Latin America Region

REGENERATIVE RANCHING & AGRICULTURE (R2A)

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Regenerative Ranching & Agriculture (R2A)

THE CURRENT SITUATION

Source: John Fullerton, “Regenerative Capitalism: How Universal Principles and Patterns Will Shape Our New Economy”. Capital Institute, April 2015

- 70% Of habitat conversion in Latin America comes from the ag sector (3 times global rate!)
- 50% Of agricultural lands in Latin America have some level of degradation
- 1/3 Of global GEI emissions come from ag sector (including land conversion, where LAR is a major contributor)

LESS
Energy/Materials Required

MORE
Energy/Materials Required

CONVENTIONAL
DEGENERATING
Extractivistic Design
Reductionist Thinking

GREEN

SUSTAINABLE

RESTORATIVE

REGENERATIVE

Systems Approach
Natural Climate Solutions
REGENERATING

FAR FROM NATURE

CLOSE TO NATURE

Long term resilience and socio-economic development

CO₂ capture and sequestration
Double organic content in soil in agroecological vs. conventional production

Stability and resilience in ag productivity

HAS STRATEGY

70%
50%
1/3
HAS IN OPERATION

2018-2020
Put implementation plans into action in 3-4 landscapes in Argentina, Brazil and Colombia

REFINING & BUILDING

2020-2022
Establish 3 additional action landscapes with metrics and implementation plans

2023-2027
Implement in 6-8 landscapes directly and 4 through partners

SCALING STRATEGY

Measure performance of implementation and initial impact

Achieve region-wide changes in ag norms, environmental laws, and market value

R2A 5-YEAR IMPACT GOALS
Across 7 action landscapes*

5 million hectares of degraded soils restored for productivity on crop and livestock lands (2027 target: 9.6 million ha)

0.55 Gt CO2e captured below and above ground on agricultural or pasture land under HAS management practices (10 year target 1.1 GT CO2e)

Model and pilot farms demonstrate increased productivity [and profitability] of agriculture and ranching systems under HAS management practices

2.1 million ha of habitat land under improved management**

Increase biodiversity in productive systems and reduce habitat loss

Reduce water depletion and sediment and nutrient loading in priority basins

45% of target goal currently achieved.
SCALING ADOPTION
Across Action Landscapes

To achieve system impact in the long term, TNC will:

• Focus on nucleus points of the action landscapes to pilot R2A interventions
• Implement, evaluate and build visibility for successful interventions with partners
• Across R2A multi-stakeholder platforms, replicate and scale up successful R2A projects throughout and across action landscapes.
• By 2027, R2A adoption will spread to at least 10 action landscapes to contribute towards regional agricultural sector transformation.

CORE AREA TO ACTION LANDSCAPES WITHIN BU

CORE ACTION LANDSCAPE. IMMEDIATE IMPLEMENTATION

CURRENT ACTION LANDSCAPES
Progress on Action Landscape: Colombia Large-Scale Impact

**SUSTAINABLE RANCHING**

**WHERE DO WE WORK?**

**REGIONS**
- Valle del Río Cesar
- Cesar y La Guajira
- Boyacá y Santander
- Bajo Magdalena
- Atlántico y Bolivar
- Ecorregión Cafetera
- Caldas, Quindío, Risarada, Tolima y Valle
- Piedmonte Orinocense Meta

**DEPARTMENTS**
- 5
- 12
- 87

**MUNICIPALITIES**

**PROGRESS**

- **4,100 FARMERS PARTICIPATING**
- **26,730 HA** Implemented with silvopastoral system
- **80,107 HA** Of sustainable production
- **17,455 HA** Of conserved forests
- **840,122 MT** Of CO₂e in reduction of greenhouse effect gases

**R2A SYSTEMS APPROACH**
**INTENSIVE SILVOPASTORAL SYSTEMS**
This combines the cultivation in pastures, high-density forage shrubs, fruit trees and carbon storage in wood. Additionally, there are paddock rotations and a permanent water supply.

<table>
<thead>
<tr>
<th>Animal capacity (HA)</th>
<th>Annual milk productivity per ha in a conventional system</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2 Cattle</td>
<td>690 LITERS</td>
</tr>
<tr>
<td>3 Cattle</td>
<td>887 LITERS</td>
</tr>
<tr>
<td>690 LITERS of MILK</td>
<td>10.175 KILOS</td>
</tr>
<tr>
<td>3,6 Cattle</td>
<td>11.306 LITERS of MILK</td>
</tr>
<tr>
<td>10.175 KILOS</td>
<td></td>
</tr>
<tr>
<td>1.7 Cattle</td>
<td>974 LITERS of MILK</td>
</tr>
<tr>
<td>3,6 Cattle</td>
<td>2.849 LITERS of MILK</td>
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<tr>
<td>2.849 LITERS of MILK</td>
<td></td>
</tr>
<tr>
<td>15.638 KILOS</td>
<td></td>
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</tbody>
</table>

**LIVING FENCES**
Planted trees and shrubs of different species in high density replace wooden or cement poles and wires. They serve as fodder and also as ecological corridors enabling wildlife passage.

<table>
<thead>
<tr>
<th>Animal capacity (HA)</th>
<th>Annual milk productivity per ha in a system with living fences</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 Cattle</td>
<td>953 LITERS of MILK</td>
</tr>
<tr>
<td>3,6 Cattle</td>
<td>1.627 LITERS of MILK</td>
</tr>
<tr>
<td>1,627 LITERS of MILK</td>
<td>15.715 KILOS</td>
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</tbody>
</table>

**DISPERSED TREES**
Trees scattered in paddocks generate environmental and productive benefits such as shade, nitrogen fixation, wood, food and fruits. It is recommended to have 35 trees minimum per hectare.

- 2.2 Cattle
- 3,6 Cattle
- 1.7 Cattle

**PROGRESS ON ACTION LANDSCAPE: COLOMBIA Northern Andes and Orinoquía**
At-scale impact

**Silvopastoral systems** implemented in more diverse landscapes with natural habitat conserved in paddocks, living fences, shaded areas, natural sources of water isolated from livestock.

**Living Fences**
Planted trees and shrubs of different species in high density replace wooden or cement poles and wires. They serve as fodder and also as ecological corridors enabling wildlife passage.

**Intensive Silvopastoral Systems**
This combines the cultivation in pastures, high-density forage shrubs, fruit trees and carbon storage in wood. Additionally, there are paddock rotations and a permanent water supply.

**Regenerative Ranching & Agriculture (R2A)**
**PROTOTYPES**

- **CONVENTIONAL**
  - Use grass-based systems and extensive models with little diversity.
  - In some areas associated with natural habitat transformation due to logging, burning, water use and soil degradation. Overgrazing is common.

- **REGENERATIVE**
  - Silvopastoral systems included in more diverse landscapes with natural habitat conserved in paddocks, living fences, shaded areas, natural sources of water isolated from livestock.
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SUGAR CANE PRODUCTION

Valle de Cauca, Colombia

207,083 ha of area harvested for the cultivation of sugarcane in the geographical valley of the Cauca River

95% receive supplementary irrigation

CONVENTIONAL SYSTEM

Weed removals
Use of heavy machinery and agrochemicals

Crop Burning

Application of Chemical Fertilizer

Application of Pesticides

Green Sugar Cane Harvest

SUSTAINABLE SYSTEM

Weed removal
Manual removal and sheep grazing

Natural maturation of sugarcane

Application of organic fertilizer

Carbon - Sugar Cane

INTEGRATION
Regenerative agriculture and water funds

Scientific - Technical sector

Agribusiness sector

Investment in Water Funds

Carbon Bonds

IMPROVE soil conditions

Increased water retention, Carbon capture

KEY RESULTS

Consumption of 1,235m³/ha less water

1.9% more organic soil matter

Water savings of + 255 M m³/year equivalent to 2X the annual consumption of Cali, Colombia (2.5 million people)

BENEFITS

No-contamination of surface and underground watersources from agrochemicals

Increased organic matter, which improves fertility and soil moisture retention

Fewer CO₂ Emissions Generated

CO₂

Improves crop productivity and promotes carbon storage

Provides food and habitat for wildlife, which benefits biological pest control

Better production performance on a scale per ha, in relation to direct non-renewable energy consumption
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R2A IN THE FIELD

BRAZIL

PRINCIPLES
- Resilience
- Synergies
- Efficiency

INTEBVENTIONS
- Implementation of sustainable practices
- Agreements between farmers and banks
- Farms and banks should comply with the agreements established

PARTNERS
- AGRICULTURAL SECTOR
- Enterprises
- Government entities
- Associated producers

PRACTICES ON FIELD
- Reforestation
- Efficient water usage
- Sustainable management of soil
- Crop rotation
- Silvopastoral systems
- Holistically managed grazing
- Restoration

OUTCOMES
- OBJECTIVE: Achieve all HAS outcomes
- LEVEL OF IMPLEMENTATION: 100,000 ha
- IMPLEMENTATION PLAN: 3 years

COLOMBIA

PRINCIPLES
- Nature based solutions

INTEBVENTIONS
- Sustainable livestock standards or criteria to work with the private sector
- Contributions from the legislation of payments for environmental services and work with ministries
- Successful case of silvopastoral system

PARTNERS
- Fedegan, Fondo Acción, CIPAV, TNC, Fondo GEF, British Government & World Bank
- COMMITTEES WORKSHOPS/ TRAININGS

PRACTICES ON FIELD
- Restoration
- Sustainable management of soil
- Silvopastoral systems
- Sustainable practices for the high tropics, implementing in colder areas

OUTCOMES
- LEVEL OF IMPLEMENTATION: 30,000 ha
- Silvopastoral systems
- IMPLEMENTATION PLAN: 3 years
- Properties under property planning

- Habitat conversion
- CO2 capture and sequestration
- Efficient water usage
- Sediment and nutrient loading
- Climate resilience
- Agricultural profitability
SOY PRODUCTIVE SYSTEM
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WHERE WE WORK
1. Anta, Salta
2. Copo y Pellegrini, Santiago del Estero
3. Almirante Brown, Chaco

PRACTICES
- No-till
- Precision agriculture to apply agrochemicals
- Integrated pest management
- Cover crops in non-planting times

RESULTS
- Improved soil organic matter
- Higher CO$_2$ capture
- Connectivity of native ecosystems
- Fossil fuel consumption
- Carbon footprint and habitat conversion

ACHIEVEMENTS
- Crop selection based on regional conditions
- Plant cultivation with higher carbon-nitrogen levels
- 10% increase in soil organic matter from 2000 to 2019

PARTNERS
- Agribusiness
- TNC
- Syngenta
- Institutions (INTA, Ministeries, Universities, NGOs)
- Associations (AACREA)

TOOLS
- Workshops with producers and agribusiness
- Best practices manual and a tool box adopted to agroecological conditions, environmental and social factors in the region.

PRODUCTIVE SYSTEMS IN ARGENTINA

- Summer crops (soy, corn, beans, sorghum, sunflower)
- Extensive
- Dry (without irrigation)

SOY is Argentina’s Largest producing crop

- 17.3 M hectares
- 37.8 M tons
- 4.8% Santiago Estero
- 17.5% Santa Fe
- 29.2% Córdoba
- 32.9% Buenos Aires

Production 2017-2018
Latin America Region

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Thank You!