

**Innovation, Sustainability and Development:  
Case-Study Analysis of Agriculture, Agro-Industry and Bio-Industry  
as part of a Regional Bio-Economy**



**Corporación Biotec-Sede CIAT**

**Cali, Colombia - March 12 2010**

**Round Table Discussion linked to the STEPS Project 'Innovation, Sustainability, Development: A New Manifesto'**

## Roundtable Details

Convenor Name: Myriam Sánchez M  
Contact Email: [myriams@cgiar.org](mailto:myriams@cgiar.org)

### Participants:

- **Elisa Arond** / STEPS CENTRE
- **Jorge Berrío** / Smurfit-Cartón de Colombia. [jorgeberriomoreno@gmail.com](mailto:jorgeberriomoreno@gmail.com)
- **Gonzalo Gnecco** / Sucromiles. [ggnecco@sucromiles.com.co](mailto:ggnecco@sucromiles.com.co)
- **Viviana Gutiérrez** / PUJaveriana-Cali. [vgutierrez@javerianacali.edu.co](mailto:vgutierrez@javerianacali.edu.co)
- **Zaida Lentini** / ICESI. [zlentini@icesi.edu.co](mailto:zlentini@icesi.edu.co)
- **Ishitani Manabu** /CIAT. [M.ishitani@cgiar.org](mailto:M.ishitani@cgiar.org)
- **Mauricio Rodríguez** / Colciencias. [mrodriguez@colciencias.gov.co](mailto:mrodriguez@colciencias.gov.co)
- **Myriam Sanchez** / Corporación Biotec. [myriams@cgiar.org](mailto:myriams@cgiar.org)
- **Magdalena Urhan** / Universidad Autónoma. [murhan@uao.edu.co](mailto:murhan@uao.edu.co)

Venue Name: Corporación Biotec- Sede CIAT

Venue Address: Sede CIAT- Km. 17 vía Cali-Palmira

Duration of meeting: 6 hours

The discussion focused broadly on **agriculture** with a focus on life sciences applications in agriculture, agroindustry, & bioindustry in the Valle del Cauca region of COLOMBIA-South America.

## Report

Following the presentation by Elisa Arond of the background and context of the STEPS Project, Myriam Sánchez, chair of the roundtable, set forth the proposal to the group that the discussion of the 'Manifesto' take place from the perspective of Colombia, centring on **innovation, sustainability, and development: analysis of the case of agriculture, agro-industry, and bio-industry as part of a regional 'bio-economy'**.

To initiate the discussion, Myriam articulated the hypothesis proposed by the Manifesto, in relation to the 'urgent need for radical change in the global innovation agenda'. She mentions two explicit positions taken by the Manifesto:

- The political nature, more than just the technical aspects of innovation.
- A broader notion of innovation, in which R&D is just one component.

The Manifesto poses the question: How can we direct innovation toward sustainable development goals?

Opening up the discussion, the group recognises a special momento in Colombia, given the new '**Ley de Ciencia, Tecnología e Innovación**' (Science, Technology and Innovation Law), that connotes a transition from Science and Technology only, to an incorporation of Innovation as well. The question is posed: What is the significance of the new STI Law in terms of public policy? For academia? For industry? For regional planning?

It is pointed out that Colombia is a country with 'poverty in the midst of abundance', where recognised strengths and diversity in the countries industry and agriculture contrast sharply with indicators of poverty, deterioration of biodiversity, hydrological resources, carbon and water use footprints, among others.

The group considers it important for the country and the region to take advantage of the new STI Law, given that this Law:

- Promotes the transition to a system of innovation approach, in order to add value to goods, products and services.
- Empowers regions and obliges the national system to reinforce regional efforts by means of financial instruments and political mechanisms.

We also think thus we should focus on closing the circuit between demand and social need, focus on developing and designing capacities. The question arises: What sort of 'Manifesto' for our region?

The question arises:

Do we have an innovation agenda in the department? The answer is negative, and leads to recognition of the need to promote an explicit regional agenda.

**The discussion developed in relation to six themes:**

- 1. The new Science, Technology and Innovation Law**
- 2. Perspective from the private sector**
- 3. Institutional aspects of STI**
- 4. Formation of human resources**
- 5. Themes in the 'Manifesto' – in relation to the Valle del Cauca region**
- 6. Institutional aspects, relevance and demand for innovation**

In terms of the perception from the Private Sector, the perspective was noted:

- Separation between researchers and private industry
  - Given that biodiversity is a fundamental theme in the country, the countryside has been 'discriminated against' in favour of the cities. There has been degradation in the countryside, and entities that had provided leadership in research and innovation, like 'ICA, CIAT, CONIF, among others (comment: 'lots of discussion about biodiversity, but little action'. And there is an aspect of sector-ization of the issue: it is not just the responsibility of the Ministry of the Environment to talk about biodiversity, but also falls within the management of industrial sectors, rural development, etc as well)
- Separación entre los entes investigadores y la empresa privada

The group considers the possibility and interest in conforming and maintaining a discussion forum on this theme. The group will receive the discussion summary notes (see annex), following which an exchange will be established.

Picking up on three aspects of the 'Manifiesto':

- 1) Institutionalidad (organizational arrangements)
- 2) Relevance (focus – directionality)
- 3) Demand for STI (linking social needs and demands)

the discussion was oriented towards comments related to Colombia and specifically the Valle del Cauca región.

**The STEPS Project and the Manifiesto appear very relevant for the situation in the Valle del Cauca, with some details to be elaborated.** The subject of future meetings will focus on life sciences and the bioeconomy.

The institutional aspects of STI in Colombia appear as a crucial point. The STI Law is placed to open new opportunities, but the group considers it necessary to move from paper to actuality (from policy to action).

We take note that there is a group of about 20 people invited and interested in the Manifiesto discussions and the STEPS themes, that even though they were unable to be present, will join follow-up discussions.

See also the photos and full notes (Annex attached) from the meeting.

Myriam Sánchez M  
Cali, Colombia  
March 2010

## **ANNEX: FULL DISCUSSION NOTES**

### **ROUND TABLE “INNOVATION, SUSTAINABILITY AND DEVELOPMENT: CASE STUDY ANALYSIS OF AGRICULTURE, AGRO-INDUSTRY AND BIO-INDUSTRY AS PART OF A REGIONAL BIO-ECONOMY”**

**Corporación Biotec-Sede CIAT.  
Cali-Palmira, COLOMBIA, March 12 2010**

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#### **AGENDA**

1. Introduction of participants
  2. Background and Context of the Project
  3. Discussion
  4. Institutional Aspects, Relevance y Demand
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#### **1. PARTICIPANTS**

- Elisa Arond / STEPS CENTRE
- Jorge Berrio / Smurfit-Cartón de Colombia - jorgeberriomoreno@gmail.com
- Gonzalo Gnecco / Sucromiles - ggnecco@sucromiles.com.co
- Viviana Gutiérrez / PUJaveriana-Cali - vgutierrez@javerianacali.edu.co
- Zaida Lentini / ICESI - zlentini@icesi.edu.co
- Ishitani Manabu /CIAT - m.ishitani@cgiar.org
- Mauricio Rodríguez / Conciencias - mrodriguez@colciencias.gov.co
- Myriam Sánchez / Corporación Biotec - myriams@CGIAR.ORG
- Magdalena Urhan / Universidad Autónoma - murhan@uao.edu.co

#### **2. CONTEXT**

Elisa Arond, research assistant to the STEPS Project, presented the background and context to the project:

- STEPS Centre Mission : To link science, technology and innovation to poverty reduction, environmental sustainability and social justice
- Financed by the UK government
- Involves two institutions, based at the University of Sussex campus
  - Institute of Development Studies
  - SPRU – Science and Technology Policy Research
- Links with partners in other countries including:
  - Argentina, China, India
- Background to the project
  - 1970, a group of researchers at Sussex were invited to write a report on the state of science and technology in the world, and to provide recommendations on how S&T could better address problems of development. It was meant to be an introductory chapter to the World Plan of Action for Development (United Nations), later the ‘Sussex Manifesto’
    - Recommendations: qualitative and quantitative; including a greater focus on building of scientific-technological capacities. Also, among others, targets for industrialised countries to direct research toward development priorities.

- STEPS, New Manifesto. An independent Initiative, a process more than a report. Includes various activities:
  - Seminars at the Sussex campus in the UK
  - Round tables (in different countries – Kenya, Nigeria, Netherlands, Venezuela, Argentina, India, China, offer experiences around themes of innovation both in relation to specific local experiences and generally), seek to help open up spaces for discussion.

### 3. DISCUSSION

Myriam Sánchez, chair of the roundtable, set forth the proposal to the group that the discussion of the 'Manifesto' take place from the perspective of Colombia, centring on **innovation, sustainability, and development: analysis of the case of agriculture, agro-industry, and bio-industry as part of a regional 'bio-economy'**.

To initiate the discussion, Myriam articulated the hypothesis proposed by the Manifesto, in relation to the 'urgent need for radical change in the global innovation agenda'. She mentions two explicit positions taken by the Manifesto:

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**The discussion developed in relation to six themes:**

7. **The new Science, Technology and Innovation Law**
8. **Perspective from the private sector**
9. **Institutional aspects of STI**

## 10. Formation of human resources

## 11. Themes in the 'Manifesto' – in relation to the Valle del Cauca region

## 12. Institutional aspects, relevance and demand for innovation

### 3.1 La Ley de Ciencia, Tecnología e Innovación

Mauricio Rodríguez from Colciencias, described some fundamental aspects of the Law:

- Supported by the regions
- Promotes the transition to a system of innovation approach, in order to add value to goods, products and services.
- Empowers regions and obliges the national system to reinforce regional efforts by means of financial instruments and political mechanisms.
- Seeks to strengthen regional systems of STI.
- Creates a Research, Development and Innovation Fund (recognising the importance of involving broader society in the process, financing will not depend solely on government, but on the attraction of private investment – national and international – to try to respond to demands expressed from the regions, with the aim of investing and directing research toward innovation outcomes)
- Seeks to strengthen the institutionality – Colciencias as a part of the government, and links with other ministries and sectors: Departamento Administrativo, Fondo de Financiación, Consejos Nacional de Beneficios Tributarios.

Proposals arise in relation to the new law: How is this transition being promoted? How is it moving from the pronouncement of policy to practice? For example:

- How is an evaluator positioned in the new policy context, if the same evaluators are maintained as before?
- How are competencies oriented towards innovation and the benefit of society being promoted?
- The new law can push change. But if the law is not complemented/matched and does not establish a differentiation in the framework of the regions, it remains at a level of dangerous generality with failed expectations.
- Is there actually a change in conceptualisation [of innovation] or is it just that the term 'innovation' has been added?
- Legislation, for example: Access to genetic resources
- To relate policy and practice, it could be proposed to publicise practical cases more widely.

### 3.2 Perspectives from the Private Sector.

- Separation between researchers and private industry
- Given that biodiversity is a fundamental theme in the country, the countryside has been 'discriminated against' in favour of the cities. There has been degradation in the countrysides, and entities that had provided leadership in research and innovation, like 'ICA, CIAT, CONIF, among others (comment: 'lots of discussion about biodiversity, but little action'. And there is an aspect of sector-ization of the issue: it is not just the responsibility of the Ministry of the Environment to talk about biodiversity, but also falls within the management of industrial sectors, rural development, etc as well)
- This government has propelled the relation between demand and consumption
- Research has focused on economic results in our región
- It is necessary to identify the pieces of the process of innovation, but it's important to also identify the model of innovation. To tie together all the processes and focus on the market

- The verticality [of the supply chain, of a linear view of innovation] does not help promote other visions – of who manages knowledge, has knowledge, and can or does contribute to innovation
- The region – thanks to the STI law, is integrating pieces between the University-State-Private Industry – in order to achieve results

### 3.3 Institutionalality of STI.

- The big revolution in the world of the **network** (internet) vs the hierarchy.
- Hierarchy doesn't promote empirical, practical visions
- Networks promote change and this has influenced innovation
- Opens up spaces, in order to appropriate empirical, practical knowledge
- Business with the 'base of the pyramid'. The broadening of the base, bottom-up consumption, is pushing knowledge generation in both directions – bottom up and top down.
- Increased participation in the innovation process leads to greater awareness being generated about resource use, in order to achieve sustainability and development.
- [Research] projects should have sustainability and development components.
- How to intervene in decision-making? This may be related to the question of how we build trust, a key issue in the región.
- It is important to review current institutionalality. There are distortions: Technical entities became political entities.
- A fundamental theme is accountability [rendición de cuentas]. As the "Manifesto" expresses: to establish an explicit culture of "democratic accountability"

### 3.4 Formation of Human Resources

- Biologists are trained to see the environment as isolated from the rest of the system, to work in untouched environments
- A proposal for the formation of new generations of biologists is to see a 'transformed environment'. Interdisciplinary work is important.
- In practical [non-research] contexts, work is also done which is not communicated, e.g. in agriculture there is also often a separation from the related environmental aspects. If society keeps functioning in a sector-based way, no answers will come with regard to sustainability, development and quality of life.
- An example from Madagascar: The cosmetic company Chanel financed indigenous communities to search for new plant-based aromas, while sociologists and biologists were involved to learn about how the use of such biodiversity might be done sustainably and also to help improve the quality of life of the community.
- Other instruments and initiatives to address the issue of brain drain.
- Transition from policy to practice, evaluation, skills training – how do we build new competencies at all levels?

### 3.5 Themes in the "Manifesto" – Relating to the Valle del Cauca region.

- The Manifesto has very general themes, but which could be the specific aspects for improving conditions for sustainability, from the perspective of all spheres of society?
- These elements have to be addressed from the political arena as well, given that government decisions are those that mobilise funds and can result in transformations.

- The Manifiesto shouldn't just remain as a document, but should be brought to the spheres of decisión-making.
- The Manifiesto emphasises that central themes should be poverty reduction and environment. Where are the other issues?
- It could be proposed to generate a regional manifiesto, drawing from the STEPS Manifiesto.
- The Valle del Cauca has had serious efforts to address the relationship – University-State-Private Enterprise, the last being the Regional Commission of Competitiveness, which chose priority 'world class' sectors to be promoted in the región (sugar, Health, tourism, ICTS, bio-industry, and aeronautical services)
- The new law should take into account the proposals and efforts from the región
- EI CODECTI: what should its role be?
- There is progress in Cali in the participation of different actors in the construction of collective agendas for the region, but it is still not clear how these agendas will be put into practice.
- We have identified the sectors (world class) but where are the businesspeople?
- In order to generate innovation and manage it, there needs to be an appropriation of concepts (innovation systems, radical innovation, incremental innovation) on the part of relevant actors and decision-makers
- It is absolutely necessary to monitor politics in the regions. Fundamental factors include:
  - Construction of agendas,
  - building trust,
  - vision,
  - leadership,
  - wider participation,
  - moving from concepts to models,
  - political will,
  - addressing 'capture' of political centres and public universities,
  - closed fora managed by elite groups from the capital city (e.g. around setting environmental norms)
- There are efforts like those from SENA, ICONTEC

### 3.6 Institutionalidad, Relevancia and Demand for Innovation ( See Section 4)

#### Other Observations:

- Small projects conducted in a network serve as pilots
- Changing the linear scheme of research, which doesn't generate trust
- Integration of industrial sectors; generate long-term partnerships
- A competitive sector requires a competitive academia
  - Products shouldn't just be academic
- Research groups generate academic products in part because they are measured/evaluated by these products
- Colciencias is developing some changes in the evaluation of research groups
- Relation **Academia**-Enterprise-State (not just university).
- Capacity building and tools for participating in international negotiations.
- Institutional capacity to create vision.
- STI described only in terms of working 'for the poor' can instead be analysed including the full range of actors in a value chain, not just focusing on the poorest – the risk is that focusing solely on poverty as an object of STI results in the perpetuation of poverty

The group considered the possibility and interest of forming and maintaining a discussion forum on this theme. The group will receive the discussion summary notes, following which an exchange will be established.

Picking up on three aspects of the 'Manifesto':

- 4) Institutionalality (organizational arrangements)
- 5) Relevance (focus – directionality)
- 6) Demand for STI (linking social needs and demands)

the discussion was oriented towards comments related to Colombia and specifically the Valle del Cauca region, as detailed in the following table.

#### 4. INSTITUTIONALITY, RELEVANCE Y DEMAND FOR INNOVATION

	<b>Policies</b>	<b>Practice</b>	<b>Limitations</b>	<b>Actions</b>
<b>Institutionality</b>	<ul style="list-style-type: none"> <li>• Ministry of Agriculture reduced its institutions for Research and Innovation.</li> <li>• Science, Technology and Innovation Law</li> <li>• CODECTI of the Valle del Cauca</li> </ul>	<ul style="list-style-type: none"> <li>• There is conceptual confusion and operational rigidity</li> <li>• Methodologies are applied, but the objective is not clear</li> </ul>	<ul style="list-style-type: none"> <li>• There is no clarity of the roles of the actors in the system.</li> <li>• Are there competencies among project evaluators?</li> <li>• Institutions have been lost that were dedicated to the formulation of policies that integrated different actors</li> </ul>	<ul style="list-style-type: none"> <li>• Academic and scientific council for evaluating the government</li> <li>• Educate entrepreneurs in biotechnology and technologists in entrepreneurship.</li> <li>• Management of the perception of risk in order to increase investment (not just security risks, but also legislative and institutional)</li> </ul>
<b>Relevance or Focus (Directionality)</b>	<ul style="list-style-type: none"> <li>• There is no clear policy</li> <li>• Synchronization with MICT and the DNP with Colciencias on the theme of world class sectors</li> <li>• Colombia and the regions have proposed some focal points in their different agendas</li> </ul>	<ul style="list-style-type: none"> <li>• Even if the agendas exist, what is lacking is putting them into practice – to do so, what is needed: <ul style="list-style-type: none"> <li>○ Institutionalidad</li> <li>○ Agenda for Action</li> <li>○ Resources</li> <li>○ Monitoring</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Information systems on [research] and innovation projects do not exist, which would enable monitoring and evaluation of results and progress</li> <li>• Research groups in the region do not have direct relationships with the formulation of agendas in the region</li> </ul>	<ul style="list-style-type: none"> <li>○ There is a need to return the institutionalidad to the countryside, in order to make it more competitive</li> </ul>
<b>Supply-Demand of STI</b>		<ul style="list-style-type: none"> <li>○ ¿Competitiveness for what? It should be for the wellbeing of all.</li> <li>○ ¿Science and technology directed towards what objectives?</li> </ul>	<ul style="list-style-type: none"> <li>○ There are not sufficient human resources for specific areas needed in the región (e.g. phytopathologists, technology evaluation)</li> </ul>	<ul style="list-style-type: none"> <li>○ Value chains that involve farmers and minority groups.</li> <li>○ Models like Fedecafe could be replicated in other supply chains</li> </ul>