy



Construction and organization of the work plan

The Observatory is constructed around the aforementioned 3 pillars and complemented by a Management & coordination activity.

Pillar 1- Research & Innovation:

Task 1.1: Development of a common methodology, work team and main sources

Task 1.2: First pilot database implementation (ALCUE NET) & methodological validation

Task 1.3: Expansion of the database by different countries / different topics

Task 1.4: White papers

Suggested collaborators: RICYT, CIAT

Outcomes:

- Quantitative data (publication of key facts and figures on R&I on bioeconomy).
- Qualitative information (mapping of various initiatives on R&I on bioeconomy).

Pillar 2 - Policy:

Task 2.1: Development of a common methodology, work team and main sources

Task 2.2: First pilot policy inventory (ALCUE NET) & methodological validation

Task 2.3: Policy watch (expansion to different countries / different topics)

Task 2.4: White papers

Suggested collaborators: CEPAL, IICA, FAO

Outcomes:

- Comprehensive collection of qualitative policy information (in form of news), relevant to the bioeconomy to interact with policy-makers, dissemination, visibility at the international level

Pillar 3: Market:

Task 3.1: Development of a common methodology, work team and main sources

Task 3.2: First pilot sector value studies in selected countries (ALCUE NET) & methodological validation

Task 3.3: Expansion of countries and sectors

Task 3.4: White papers

Suggested collaborators: Buenos Aires Grain Exchange, Consumers International, CIAT, Latin American Exchange Association, UNICA

Outcomes:

- Collection of data to estimate economic impact and opportunities to make visible the LAC bio-based industries

Pillar 4: Management

Task 4.1: Communication & dissemination strategy

Task 4.2: Technology aspects

Task 4.3: Partners coordination

Task 4.4: Financial administration

Task 4.5: Completion of full proposal formulation + funding-negotiation

Task 4.6: Direct link to Observatories from EU and other regions and countries

Tentative timeline:

Pilot phase as part of the FP7 ALCUE NET project: 2014

Tasks: 1.1; 1.2; 2.1; 2.2; 3.1; 3.2; 4.1-4.5

Scaling-up phase: 2015-2017

Tasks: 1.3; 1.4; 2.3; 2.4; 3.3; 3.4; 4.6

Recommendation for SOM

Senior Officials support to the scaling up phase and identification of appropriate funding requirements and instrument

ANNEX VIII: LAC-EU Bioeconomy Awareness Raising and Capacity Development Agenda

March 20th 2014 – CIAT, Cali

KM 17, Recta Cali- Palmira, Meeting room: Trópico

Time	Topic	Speaker / moderator
LAC-EU Bioeconomy Awareness Raising		
08:30 – 08:45	Welcome, Introduction and Tour de Table	Guy Henry, CIRAD/CIAT
08:45 – 09:15	State of the Art of the Diffusion/uptake of the Bioeconomy concept in the LAC region: Introduction and discussion	Eduardo Trigo, MINCYT
09:15 – 09:30	Refrigerio	
09:30 – 12:00	Analysis and formulation of a proposal to promote the awareness raising of the Bioeconomy in the region	Moderators : Jimena Arango, MENON Adrian Rodriguez, CEPAL
12:00 – 12:30	Agreement with partners on a common Action Agenda	
12:30 - 13:30	Lunch Time	
Construction of Bi-lateral Pilot Bioeconomy Masters		
13:30 – 13:50	Presentation and discussion: Analysis of Bioeconomy postgraduate programs in the EU (introduction)	Jimena Arango, MENON
13:50 – 14:30	Presentation of current supply of Masters (EU) or courses (LAC) related to bioeconomy	Markku Huttunen ; Xavier Derooy ; Zaida Lentini ; Ximena Dueñas ; Ramiro Costa ; Eduardo Trigo
14:30 – 15:15	Presentation of Bioeconomy Masters of University of Edinburgh (UK) and expectations / suggestions for a further bi-lateral Master s	
15:15 – 15:30	Refrigerio	
15:30 – 16:15	Discussion on potential “supply meets demand”	G. Henry, CIRAD/CIAT (mod)
16:15 – 17:45	Analysis and formulation of a proposal for a bi-lateral Masters of Bioeconomy.	Magali Dufour, moderator
17:45-18:15	Agreement with partners on a common Action Agenda	J. Arango, MENON (mod)
18:15	Workshop closure	Guy Henry, CIRAD/CIAT
19:00	Cocktail (Organization ALCUE NET, CIRAD)	

ANNEX IX: Background Information & Instructions: Construction of Bi-lateral Pilot Bioeconomy Masters

DOC 1: Objectives of LAC-EU Bioeconomy Capacity Development workshop – Construction of Bi-lateral Pilot Bioeconomy Masters

Stakeholders: EU universities/business school
LAC universities/business school
Coordination: ALCUE NET, European Project

Main workshop objective: To construct the basis of a bi-lateral bioeconomy pilot Masters involving Latin American countries and European ones

Expected outcome: written proposition for the next SOM JIRI Meeting in order to obtain an ERANET funding for this future Bi-regional Bioeconomy Pilop Program

Workshop proceedings:

- 1- Specific interest of both side (EU/LAC Universities) are confirmed.
- 2- Presentation of current offer of Masters (EU) or courses (LAC) related to bioeconomy (10 minutes) (**CF DOC 2**)
- 3- Presentation of demand, interest and expectations for the future collaboration.
- 4- Discussion and construction of a generic bi-lateral feasible formula (**CF DOC 3**)
- 5- Formulation of a proposal for the next SOM Meeting (April 2014), presenting the common interest of both sides and the formula selected for a future bi-lateral LAC/EU Bioeconomy Masters. Formulation of a funding request to finance: coordination/ scholarships/...

DOC 2: Topics for presentation of current supply of Masters (EU) or courses (LAC) related to bioeconomy

1. Characteristics of the EU Master / LAC courses:

- Multidisciplinary?
- Integration between business schools and science engineering department
- Teaching team
- Students profile (number / background/ mother language / interests /...)
- Program language

- Duration
- Cost
- Thesis option?
- ...

2. **Exchange Schemes – International dimension**
3. **Internships – contact with industry and sector -practical applications**
4. **Funding Schemes**

DOC 3: Some key questions on preferences regarding a future bi-regional MS in Bioeconomy (to further the construction)

1. **What's the preferred formula?**
How much presence courses vs on-line courses? How to organize this? Possible program?
How many students' meetings/exchanges per year? For how long (2weeks, 2 months?)?
Latino Students going to Europe and vice et versa?
2. **Subjects taught:** Business studies / Law / Sociology of innovation / Economics of innovation / Management / Engineering / Marketing / Principles of biotechnology / / What is obligatory and what are electives?
3. **Program language?** All courses in English? Or?
4. **Students:** how many (min and max)? / Students profile: background (social scientists? Business studies students with interests in life science innovation? Both?), students speaking what language (English? Spanish? French?), academic degree, professional experience (public /private business experience ?)
5. **Professor Exchange LA-EU :** establishment of a teaching team ? meeting(s)? Common schedule? Courses formulated together?
6. **Student exchange LA-EU :** frequency / working group ? group assignment ?
7. **Master's thesis** option? yes or no? Implications for credits and duration...
8. **Internship(s)?** (X months?) Internship in LAC region for EU students and [vice versa](#) ? Obligatory or ...?
9. Program **duration** : 1 year, 2 years (including internships)? Minimum number of credits?
10. **Fee costs:** student fees (how much? Same price for different universities?) / funding schemes (what opportunities?)
11. **Legal aspect:** dual degree acceptance?
12. Regarding the **different type of Universities** collaborating: should we seek complementarity, synergies,?

ANNEX X: SOM proposal - Awareness rising for the Development of the Bioeconomy in Latin America and the Caribbean

ALCUE – KBBE identified six paths for the development of the bioeconomy in the Latin American and Caribbean region: (i) biodiversity resources exploitation; (ii) eco intensification; (iii) biotechnology applications; (iv) biorefineries and bio products; (v) value chain improved efficiencies; and (vi) ecosystems services.

Potential and drawbacks for the development of the paths have been identified. In *biodiversity resources exploitation* the main potential lies in the condition of the region as one of the most bio-diverse regions in the world; however, many of the most bio-diverse countries (except Brazil) lack scientific capacities to go beyond the screening segment in the development of bio-diversity related value chains.

The region has also made significant progress in the area of *eco-intensification*, but mainly related to the development of no-till and precision agricultural practices in commercial agriculture in the southern cone; small scale family agriculture has not benefited yet but promising developments are going in fruit production in Chile, for example.

A similar situation can be identified regarding *biotechnology applications*, with the main developments related to the development of GMOs, as part of a technological package that goes along with no-till and precision agriculture large-scale commercial models of production. Most of the knowledge in this field has come from outside the region and developments have been driven by large companies usually in the seed and fertilizers chains (e.g. Monsanto); however, there are promising developments at some NARDs such as Embrapa (development of a virus resistant bean variety, in collaboration with Monsanto) and INTA (sunflower and wheat drought tolerant/resistant varieties). As in other cases, scientific capacities are restricted to a few countries (Brazil, Argentina, Chile, Mexico, Colombia).

In the area of *biorefineries and bio products* the main experiences relate to biofuels, with the most important developments in Brazil in sugar-cane ethanol. Argentina also has become recently and important global player in the soybean-based biodiesel market. Many countries have passed blending legislation, but because of scale the main potential is restricted to a few countries, such as Brazil (sugarcane bioethanol), Argentina (soybean biodiesel) and Colombia (sugarcane ethanol and palm oil biodiesel). The short-value characteristic of these biofuel chains is a shortcoming yet to be overcome with the development of related longer value added bio-product chains. Also, the potential for small-scale biofuel developments oriented to energy intensification in remote rural areas has not yet been exploited sufficiently.

In *value chain improved efficiencies*, given the characteristic of the region as agricultural producer, the main potentials are in reducing post-harvest losses. Recent discussions on the future of food-systems in a context of global change also provide space for improving efficiencies, for example by reducing environmental footprints (carbon, water).

Finally, there are important developments in the field of *ecosystems services*, such as the creation payments for environmental services and participation in forestry-related carbon markets; however, these developments have been part of the climate change architecture and not seen as part of a bio-economic driven strategy for sustainable development.

Raising awareness about the bio-economy potential for the region and what it will take to untap such potential is therefore central for the development of the bioeconomy in the region. Four target groups are identified: politicians and policy makers, the scientific and academic community, the private sector, and consumers.

The main hurdles to overcome by the Awareness Raising Initiative (ARI LAC-BIOeconomy) include: (a) *politicians and policymakers*: overcome the lack of a bioeconomy policy perspective and the lack of institutional recognition of the bioeconomy as a model for sustainable and inclusive sustainable development; (b) *scientific and academic community*: overcoming the lack of lack of scientific capacities and technical resources; (c) *private sector*: providing evidence of the market opportunities for profitable business development; and (d) consumers: it is not yet clear which will be the roles of consumers in the development of the bioeconomy.

The type of information to be communicated differs in scope and depth among the different groups. The table in the Appendix provides a first approximation about the key messages that will be provided to each of the groups and the instruments that will be used to provide that information and knowledge.

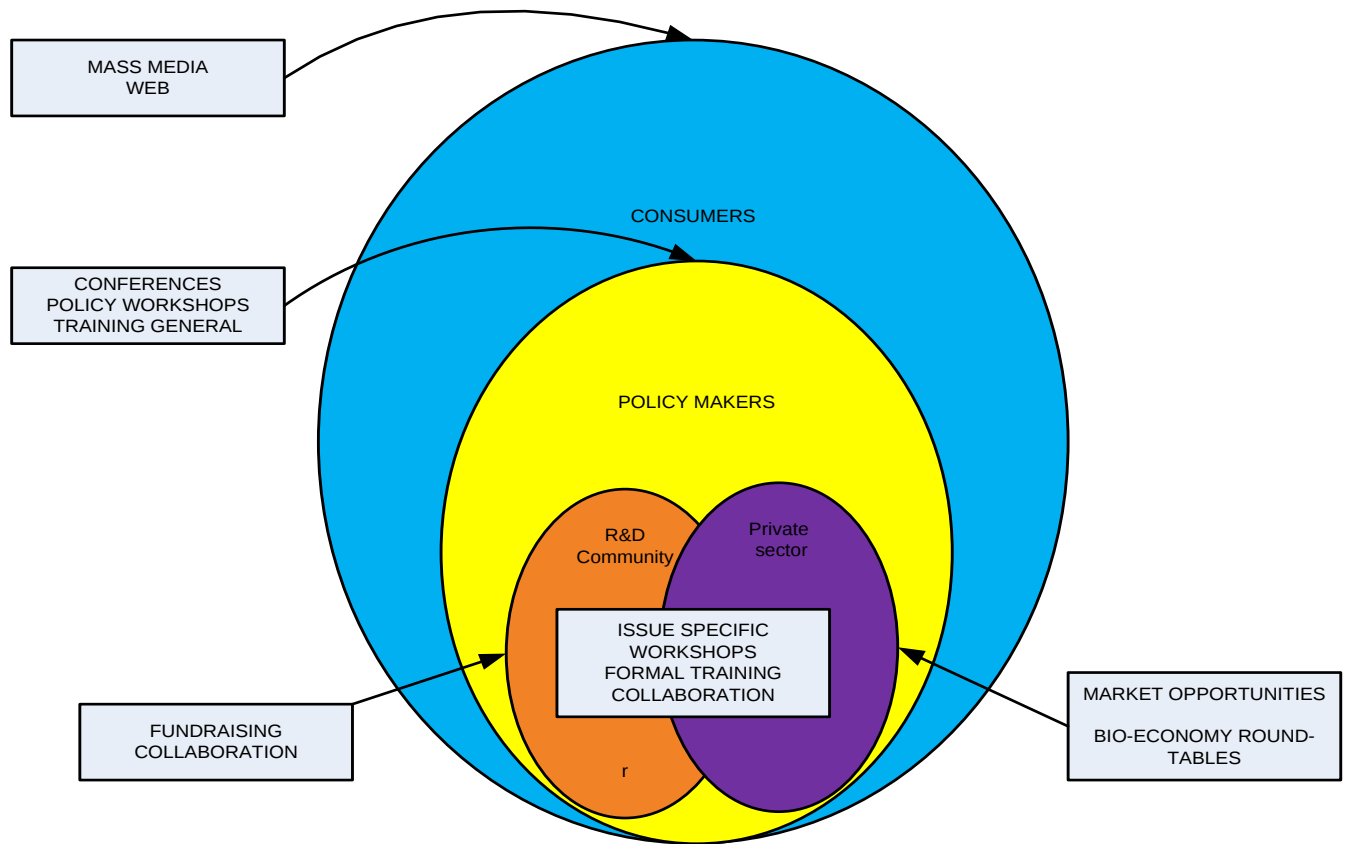
In line with the Plan of Action CELAC 2014, which calls for strengthening the intra-CELAC coordination for the participation of Latin American and Caribbean Countries in the JIRI initiative of the UE-CELAC, and given the short awareness diagnostic provided, the ARI-LAC BIOeconomy seeks to raise awareness among the target groups by communicating relevant information and knowledge for the development of strong bioeconomy clusters in countries of the region that are policy and scientifically supported, business driven, and socially accepted.

ANNEX XI: Appendix

	Key messages to be delivered	Instruments
Policy makers	The bioeconomy provides: • Short and long-term opportunities for improving competitiveness. • A concrete way forward for productive development models compatible with the green economy and low carbon economy paradigms. • A productive model for inclusive and competitive sustainable development. • A conceptual framework for closed production systems The bioeconomy requires Policy integration across ministries and sectoral priorities	High level policy conferences Workshops and position papers Bioeconomy schools Joint events and policy dialogues involving countries and other international organization with bioeconomy-related initiatives
Academics	• What is the bioeconomy concept • Which are the foreseen implications of the bioeconomy concept in terms professional development and knowledge demands. • Which are the incentives required for scientific publication within the intrinsically interdisciplinary bioeconomy concept. • The bioeconomy provides a platform to promote interdisciplinarity. • The bioeconomy concept is an intrinsic component of science convergence • There is a need for integration with (bio) technology-based companies (links with the private sector for innovations. • Patenting and IPR management are as important as publishing and hence (especially public) research centers need to develop those capacities. • Bioeconomy also implies for sharing (e.g. facilities), inside universities and with the private sector • The bioeconomy requires the capacity to think outside the box and universities have to develop that capacity.	Issue specific workshops and short courses (e.g. patenting, IPR) Workshops and position papers Open source arrangement to make available academic publications, books, information about conferences, etc. Special issues in journals (e.g. Journal of Bioeconomy)
Private	• There is a need for integration with the R&D community to promote innovation. • There are concrete examples that prove the potential of the bioeconomy for the creation of economic value. • There is potential for technology transfer and adaptation. • It is important to be aware of bioeconomy related changes in consumer preferences. • The bioeconomy is basically <u>private driven</u>; therefore, action and organization of the private sector is fundamental. • It is also important to be aware that the risks of creating new products is very high; therefore, <u>risk sharing</u> through <u>public-private partnerships</u> (including IPR issues)	Issue specific workshops and short courses (e.g. venture capital, IPR) Business rounds (mesas de negocios) Workshops and position papers.

	• There is a need for the development of <u>venture capital</u> and similar financial/funding arrangements.	
Consumers	• Provide concrete examples of bioproducts. • Not all bioproducts are created equal • Bioproducts lower environmental footprints • Because products are easy to recycle they have higher economic value.	Consumer's survey on the concept of the bioeconomy (results feedback to the bioeconomy steering groups; agree on 4 main lines to promote consumer awareness) Focus groups Educational material (for primary and high-schools) Consumer advocacy to promote change in business practices.

ANNEX XII: Illustration of the rationale of ARI LAC BIOeconomy



ANNEX XIII: Meeting of the SOM JIRI Working Group on Bioeconomy Agenda

March 21st 2014, CIAT, Cali

KM 17, Recta Cali- Palmira, Meeting room: *Latino America*

Time	Topic	Speaker / moderator
08:30	Welcome, Introduction and Tour de Table	Guy Henry, CIRAD/CIAT
08:45 – 09:10	ALCUE NET WP4 on SOM JIRI Bioeconomy WG: Activities carried out and expectations from the ALCUE NET	Luciana Aycirix, MINCYT
09:10 – 09:40	Progress and results of the recent Cali meetings: Capacity Building + Observatory Questions / Discussion	Jeanne Pahun, CIRAD Alejandra Davidziuk, MINCYT
09:40 – 10:00	Presentation of topics to be considered in the activities of the ERA-Net LAC calls Questions / Discussion	Eduardo Trigo, MINCYT
10:00 – 10:20 <i>Coffee break</i>		
10:20 - 11:00	The ALCUE NET Thematic Report & Concept Note on Bioeconomy (for SOM 14): discussion on the draft document	Luciana Aycirix, MINCYT
11:00 - 12:30	Elaboration of thematic recommendations for the ALCUE NET Concept Note for SOM decision (part 1)	Eduardo Trigo, MINCYT
12:30 - 14:00 <i>Lunch</i>		
14:00 – 15:30	Elaboration of thematic recommendations for the ALCUE NET Concept Note for SOM decision (part 2)	Guy Henry, CIRAD/CIAT
15:30 – 16:00	Next steps: Formulate Work Schedule 2014-2016	Eduardo Trigo, MINCYT
16:00	Meeting closure	Guy Henry, CIRAD/CIAT
16:00 – 16:20 <i>Coffee break</i>		

ANNEX XIV: Whole list of identified topics by thematic pathway

	Topics
BIOTECHNOLOGY	• Energetic crops: genetic improvement and efficient use of resources • Artificial seeds for wood production • Design and screening for multipurpose crops
ECO INTENSIFICATION	• Integral crop protection: Agricultural diversity • Crops productivity and stability • Biological processing of agricultural and agro-industrial waste
BIODIVERSITY	• Screening for new bioactive metabolites and enzymes from terrestrial and marine microorganisms for food and cosmetic industry, based on market demand • Health promoting compounds from plants • Integrated open access LAC databases on native organisms and their functionalities
BIOREFINARY & BIO PRODUCTS	• Valorization of agro-industrial and urban residues at current biomass processing and consumption sites. Biorefinery of wet biomass – energy efficient processing • Lignocellulosic biorefinery platform: production of high-value bio-based products • Green Biorefinery: Energy intensification and new bioproducts from wet biomass

ANNEX XV: Full participants list

Event 19/03/14: Working meeting on the LAC Bioeconomy Observatory

NAME	SURNAME	INSTITUTION
Luciana	AYCIRIEX	MINCYT
Alex	BERG	Universidad de Concepción
Catherina	CABALLERO	INDICASAT AIP
Ramiro	COSTA	Bolsa de Cereales
Carolina	DA SILVA	Dirección Nacional de Artesanías, Pequeñas y Medianas Empresas. Ministerio de Industria, Energía y Minería / Consejo sectorial de biotecnología
Alejandra	DAVIDZIUK	MINCYT
Xavier	DEROY	Neoma Business School
Ludo	DIELS	VITO
Guy	HENRY	CIRAD/CIAT
Markku	HUTTUNEN	University of Eastern Finland
Hubert	LINDERS	Consumers International
Jeanne	PAHUN	CIRAD
Adrian	RODRIGUEZ	CEPAL
Eduardo	TRIGO	MINCYT
Winston	TINTO	Caribbean Science Foundation

Event 20/03/14: LAC-EU Bioeconomy Awareness Raising and Capacity Development workshop

NAME	SURNAME	INSTITUTION
Elsa	ACOSTA	University Autonomous of Santo Domingo
Jimena	ARANGO	Menon
Luciana	AYCIRIEX	MINCYT
Alex	BERG	Universidad de Concepción
Catherina	CABALLERO	INDICASAT AIP
Jorge	CANO	CIDEIM
Ramiro	COSTA	Bolsa de Cereales

Carolina	DA SILVA	Dirección Nacional de Artesanías, Pequeñas y Medianas Empresas. Ministerio de Industria, Energía y Minería
Alejandra	DAVIDZIUK	MINCYT
Xavier	DEROY	Neoma Business School
Ludo	DIELS	VITO
Magali	DUFOUR	CIRAD
Guy	HENRY	CIRAD/CIAT
Markku	HUTTUNEN	University of Eastern Finland
Zaida	LENTINI	Universidad Icesi
Hubert	LINDERS	Consumers International
Hector	OCHOA	Universidad Icesi
Jeanne	PAHUN	CIRAD
Adrian	RODRIGUEZ	CEPAL
Winston	TINTO	Caribbean Science Foundation
Eduardo	TRIGO	MINCYT
Cardinal	WARDE	Caribbean Science Foundation

Event 21/03/14: Meeting of the SOM JIRI Working Group on Bioeconomy

NAME	SURNAME	INSTITUTION
Luciana	AYCIRIEX	MINCYT
Carolina	DA SILVA	Dirección Nacional de Artesanías, Pequeñas y Medianas Empresas. Ministerio de Industria, Energía y Minería
Alejandra	DAVIDZIUK	MINCYT
Ludo	DIELS	VITO
Guy	HENRY	CIRAD/CIAT
Jeanne	PAHUN	CIRAD
Adrian	RODRIGUEZ	CEPAL
Eduardo	TRIGO	MINCYT
Winston	TINTO	Caribbean Science Foundation
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