



Legislation for Science and Technology in Colombia

Eduardo Posada

COMSATS

Teheran, 2014



Some historical actions in Colombia

- 1780 Mutis Botanical Expedition
- 1800 The Astronomical Observatory, the first one in America
- The Chorographic Commission of Codazzi 1850-1859
- 1933 Creation of the Colombian Academy of Sciences
- 1936 the Institute of Natural Sciences
- 1946. the Faculty of Sciences of the National University



Some historical actions in Colombia

- 1968 Foundation of Colciencias as a Fund of the Ministry of Education
- 1970 Foundation of the ACAC (Colombian Association for the Advancement of Science)
- 1979 ACAC proposed the first loan of the IDB to Colciencias
- 1982 Execution of Colciencias and Icfes IDB loans
- 1987 Meeting of Ministers on science and technology
- 1989-1990 Year of science and technology
- 1989 Mission of Science and Technology



Some historical actions in Colombia

- 1990 law 29 for the promotion of science and technology
- 1991 Related Decree - Laws 29: 585, 591, 393. The National System of Science and Technology is born.
- 1991 inclusion of S & T in the Constitution
- 1992 second loan IDB - Colciencias
- 1993 Mission of Science, Education and Development
- 1995 third loan of IDB to Colciencias (\$ 200M)



Some historical actions in Colombia

- 1996, 1999, 2002: Inclusion of S & T in the National Development Plans
- 1997 Tax incentives for investments in S & T
- 2004 Request of a new loan of IDB (unsuccessfully)
- 2009 New law of Science, Technology and Innovation



Law 29 of 1990 for the promotion of scientific research and technological development

Article 4th. The national economic and Social policy Council will determine in each fiscal year the decentralized entities that should allocate resources and their amount, to activities of research and technological development. The Investments to which this article refers will be managed through inter - administrative contracts with Colciencias



Law 29 of 1990: for the promotion of scientific research and technological development

Article 7th. In order to rationalize public spending the inclusion by national public establishments of budgets for plans and programs of scientific and technological development, will be done in agreement with Colciencias

Related Decrees – Laws

- 585 of 1991: Creation of the **National System of Science and technology. COLCIENCIAS becomes an institute**
- 393 of 1991: Creation of **corporations of science and technology with public and private financing, under private legal regime**
- 591 of 1991: Regulations for State contracting. **Direct contracting for S&T**



National Constitution (1991)

Article 70. The State has the duty to promote and encourage access to culture for all Colombians on equal opportunities by means of permanent education, scientific, technical, artistic and professional teaching in all stages of the process of creation of national identity. The **State will promote research, science, development** and dissemination of the cultural values of the nation.



National Constitution (1991)

Article 71. The pursuit of knowledge and artistic expression are free. The plans of Economic and social development will include the promotion of Sciences and, in general, of culture. The State will **create incentives for people and institutions that develop and promote science and technology** and other cultural expressions and provide special support for individuals and institutions engaged in these activities.

Law 80 of 1993

Article 24. The principle of transparency. In Accordance with this principle:

1. The contractor shall always be chosen through public competition except in the following cases in which it may **be contracted directly**:

(d) the direct development of scientific or technological activities....

The new procurement law, 1150 of 2007 and the regulatory decree 2474 of 2008, **maintain direct contracting for science and technology**

Tax Incentives



Article 158-1. Deduction for investment in scientific and technological development.

Those who make investments directly or through research centers, technological development centers, constituted as non profit institutions, or centers and **research groups of institutions** of higher education, **recognized by Colciencias, in projects qualified as scientific or technological innovation** by the National Council of Science and Technology, shall be **entitled to deduct from their income the hundred twenty-five percent (125%) of the value invested** during the period in which the investment was made.

Tax Incentives

The institutions may opt for the alternative of deducting **the hundred twenty-five percent (125%) of the value of the donations** made to centers or groups referred to in this article, provided they are intended exclusively for projects previously qualified by the National Council of Science and Technology.



The new law of science and technology (1286, 2009)

Article 5. Transformation. The Colombian Institute for the Development of Science and Technology "Francisco José de Caldas" - **COLCIENCIAS** – **is transformed in the Administrative Department of Science, Technology and Innovation - COLCIENCIAS-** as governing body of the sector and of the National System of Science, Technology and Innovation - SNCTI-, responsible for formulating, guiding, direct, coordinate, execute and implement the policy of the State in this matter, in accordance with the plans and development programs



The new law of science and technology (1286, 2009)

Paragraph 1. The **Director of Colciencias will be member with voice and vote of the CONPES (National Council of Social Economic and Social Policy)** and should be cited by the President whenever the Council of Ministers treats subjects related to the functions of his Department

Article 16. The system of Science, Technology and Innovation

The National System of Science and Technology, referred to in Decree 585 of 1991, will be called the National System of Science, Technology and Innovation - SNCTI-.



The new law of science and technology (1286, 2009)

Article 19. Coordination. **The national system of science, technology and innovation - SNCTI - will be coordinated by the Administrative Department of Science, Technology and Innovation - COLCIENCIAS-** which, in turn, will have the boards of the National Programs of Science and Technology, territorial coordination instances and the Advisory Council of Science, Technology and Innovation to articulate the system.



The new law of science and technology (1286, 2009)

Article 22 National Fund for Science, Technology and Innovation, Francisco José de Caldas.

The National Financing Fund for Science, Technology and Innovation “Francisco José de Caldas” will be created as an autonomous trust belonging to COLCIENCIAS. For these purposes the Administrative Department of science, Technology and Innovation - COLCIENCIAS – will sign a contract with a suitable financial institution



What do we have today?

The “locomotive” of Science, Technology and Innovation

- National Development Plan 2010-2014 (law 1450)
- New tax incentives: **175% of the investment in R & D can be deducted from income** up to a ceiling of 40% (law 1450, 2011)
- Plan 2019
- **Constitutional reform approved for the management of oil and mining royalties (2011)**
- **10% of them will be invested in science, technology and innovation in the regions (about US\$ 500 M a year)**
- Loan of US 50 M for restructuring the system of S & T and later US 450 M more for Colciencias



Centro Internacional de Física

Eduardo Posada
Director



Mission:

Promote basic and applied research, specially in physics, and industrial and technological development in Colombia and the Andean and Caribbean countries.

Objectives:

- Development of basic and applied research
- Scientists training
- Industrial technological development and innovation
- Introduction of new technologies in the country
- Creation of knowledge-based industries (spin offs)

Cif's groups

BASIC RESEARCH

- Biophysics and Membranes biology
- Optics
- Material science



APPLIED RESEARCH AND TECHNOLOGICAL DEVELOPMENT

- Applied Physics and Tech. Development
- Biotechnology





OUR MOST IMPORTANT PROJECTS

ENVIRONMENTAL BIOTECHNOLOGY

- Environmental Impact Assessments -
- Cleaner production

BIOPHYSICS AND MEMBRANE BIOLOGY

- Leishmania chloride channels, therapeutic potencial
- Neurosciences

OPTICS AND MATERIALS

- Topographic Lidar
- Nanotechnology in agriculture

APPLIED PHYSICS AND TECH. DEVELOPMENT

- Strategies for the optimum use of electric energy by vulnerable population

PROJECTS FINANCED BY THE ROYALTY FUND



PROJECT:

Identification of alternatives for mitigation of the Climate Change impact in the basin floor in Rio Negro y Lower Magdalena river



US\$ 3.000.000

Participants:

-6 towns

-3 Universities





NEW PROJECTS: Sustainable Strategies for the optimum use of Electric Energy by Vulnerable Populations



30/05/2014



US\$ 3 million
Installation of solar panels
Development of smart
control mechanisms for
street lightning
Participants:

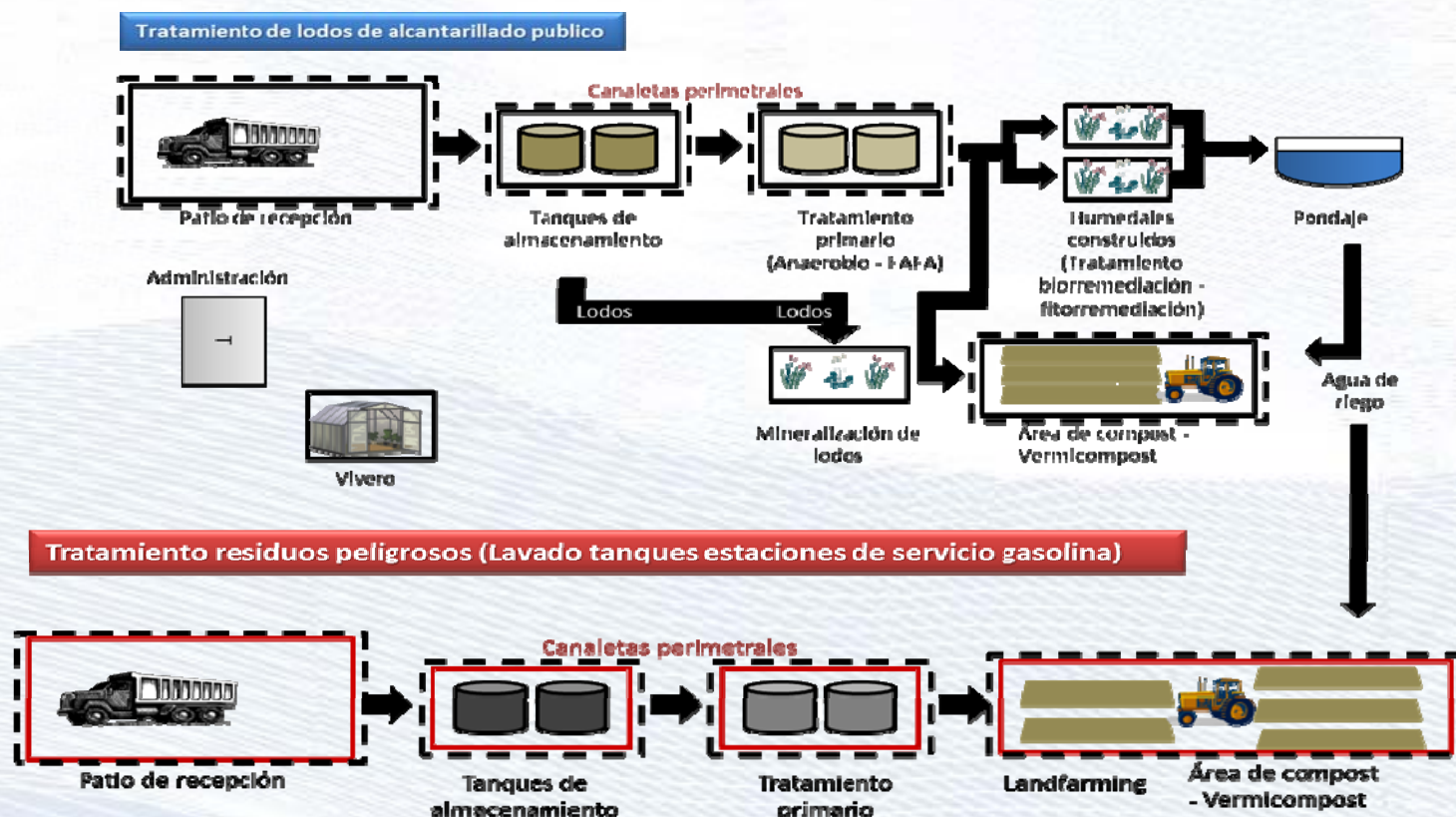
- 8 Towns
- 3 Universities



Centro Internacional de Física © 2013

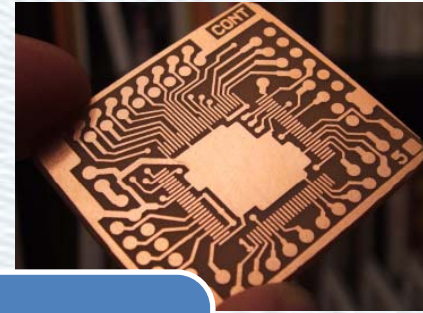
NEW PROJECTS: Industrial Sludge Management - Spin Off

Services of remediation and final disposition of residues contaminated with hydrocarbons.



NEW PROJECTS :

Chip design laboratory



Objectives

- Design services by highly educated and experienced designers with broad experience in commercial design houses
- Innovative IP low cost designs
 - Access to a pool of the best Colombian designers

Key Partners

- Chipus Microelectronics Design House, Brazil.
- Silterra Malaysia Foundry
- Electrical Engineering Professor – University of South Florida
- X-Fab Semiconductor Foundries

NETWORKING

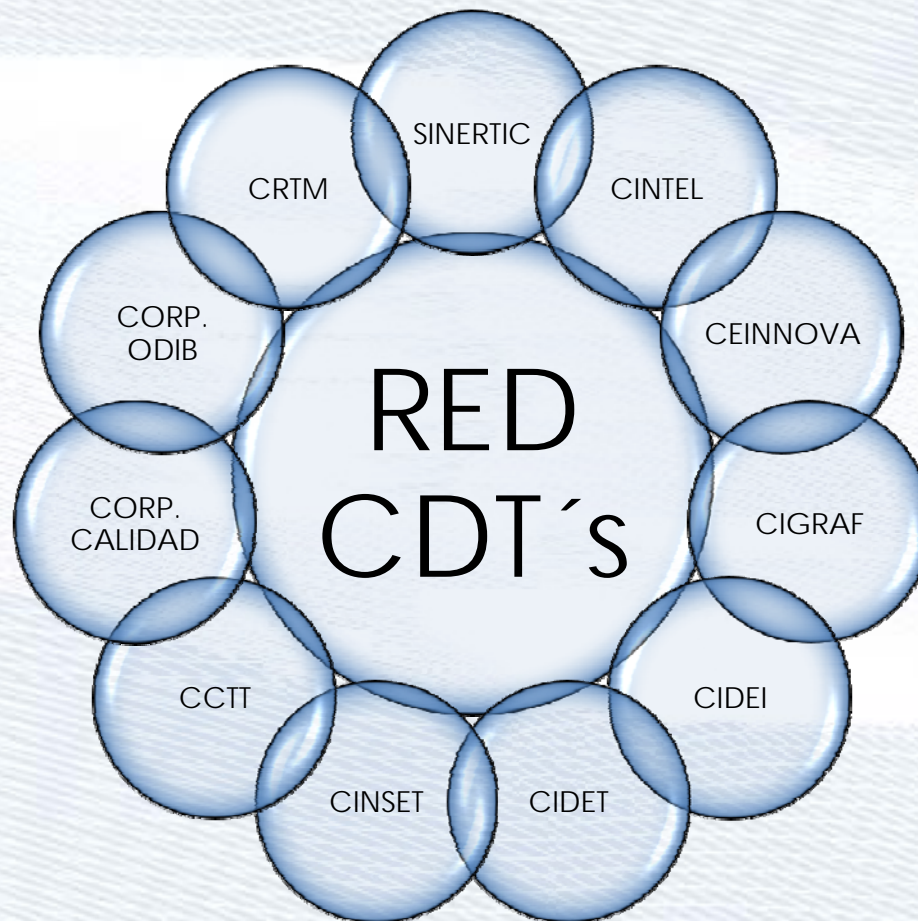


Association with 5 Centres with similar characteristics:

- Complementary research fields
- High scientific and technological level
- Regional distribution and international recognition



NETWORKING



International NETWORKING



- COMSATS
- ICTP
- TWAS
- Max Planck Institute
- Ecole de Physique et Chimie, Paris
- Paris VI
- NWY, Biophysics Institute
- Woods Hole

