



# ELAN

European and Latin American  
Technology based Business Network

[www.elannetwork.org](http://www.elannetwork.org)

## IS ANALYSIS FOR ALTERNATIVE ENERGIES SECTOR AT COSTA RICA



This project is funded by the European Union.

# Template: Delineation

## Products

- . Renewable and alternative energies
- .. New Energy technologies
- ... National and worldwide initiatives.

## Technologies

- . Nanotechnologies
- .. ICTs
- ... Alternative technologies
- .... Biotechnologies

## Markets

- . Domestic use
- .. Industrial use
- ... others



# Template: Ambitions & Pathways

## Ambitions (long term)

- . To become a neutral carbon country by 2020
- .. To become a developed country by 2050
- ... To become a worldwide leader at this topic

## Technological pathways

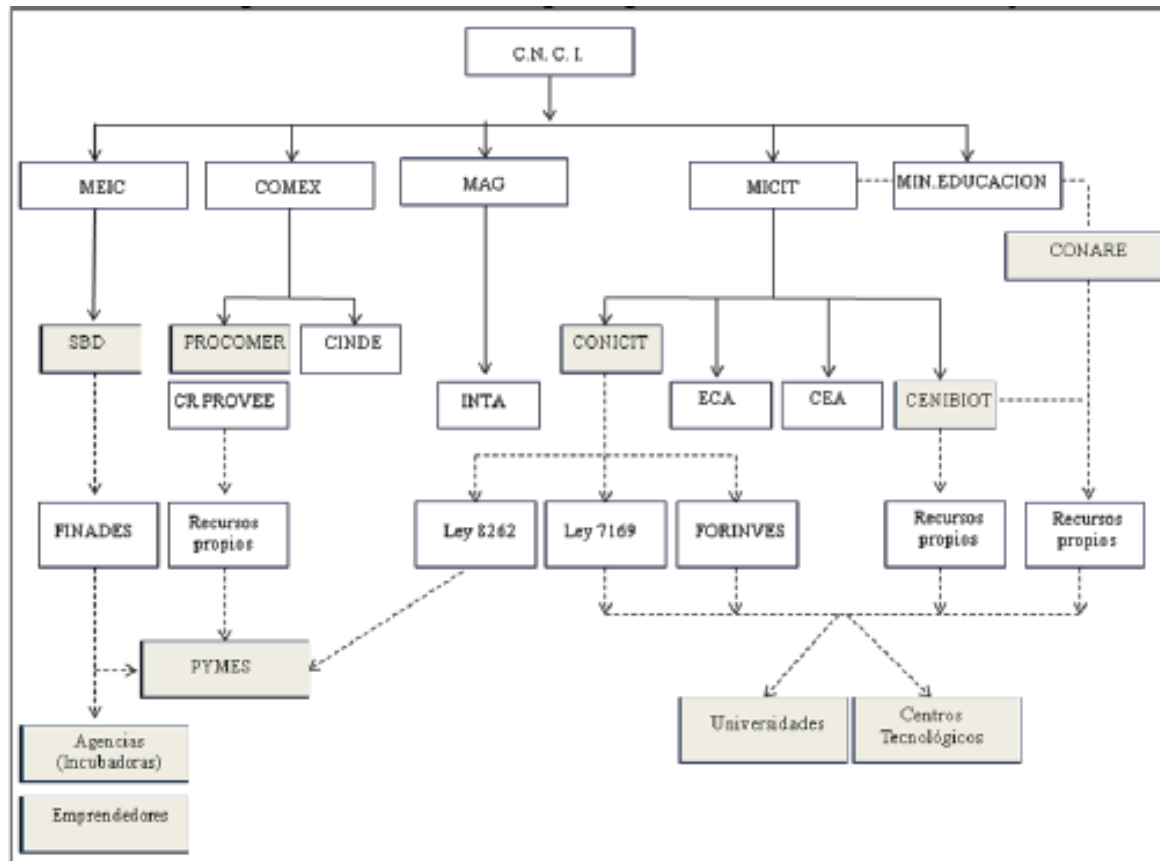
- . Joint efforts between government, academy, companies.
- .. Strong European and LATAM academia and PYMEs links
- ... Weather/climate observatories
- .... High technology laboratories (Water as a main topic)

## Organisational pathways

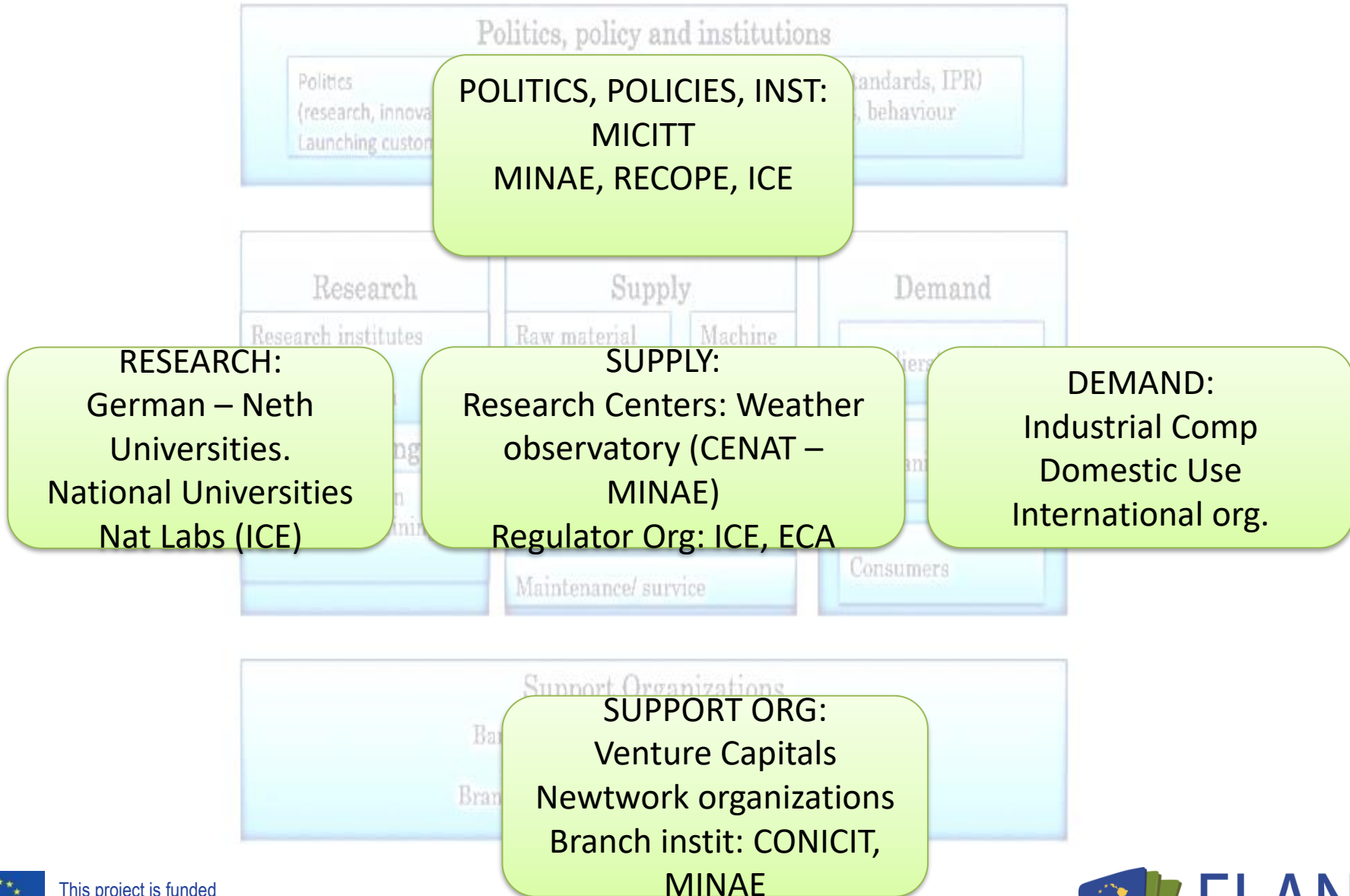
- . Government: MICITT, CONICIT, MINAE, ICE, RECOPE, others
- .. Academia: CeNAT, University labs, research centres.
- ... Private sector: Companies, Industrial Chamber, others



# Actor mapping



# Template: Actor mapping



# Template: Institutional drivers & barriers

Formal rules,  
policies,  
regulations

.National Health regulations

.. International regulations/ norms (ICE, ISO 17025:2005)

... New technology developments by ICE and RECOPE Labs

Informal  
rules,  
norms, habits,  
way of  
working

.Protocols

.. Quality Control Systems



# Template: Innovation functions

## Functions

Research & Development



Explain to what extent these activities are sufficiently developed within the TIS. Evaluate by giving a grade: 1-10.  
Name drivers and barriers underlying these activities.

	Drivers	Barriers
Academic research	<ul style="list-style-type: none"> <li>High level researchers</li> <li>.. Credibility</li> <li>... Assigned resources</li> </ul>	<ul style="list-style-type: none"> <li>.. High tech equipments</li> <li>.. Right infrastructure</li> <li>.. Financial resources</li> </ul>
Industry research	<ul style="list-style-type: none"> <li>.. I+D+i initiatives</li> <li>.. Needs identified</li> </ul>	<ul style="list-style-type: none"> <li>.. High tech equipments</li> <li>.. Right infrastructure</li> <li>.. Financial resources</li> </ul>
Facilities, equipment, infrastructure	<ul style="list-style-type: none"> <li>.. High tech equipments</li> <li>.. Right infrastructure</li> <li>.. Financial resources</li> </ul>	<ul style="list-style-type: none"> <li>.. High tech equipments</li> <li>.. Right infrastructure</li> <li>.. Financial resources</li> </ul>



# Template: Innovation functions

## Functions

Knowledge diffusion



Explain to what extent these activities are sufficiently developed within the TIS. Evaluate by giving a grade: 1-10.

Name drivers and barriers underlying these activities.

	Supporting	Hampering
R&D networks	<ul style="list-style-type: none"> <li>.. Networks</li> <li>.. Research Interconnections (HH.RR &amp; Equipments) through internet, GIANT, Internet 2.</li> </ul>	<ul style="list-style-type: none"> <li>.. Limited budget access for diffusion</li> <li>.. Networks stability.</li> </ul>
Cross-industry cooperation	<ul style="list-style-type: none"> <li>.. ICE, RECOPE</li> <li>.. Communication Media</li> </ul>	<ul style="list-style-type: none"> <li>.. Unclear understanding of real worldwide and national situation</li> <li>..</li> </ul>
Public-Private-Partnerships	<ul style="list-style-type: none"> <li>.. Private cogenerators</li> <li>.. CONICIT</li> </ul>	<ul style="list-style-type: none"> <li>.. Limited resources</li> <li>..</li> </ul>
International cooperation	<ul style="list-style-type: none"> <li>.. German – EARTH vinculation</li> <li>.. International vinculation</li> </ul>	<ul style="list-style-type: none"> <li>.. Worldwide economical crisis</li> <li>.. Narrow minded politics</li> </ul>



# Template: Innovation functions

## Functions

Entrepreneurial  
activities



Explain to what extent these activities are sufficiently developed within the TIS. Evaluate by giving a grade: 1-10.

Name drivers and barriers underlying these activities.

	Supporting	Hampering
Experiments, Demonstration	.. Effective initiatives developments by ICE and RECOPE	.. Internal regulations .. ..
New business, start-ups	.. Activity spaces .. New research initiatives ..New initiatives following	.. Low topics .. Low new initiatives development ... Poor venture capital access
User involvement	.. Regular ..	.. So much private generation regulations

# Template: Innovation functions

## Functions

Resource mobilisation



Explain to what extent these activities are sufficiently developed within the TIS. Evaluate by giving a grade: 1-10.

Name drivers and barriers underlying these activities.

	Supporting	Hampering
Non-financial resources	<ul style="list-style-type: none"> <li>.. Enough HH. RR.</li> <li>.. HH. RR. Recovering after PhD studies</li> </ul>	<ul style="list-style-type: none"> <li>.. Not enough funds to develop them</li> </ul>
Subsidies / Public funding	<ul style="list-style-type: none"> <li>.. CONICIT</li> <li>.. ICE</li> </ul>	<ul style="list-style-type: none"> <li>.. Unfriendly mechanisms for access</li> <li>..</li> </ul>
Investments / Private funding	<ul style="list-style-type: none"> <li>.. CARAO, ICARO</li> <li>..</li> </ul>	<ul style="list-style-type: none"> <li>.. Low financial institutions/organizat</li> <li>..</li> </ul>
Market creation incentives (e.g. fiscal regulation)	<ul style="list-style-type: none"> <li>.. For University researches</li> <li>.. For institutional organizations (RECOPE, ICE, MINAE)</li> </ul>	<ul style="list-style-type: none"> <li>.. Very limited</li> <li>..</li> </ul>



# Template: Innovation functions

## Functions

Guidance of the search, Political support / advocacy



Explain to what extent these activities are sufficiently developed within the TIS. Evaluate by giving a grade: 1-10.

Name drivers and barriers underlying these activities.

	Supporting	Hampering
Expectations / Public perception	<ul style="list-style-type: none"> <li>.. Credibility</li> <li>.. Clear image</li> <li>.. High expectations</li> </ul>	<ul style="list-style-type: none"> <li>.. Spectative of great success with low cost (almost free)</li> <li>..</li> <li>..</li> </ul>
Lobby / interest groups	<ul style="list-style-type: none"> <li>.. Beneficiary sectors interest</li> <li>.. Proposals availability</li> <li>.. Lobby Spaces (S.XXI)</li> </ul>	<ul style="list-style-type: none"> <li>.. Short time results spectatives</li> <li>..</li> <li>..</li> </ul>
Policy directives / incentives (e.g. policy targets)	<ul style="list-style-type: none"> <li>.. National Development and energetical Plan</li> <li>.. I+D+i Inform</li> </ul>	<ul style="list-style-type: none"> <li>.. Implementation time</li> <li>.. Politic interests</li> </ul>

# Template: SWOT analysis

## **S** TRENGTHS

- Strong academic knowledge.
- Human qualified resources
- High technology laboratories and research centers.
- High level equipments.
- Estrategia Siglo Xxi
- Public Universities
- Government Efforts
- ICE and RECOPE research development, support and vinculations with public universities



## **W** EAKNESSES

- Poor vinculation between PYMEs, government funds and high level laboratories
- Not so much clear picture about opportunities and national resources
- Poor private sector investment.
- Public oriented public sector investment.
- Too much strict regulations to private cooperation.



**TIS Internal factors**

## **O** PPORTUNITIES

- New developments at high technology levels.
- New markets opening
- Economic globalization
- TICs development
- Standarization/quality Systems



## **T** HREATS

- Protectionist policies
- Poor access to international vinculation funds
- Worldwide economical crisis
- Cultural differences not understood
- New low cost productive regions.
- Different regulation Systems at different regions/countries.
- Fair competition



**TIS External factors**

Positive contribution  
to innovation pathways

Negative contribution  
to innovation pathways



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