

MEGA*florestais*
Sweden 2018

*BALANCING
ENVIRONMENTAL,
ECONOMIC, AND SOCIAL
GOALS IN THE
BIOECONOMY*

ROLES OF AND
INTERACTIONS BETWEEN
GOVERNMENT AND LOCAL
COMMUNITIES

JUAN MANUEL TORRES-ROJO
(CIDE)

BIO-BASED ECONOMY

Sustainability

Innovation

Marketing

Cultural factors
(Change of tastes
and preferences)

substitution
of fossil
inputs for
bio-based
inputs

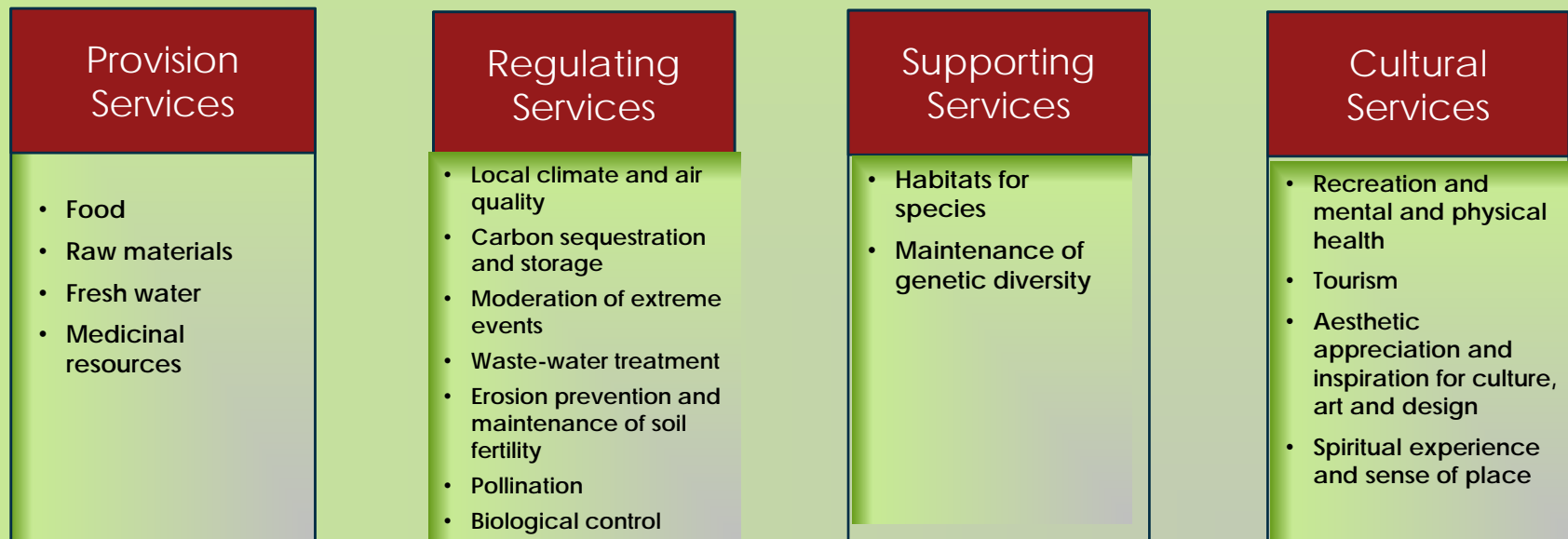
optimize the
value and
contribution
of ecosystem
services to
the economy

WOOD-
BASED
BIO-
ECONO
MY

ECOSYSTEM
SERVICES
-BASED
BIO-
ECONOMY



ECOSYSTEM SERVICES



FOREST BIOECONOMY is a smart way optimize the value and contribution of ecosystem services to the economy

BIOECONOMY TRANSITION

Extensive
Limited
Non sustainable



Intensive
Diversified
Sustainable

Bioeconomy transition should guarantee improvements in social, economic and environment conditions for both present and future generations

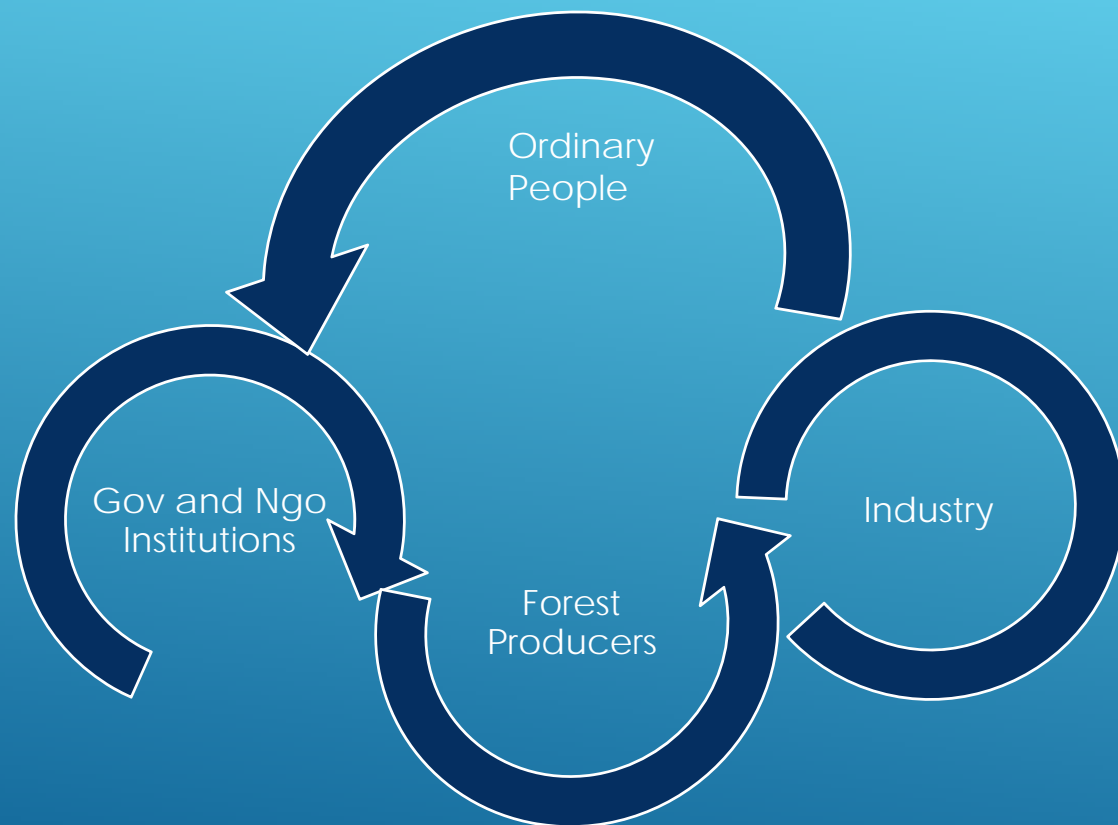
FOREST BIOECONOMY DEVELOPMENT PATHWAYS

- i. **Leveraging biodiversity resources.** This covers all scenarios where the distinctive feature is valorization (domestication, transformation, links to markets, etc.) of biodiversity (discovery of functional traits related to specific sectors and uses, development of new products through innovative transformation, development of markets for local products, etc.);
- ii. **Eco-intensification in agroforestry and mixed systems.** Practices aimed at improving environmental performance of agricultural and stock breeding activities without sacrificing current levels of production/productivity and conserving the environment;
- iii. **Biotechnology applications** (products, tools, and processes). These include bioprospection, industrial tissue culture, marker assisted selection in crop and animal breeding, genetically modified plants and seeds, molecular diagnosis, improving animal reproduction through molecular techniques, modified enzymes, microorganisms and yeasts, etc. This carries over to the management of natural resources, food, fibers and chemical industries, as well as to the supply of energy. iv)

FOREST BIOECONOMY DEVELOPMENT PATHWAYS

- iv. **Ecosystem services.** They include the processes through which the environment produces the resources used by humans, such as air, water, food, and materials. Due to the special nature of the relationship between natural resources and social and economic activities under a Bioeconomy approach, an ecosystems perspective is a crucial component of any sustainable bioeconomic strategy;
- v. **Material efficiency, biorefinery, and bioproducts.** This refers to the bioenergy sector and the processes focusing on the substitution of fossil fuels for industrial consumption. For instance, ethanol, biodiesel, biogas plants and bioelectricity, as well as the different activities associated to green chemistry.
- vi. **Value chain efficiency/circular economy.** This includes activities that (i) reduce post-harvest losses at any level they may occur and (ii) aim at the development of the links to markets needed for innovative bio-based products.

BIOECONOMY TRANSITION ACTORS



BIOECONOMY

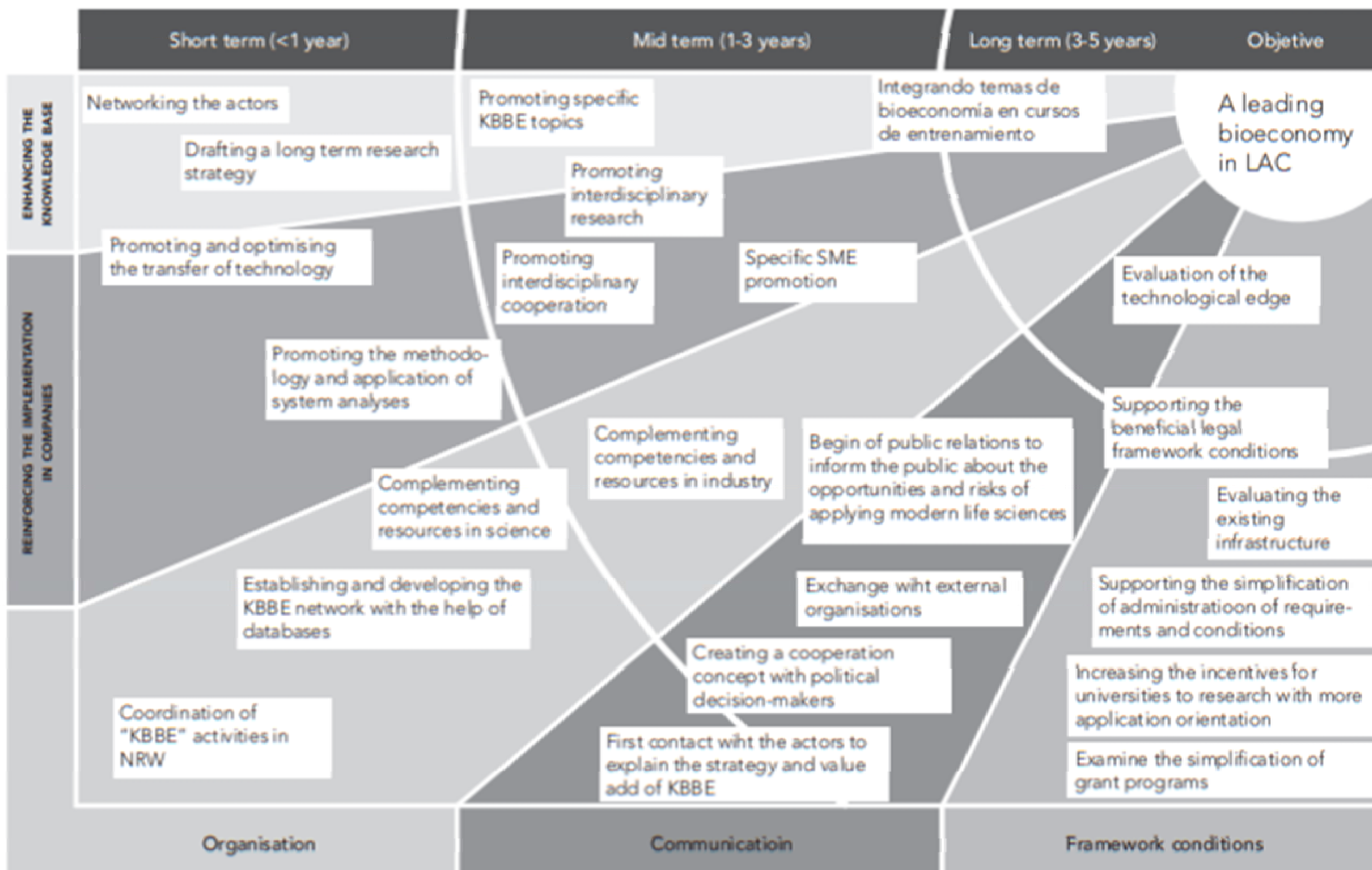


FOREST BIOECONOMIC STRATEGY



FOREST BIOECONOMIC STRATEGY

Figure 2. Schematic example of action plan for bioeconomy development in LAC



Source: MINCYT – CEO, 2013

SOME EXAMPLES: FOSTERING INNOVATION

bioeconomy is a smart way of living without using up the earth's finite resources



2018 Winners

New resin extraction technology (MEX)
Monitoring forest fires through drones (CHL)
Organic production of seedlings (PER)



SOME EXAMPLES: SCALING UP NEW IDEAS

INNOVACION: Reforestamos
México



Marketing
Clients formation
Financing with low interest rates
Infraestructure
Development of the industrial system
Social and human capacity building
Additional capacities
Organization for production
Social capital building (trust, governance structures)

SOME EXAMPLES: MARKET FORMATION

Proyecto Biocomercio Andino



The "Biocomercio Andino" project

•Strategic Objective

Contribute to the conservation and sustainable use of biodiversity in the Andin región through the use of opportunities in bio-market products and services produced in marginal and local communities

General Objective:

Strengthen the bio-commerce at local, regional and national level as a strategy for sustainable use and conservation of biodiversity.

COMPONENTES PIR / CONVENIO CAF-GEF



SOME EXAMPLES: INTERACTION WITH AGRICULTURE

Territorios Productivos Sostenibles
(Sustainable Productive Territories)



SOME EXAMPLES: INTERACTION WITH AGRICULTURE

Territorios Productivos Sostenibles (Sustainable Productive Territories)

Increasing the area under sustainable landscape production (agriculture, livestock production and forestry)

Reducing the pressure on productive landscapes to maintain ecosystems integrity and to ensure the wellbeing of inhabitants.



Improving the land management model at regional level to optimize productivity, conserve biodiversity and cultural values, and improving resilience to climate change.



BASIC COMPONENTS OF THE TPS

Sistemas productivos sostenibles y biodiversidad



Caficultura sostenible



Cacaocultura sostenible



Apicultura sostenible



Ganadería silvopastoril



Silvicultura



Uso de fauna silvestre

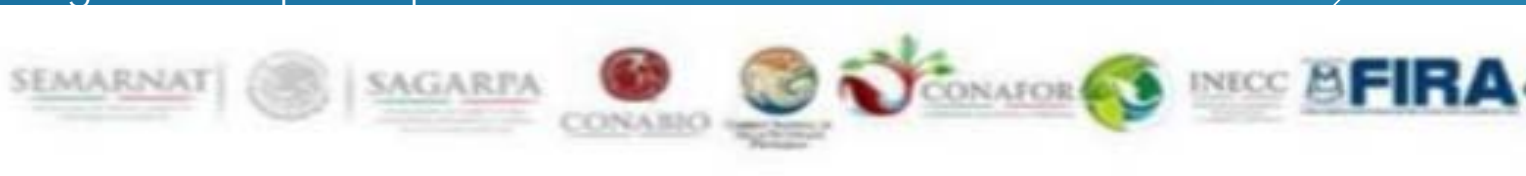


Ecoturismo

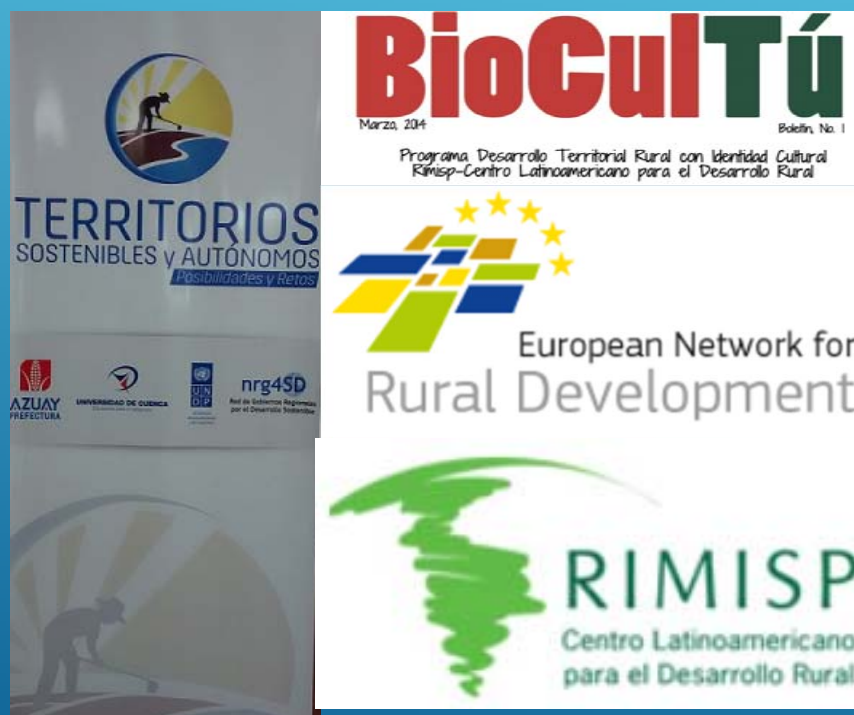
Building capacities



Alignment of public policies



SOME EXAMPLES: INTERACTION WITH AGRICULTURA + REDD+



CONCLUSIONS

1. A broader bioeconomy includes ecosystem services and biodiversity
2. The transition to bioeconomy should guarantee improvements in social, economic and environment conditions for both present and future generations
3. Successful operational transitions provide opportunities at the local level and involve government at different levels, industry, NGO's and ordinary people.
4. The pathway to a forest bioeconomy might include not only new developments but also a wide variety of goods and services already available.
5. Relatively little is known about changes in firm-level competitiveness caused by the shifting dynamics of the competitive situation in the forest sector toward the bioeconomy. However, the development of key (anchorage) products and services at local or regional level seems to provide greater gains for people and environment.

THANK YOU

The image features a blue gradient background. In the bottom right corner, there are several thin, white, parallel diagonal lines that create a sense of motion or a modern design element.