MINISTERIO DE GANADERÍA
AGRICULTURA Y PESCA

Project

Building resilience to climate change and variability in vulnerable smallholders

("Family cattle farmers and climate change")

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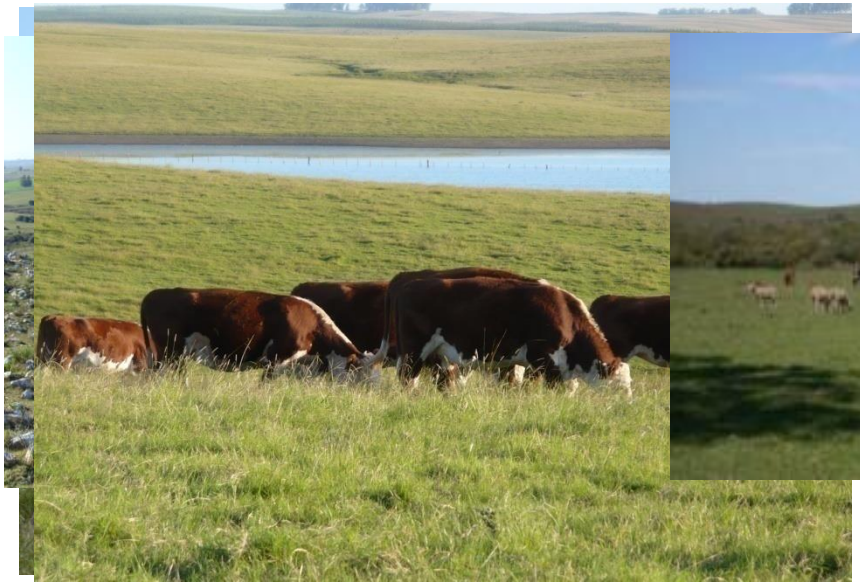
Minister of Livestock, Agriculture and Fishery
URUGUAY

- Uruguay is a livestock and cropland country with an economy strongly based on the agricultural sector (78% of all goods exports).

Uruguay rangelands belong to biomes “Campos & Pampa”



- 500,000 km^2
- 65 million beef heads
- 800 species of grasses and 200 legumes
- 430,000 livestock farmers
- Diversity of landscapes:

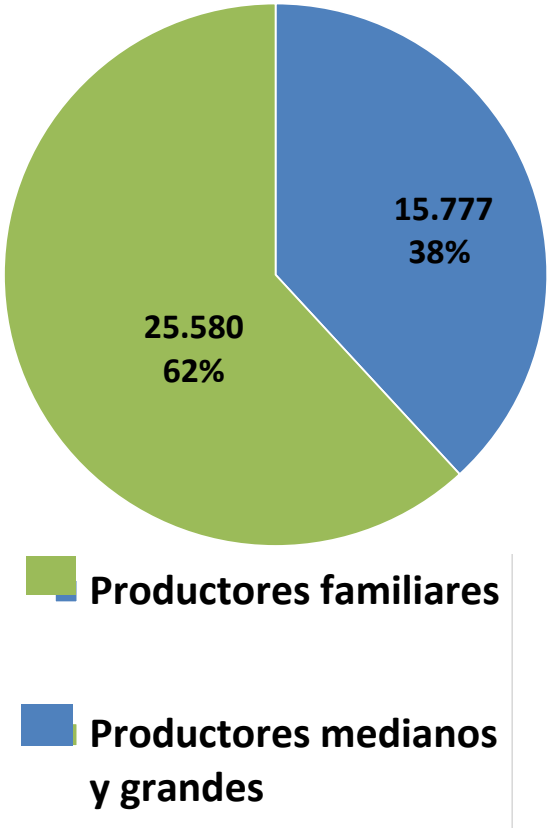
  Pajonales, Short grass, Flechillares (Arg); *Basalto, Sierras del este* and *Areniscas del noreste (Uy); Central Brazil* and *Uruguayan–southern Brazil* (Br)

Rural farmers in Uruguay (2011):

62% smallholders

Cattle and sheep farmers: 63% of all smallholders

Commercial farms (*)



Actividad principal	Cantidad de productores familiares	%
Ganadería de carne	13.943	55%
Ganadería de leche	3.010	12%
Horticultura	2.409	9%
Ovinos	1.956	8%
Cereales y Oleaginosos	891	3%
Viticultura	558	2%
Cerdos	536	2%
Otros frutales	524	2%
Avicultura	451	2%
Otras actividades (*)	1.288	5%
Total	**25.566**	**100%**

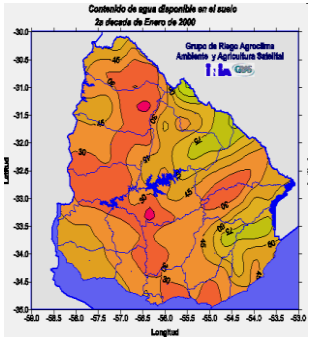
Fuente: En base a Censo General Agropecuario 2011

(*) En base a definición de productor familiar de MGAP (Resolución Ministerial 387/2014) y datos del Censo General Agropecuario 2011. Cabe aclarar que la información del Censo no permite analizar ingresos obtenidos por el productor (que es una de las dimensiones que se contempla en la definición).

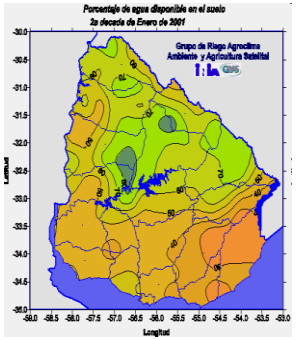
- Climate change (CC) is increasing the **variability** of climate and may increase frequency of **extreme events so our systems need to build resilience**.

Intensity and frequency of dry summers

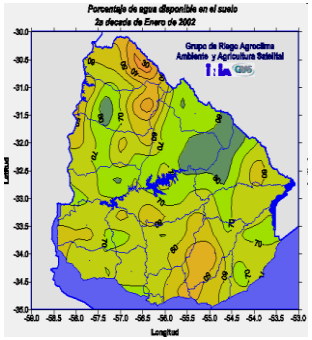
2000



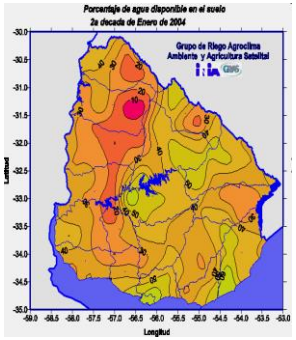
2001



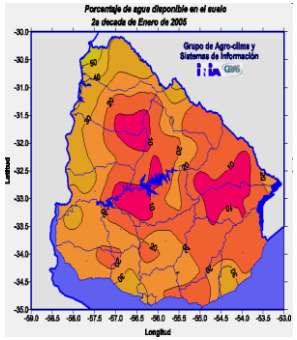
2002



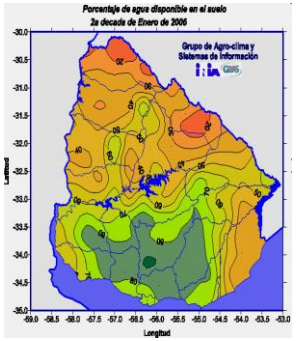
2004



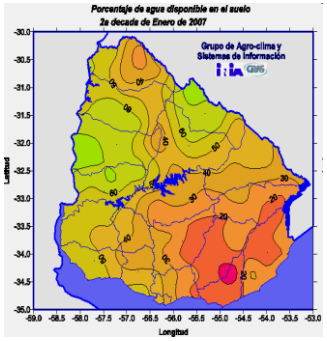
2005



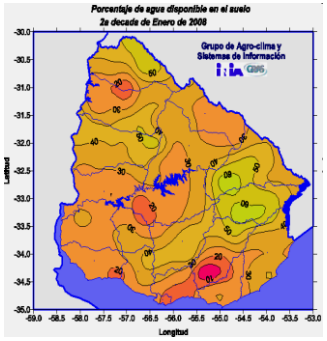
2006



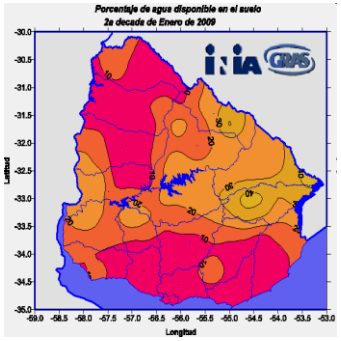
2007



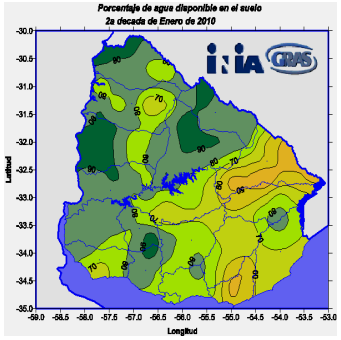
2008



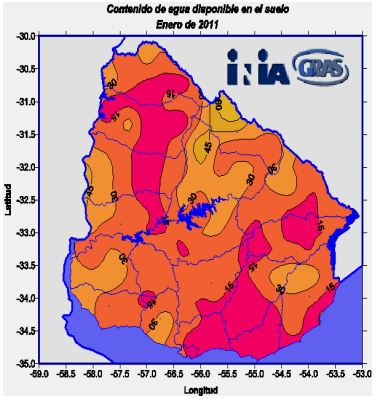
2009



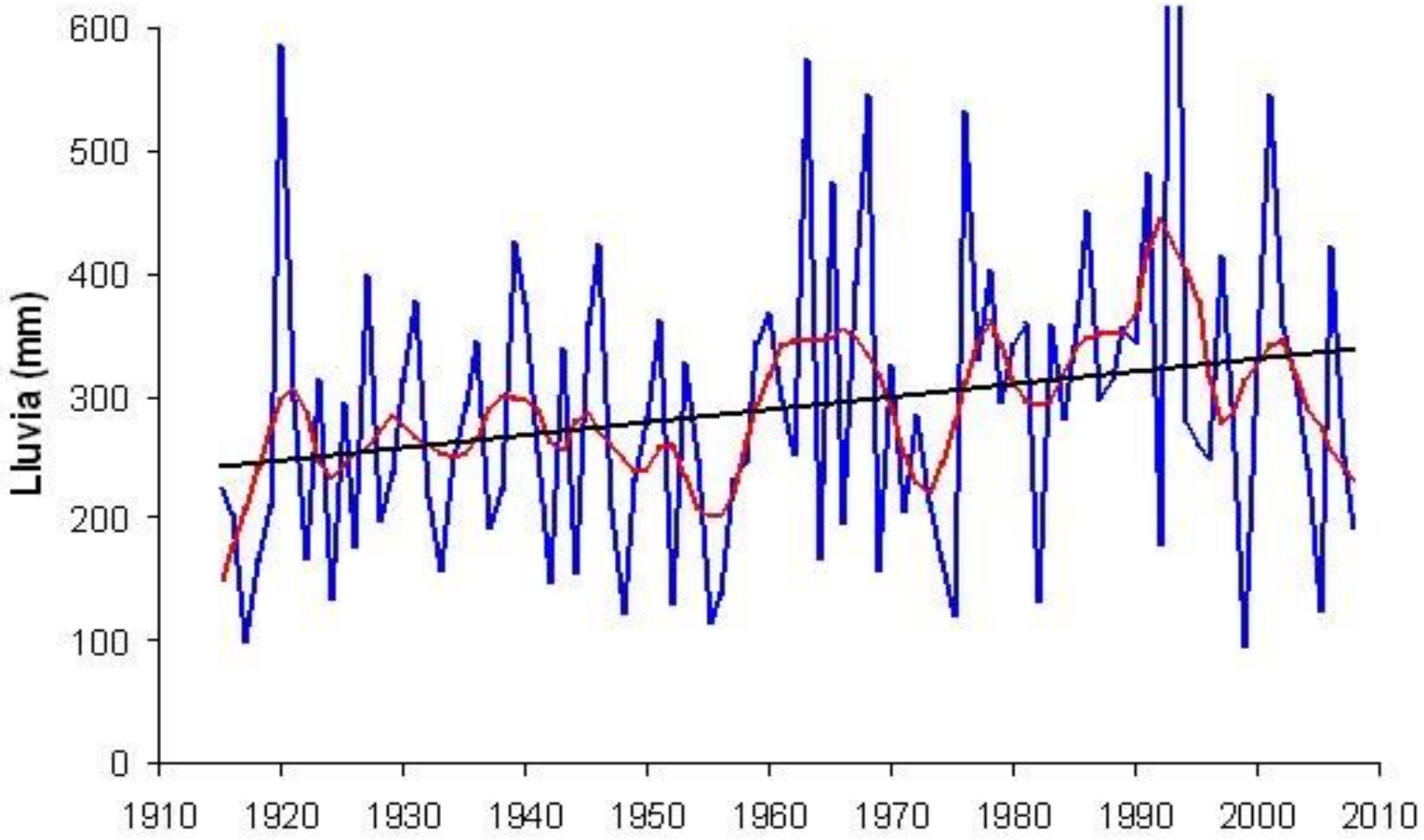
2010



2011

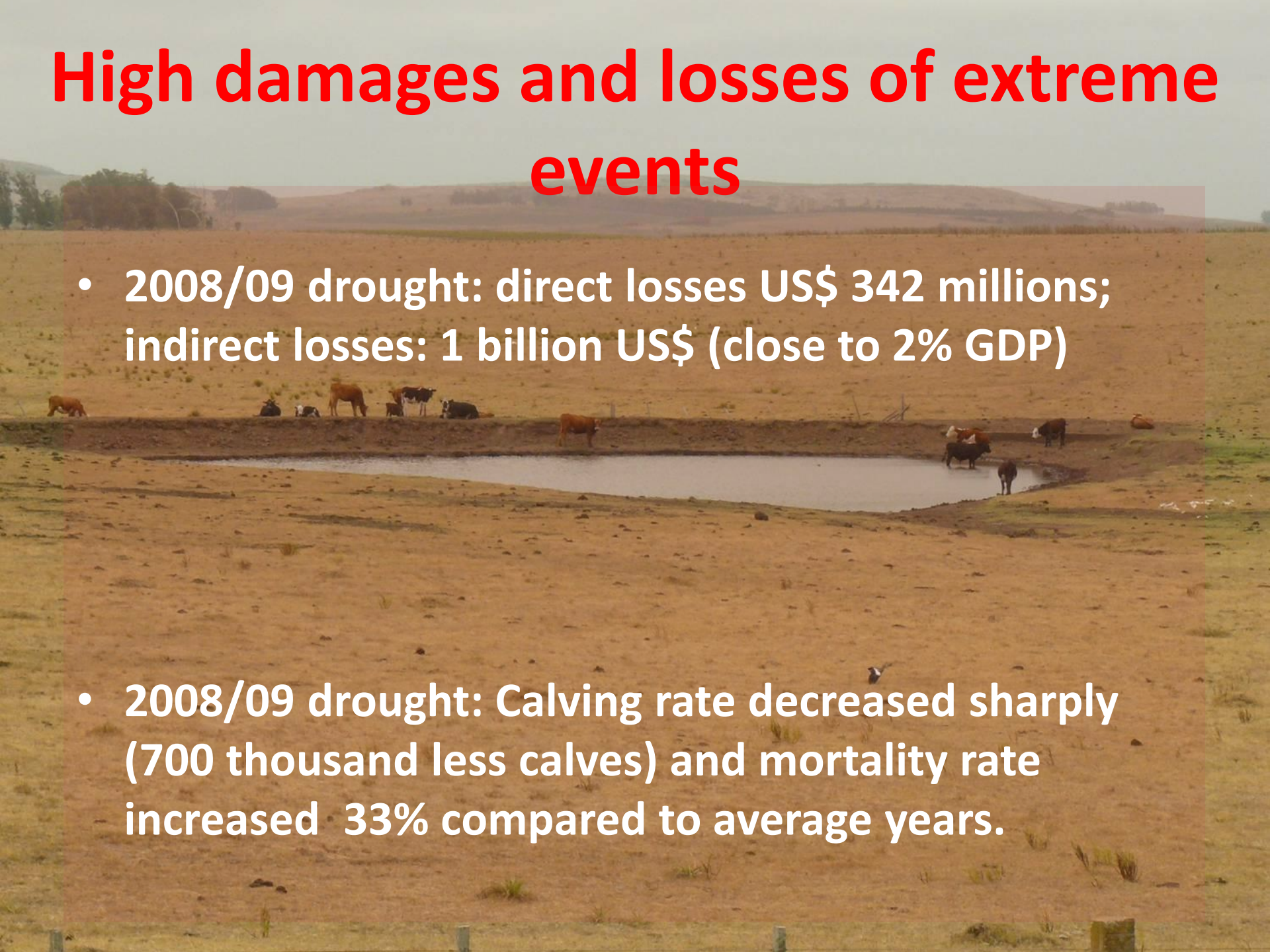


Precipitation is almost never close to the long term average (La Estanzuela, Octuber + Noviember + Dicember, 1915 - 2008.



Source: INIA

High damages and losses of extreme events



- 2008/09 drought: direct losses US$ 342 millions; indirect losses: 1 billion US$ (close to 2% GDP)

- 2008/09 drought: Calving rate decreased sharply (700 thousand less calves) and mortality rate increased 33% compared to average years.

Our bet in livestock is ...

Ecological Intensification in Campos

- More resilience
- More productivity
- Maintaining biodiversity
- Less emissions intensity
- Sustainable development

Policy priorities

A. Enhance international **competitivity**

B. **Sustainable intensification**

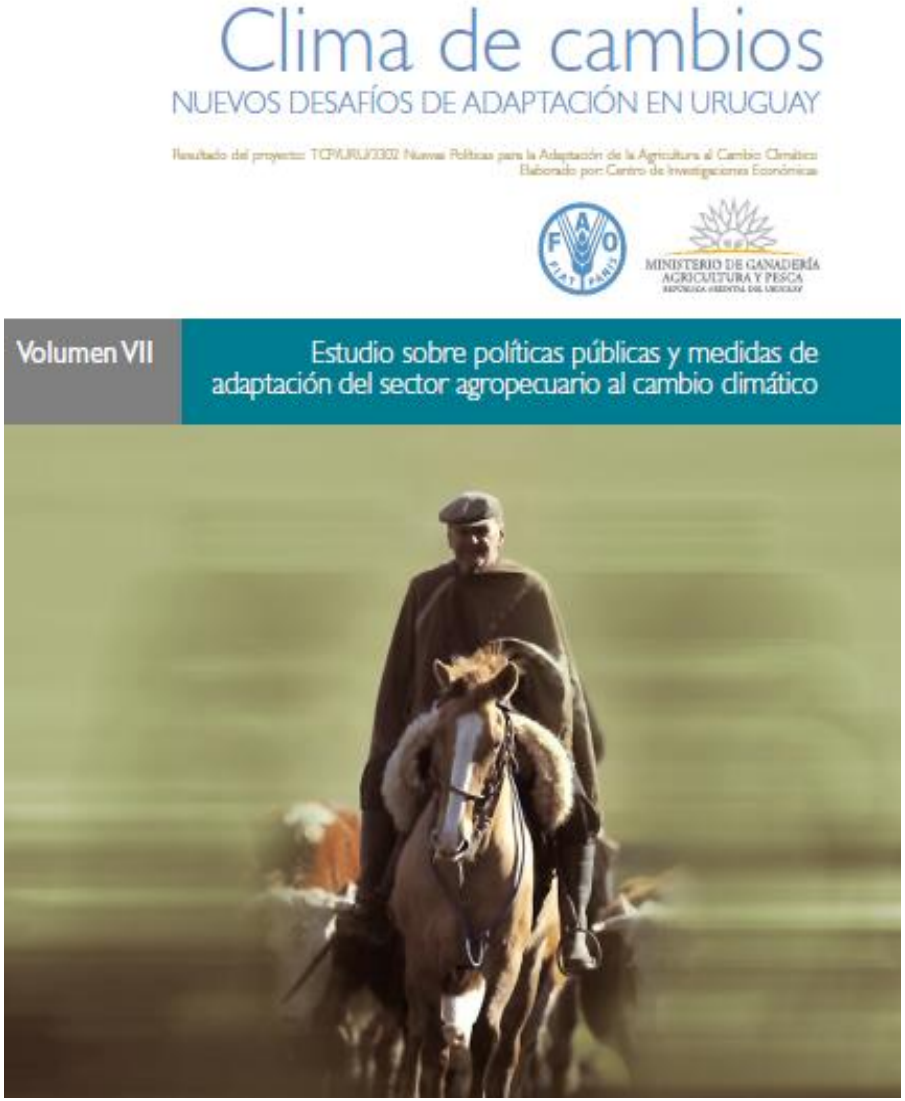
C. **Adaptation to climate change**

D. **Socially inclusive** rural development

E. **Institutional articulation**

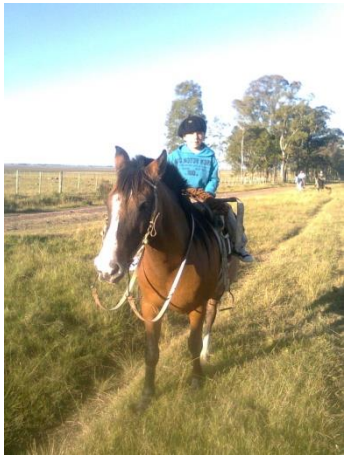
General introduction

- **We were looking for a project mainstreaming adaptation into rural development in Uruguay**





General description of the Adaptation Fund project in Uruguay



Family cattle farmers and climate change

- Grant of US$ 9,662,967
- Timeframe: 5 years.
- Starting date: October 2012.
- National Implementation Agency: **ANII**
- Execution Agency: **MGAP**

Family cattle farmers and climate change

- **Specific objectives**:

a) Reducing vulnerability and **building resilience** to CC and variability in small farms engaged in livestock production located in extremely drought-sensitive **Landscape Units** of the Basaltic Cuesta and Eastern Hills eco-regions.

b) Strengthening local institutional **networks** at the selected LU targeting climate change adaptation (prevention) and response to extreme events.

Family cattle farmers and climate change

- **Specific objectives**:

c) Developing mechanisms for a better understanding and **monitoring** of the impacts and variability of CC, anticipating and assessing negative events and eliciting **lessons learned** and identifying and validating **best practices and toolkits** for adapting to increasing variability of CC.

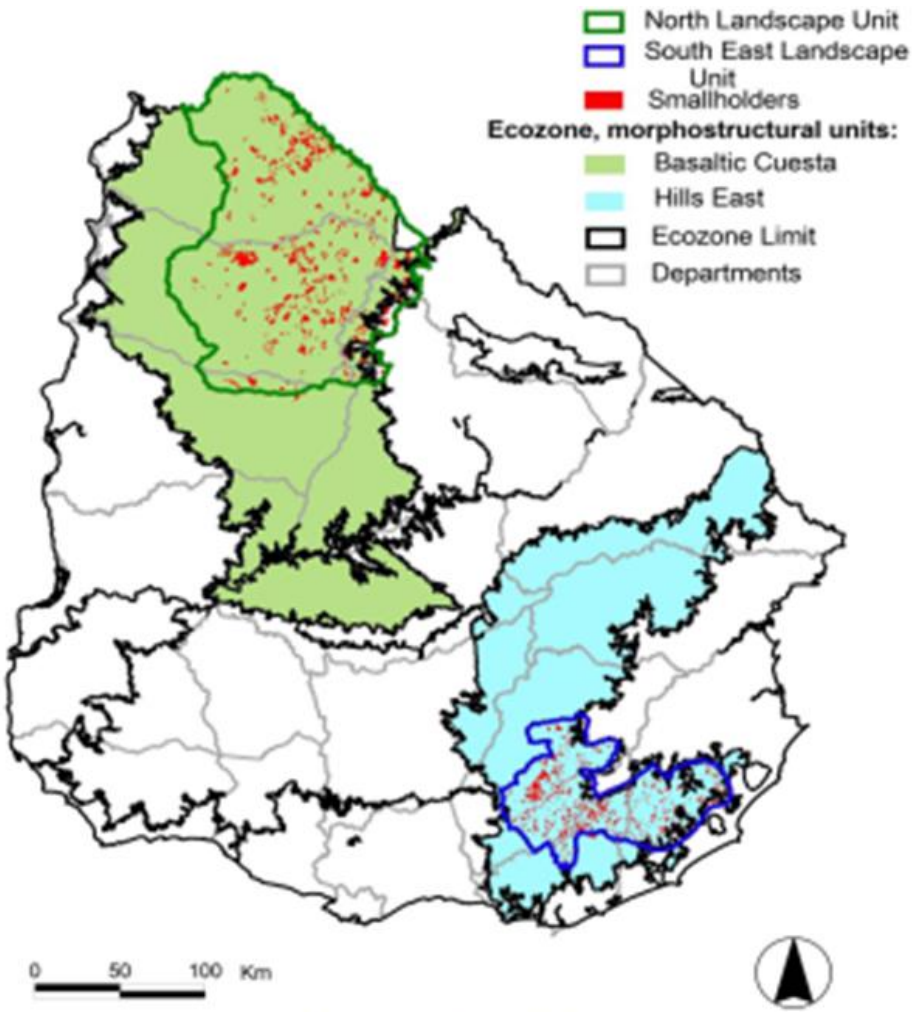
Distinctive characteristics

- **Target public:** Vulnerable small familiy cattle farmers.
- **Territorial approach:** Activities focalized on **Landscape Units (LU).**
- **Methodology:** Participatory diagnosis and strategic planning elaborated with the beneficiaries in the LU.

Strategy

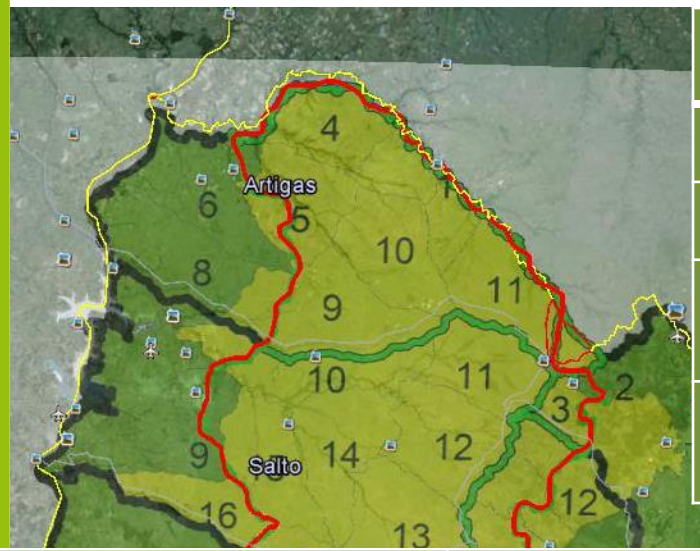
- **Build capacities at farm level** in terms of infrastructure (e.g. to harvest water and use it efficiently) and develop human capacities to maximise rangeland productivity.
- Strenghten formal and informal **local networks and associativism** in the Landscape Units to circulate risk management information (e.g. climate forecasts, early warning) and develop innovative local services as forage banks.
- **Improve undertanding** of climate variability and ways to reduce vulnerability, increase resilience and build adaptive capacities.
- **Identify, validate and deploy good practices** and lessons learned on adaptation to current variability and climate change.

Territorial setting



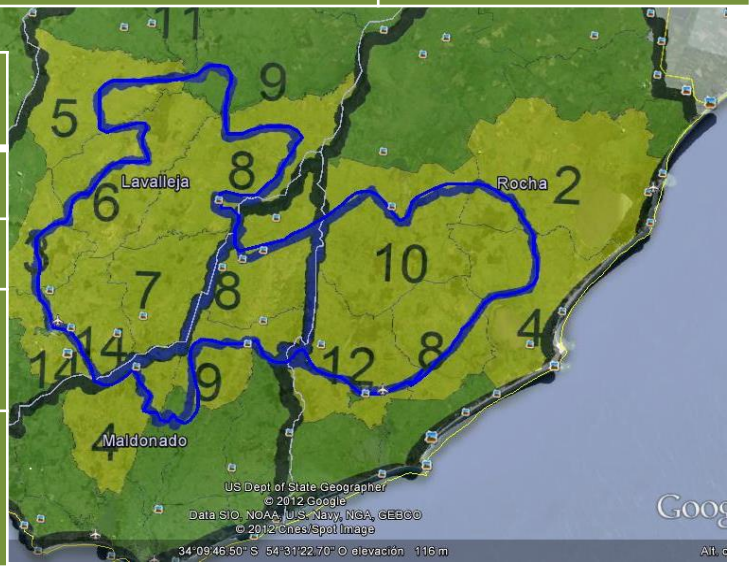
- Cuesta basáltica
- Sierras del Este

Territorial setting

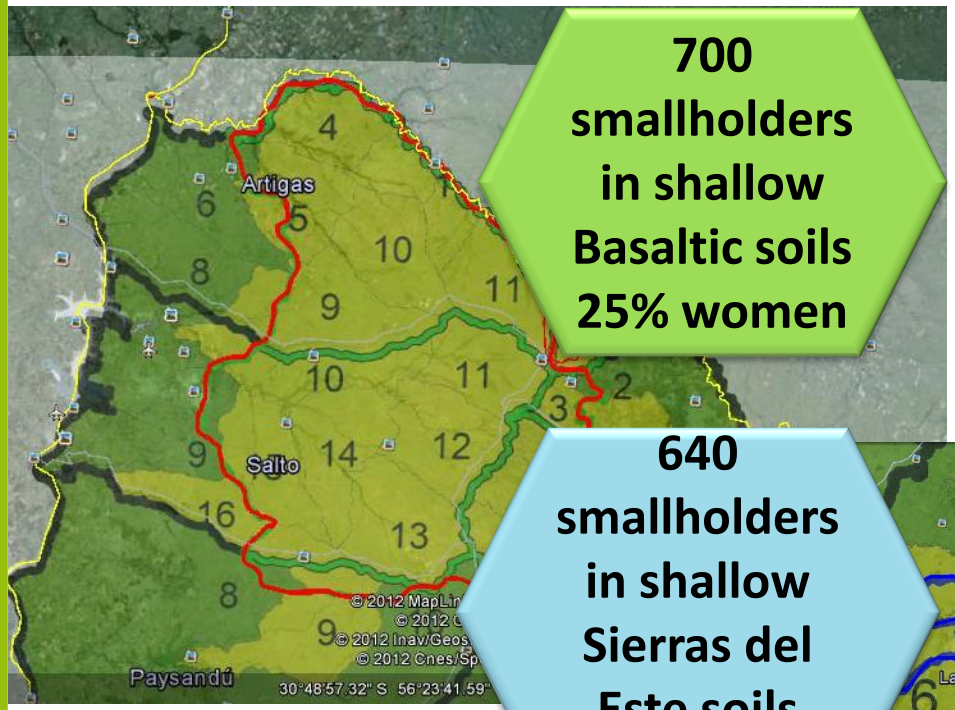


Cuesta Basáltica	
Área de la UP	1.900.000 ha
Área en predios familiares	500.000 ha
Productores ganaderos totales	3.507
Productores familiares ganaderos	1.737

Sierras del Este	
Área de la UP	660.000 ha
Área en predios familiares	350.000 ha
Productores ganaderos totales	2.530
Productores familiares ganaderos	1.558



COMPONENT 1: Farm activities



700 smallholders in shallow Basaltic soils 25% women

Increase in productivity and decrease of its variability due to CC

640 smallholders in shallow Sierras del Este soils 25% women

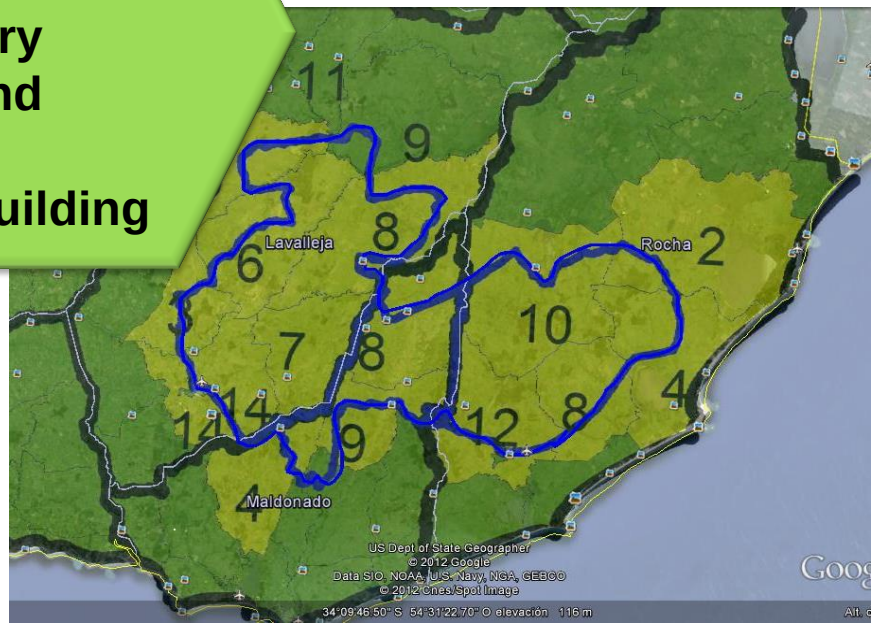
Focus on:

- Investment in water, forrage and shadow solutions, including forrage banks. Revolving funds.
- Associative projects.
- Technical assistance.

COMPONENT 2: Local networks

- Integration of farmers organizations.
- Participatory diagnosis and planning.
- Capacity building

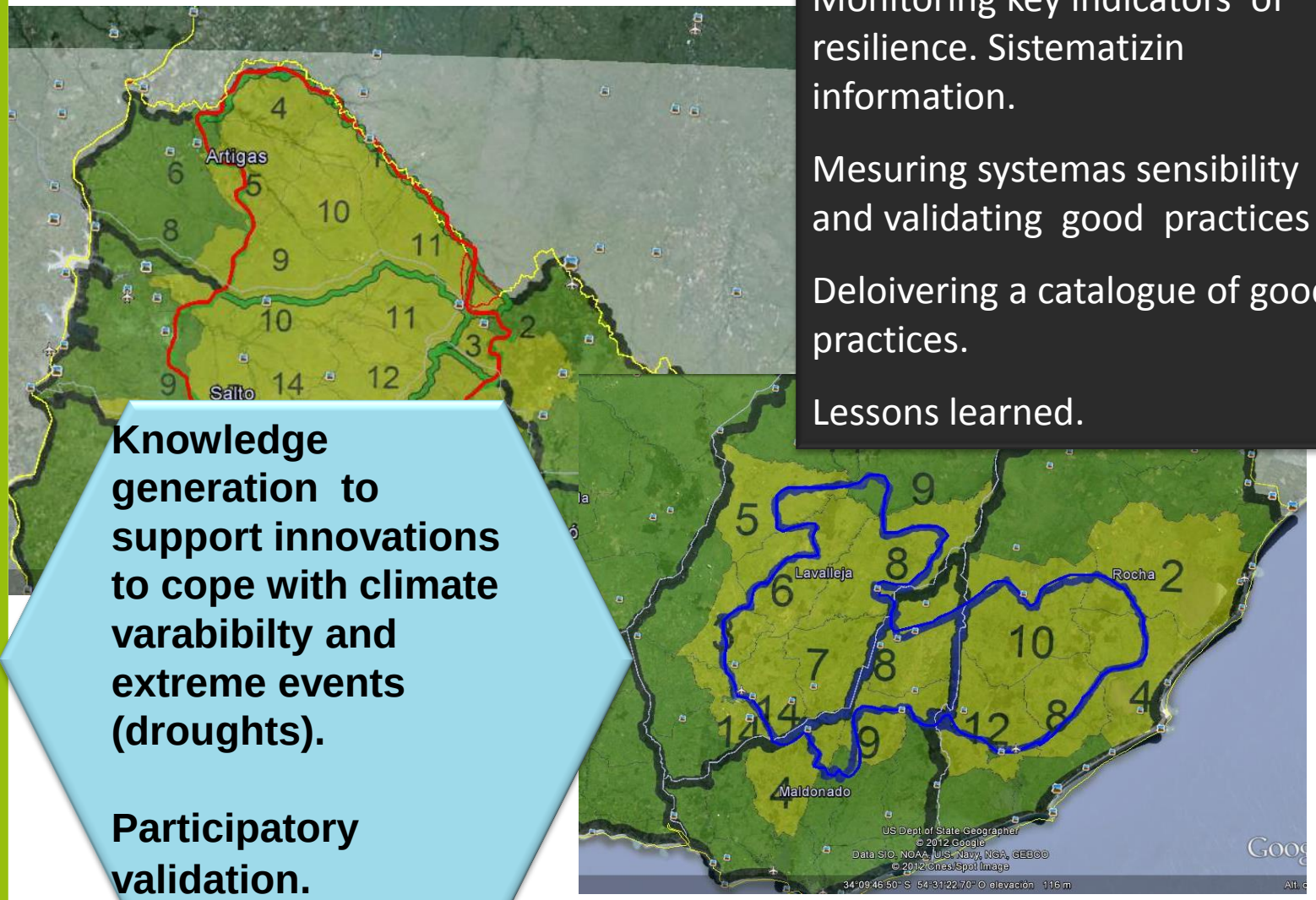
Consolidated institutional networks involving youth and prepared for climate emergency responses.



Focus on:

- Involving rural organizations , Rural Boards, others
- Collective actions and responses.

COMPONENT 3: Knowledge manangment



Monitoring key indicators of resilience. Sistematizin information.

Mesuring systemas sensibility and validating good practices .

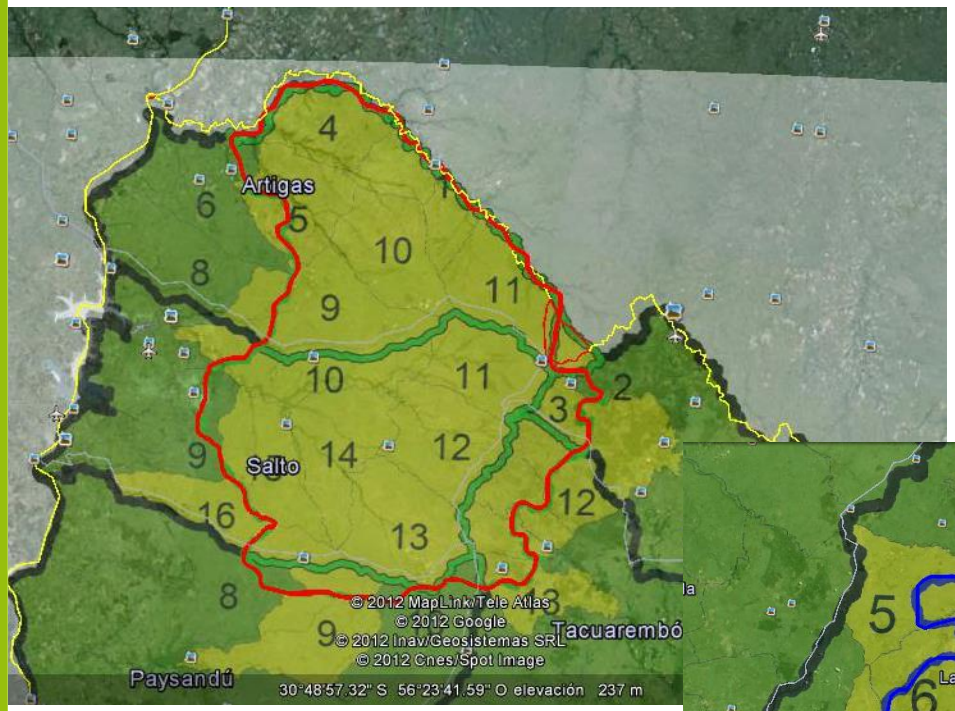
Deloivering a catalogue of good practices.

Lessons learned.

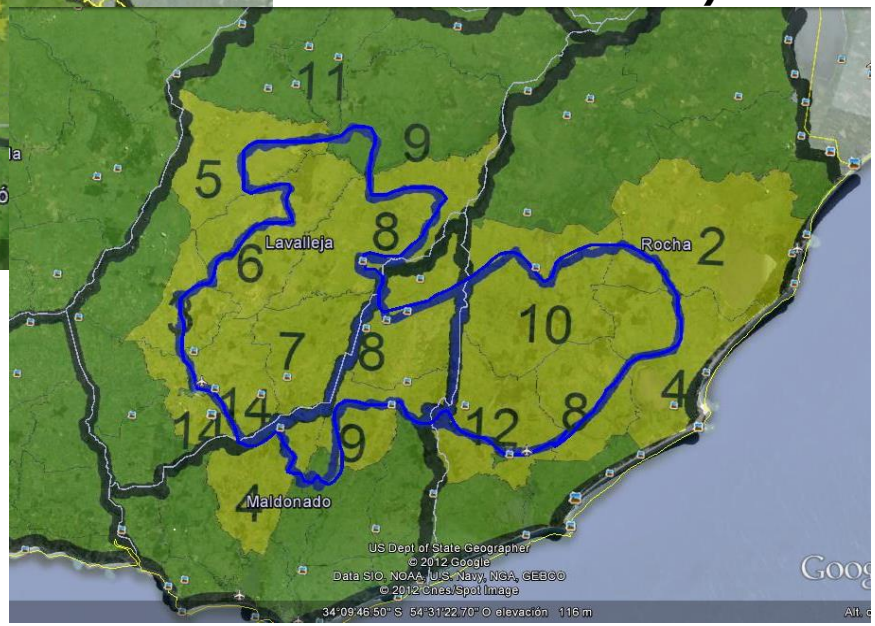
Knowledge generation to support innovations to cope with climate varabibilty and extreme events (droughts).

Participatory validation.

Implementation



MGAP:
DGDR (Rural Development)
Natural Resources
UACC (OPYPA)
UGP
ANII (innovation and research)



Rangelands Board
IPA (outreach), MGAP
INIA (research)
UDELAR (University)
SUL (outreach)

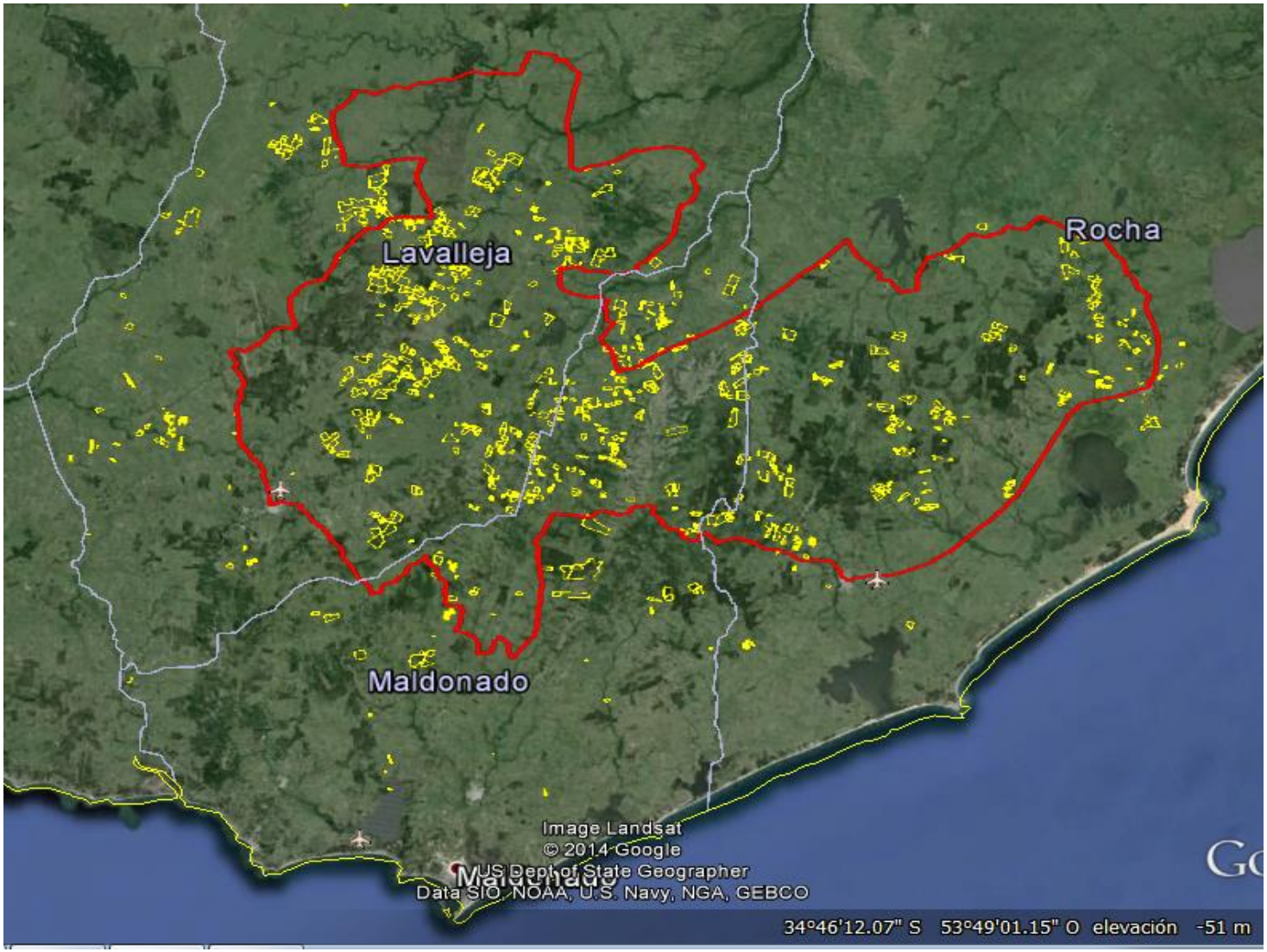
Budget per component	US$ Millions	Percentage
1. Farm level projects	7,26	75%
2. Networks streghthening	0,99	10%
3. Knowledge Management	0,78	8%
4. Operation costs (MGAP – ANII)	0,66	7%
TOTAL	9,62	100%

Financial execution of AF funds in the project: 45%

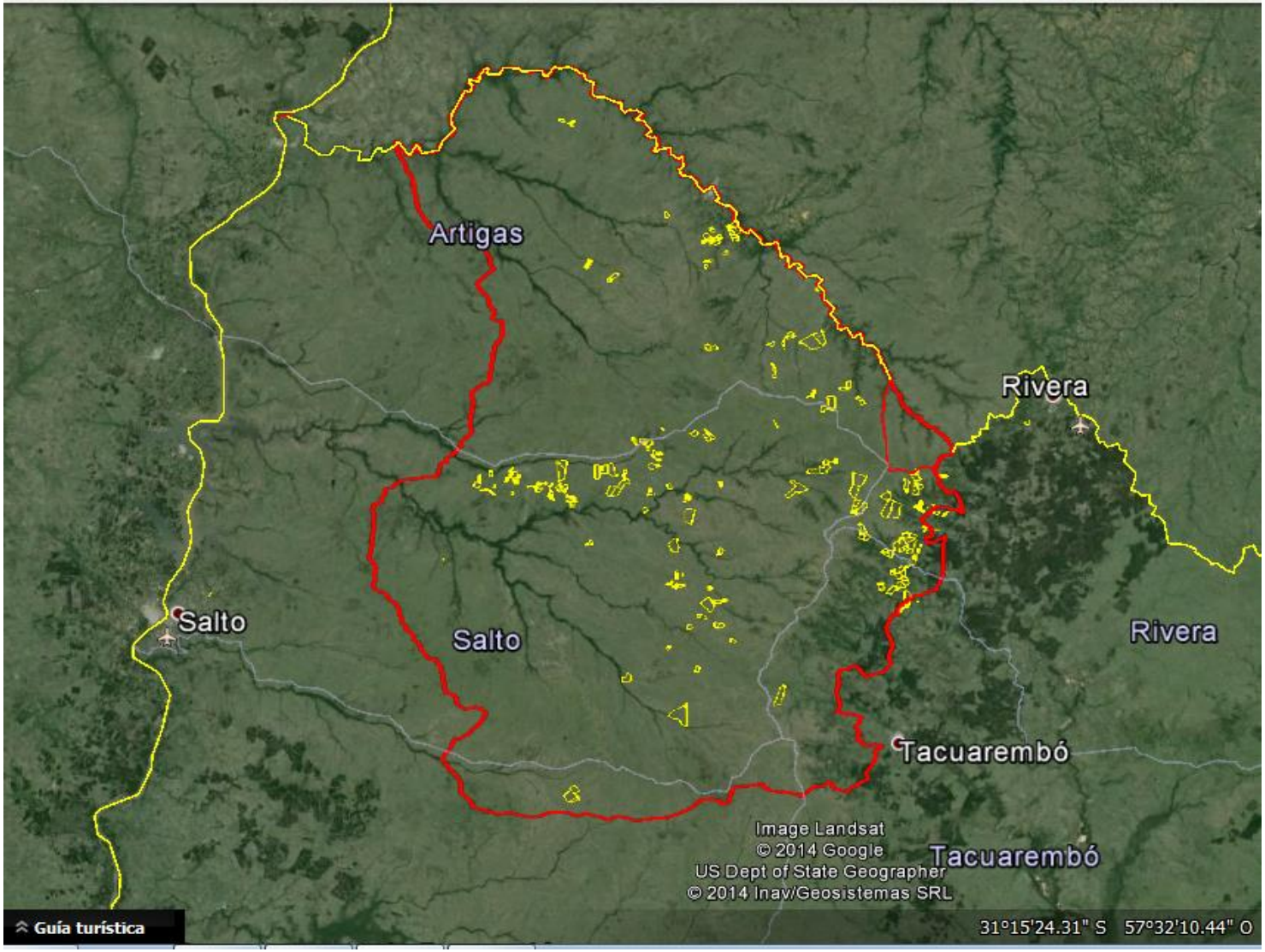
Components	Total budget	Total Obligado				Not committed
		A. Executed	B. Committed	Total	% A+B	
Component 1	7.260.000	696.932	2.476.031	3.172.963	44%	4.087.037
Component 2	952.362	180.671	427.333	608.004	64%	344.357
Component 3	784.424	58.365	388.667	447.032	57%	337.392
Component 4	474.643	78.479	60.000	138.479	29%	336.165
Contingencies	191.539	-	-	-	0%	191.539
Totales	**9.662.967**	**1.014.447**	**3.352.031**	**4.366.478**	**45%**	**5.296.489**

By September 8, 2014

Location of farms already involved (Eastern Hills)



Location of farms already involved (Basaltic Cuesta)



1

COMPONENT 1: Resilience increase

- Open calls to presentation of projects.
- By groups and individuals .
- Up to US$ 8,000 per farmer + 20% farmer contribution.
- Measures prioritized:
  - Water harvest and efficient use,
  - Protection and good management of natural rangelands
  - Shadow and shelter

- **Partial reimbursement** to revolving funds rooted in farmers organizations.
- **Technical assistance** to groups and/or organizations.
- Projects are presented by technicians habilitated and trained by DGDR and UDELAR, IPA, INIA, SUL. Online training.

Farm projects and participants: approved and under implementation

1

	Proyectos	Beneficiarios	Monto apoyo (US$)	Asist. Téc. (monto estimado, en US$)
Basalto	**25**	**146**	**810.563**	**210.108**
Aprobados	18	110	609.991	145.486
En ejecución	7	36	200.572	64.622
Sierras del Este	**42**	**302**	**1.915.549**	**590.367**
Aprobado Sin Contrato	27	187	1.152.734	341.043
En ejecución	15	115	762.815	249.324

Mostly collective projects (X%)
X % assisted by first time

1

Adaptation solutions: % of funds approved

Water solutions	%
Small reservoires and distribution to paddocks	9
Water storage tanks	7
Wells	6
Water pumping	4,5
Other	3,5
Total	**32**

1

Adaptation solutions: % of funds approved

Natural Grassland management solutions	%
Increase number of paddocks	30
Introduction of species in the sward	16
Forrage silus/hay	9
Weed control	3
Fertilization of grassland	3
Other	2
Total	**62**
Shadow and shelter	**6**

2

COMPONENT 2: local networks

- Participatory diagnosis with local Rural Development Boards (RDB).
- 7 RDB in each LU and related organizations defining working method.
- Participatory diagnosis: done.
- Strengthen local planning capabilities: starting.

2

COMPONENT 2: local networks

- Building a distance learning platform, involving technical and, in the future, producers.
- Working with children, youth and women on: adaptation to CC and natural resources conservation .
- Planning to use Plan Ceibal computers (to transmit information on forage growth, climate forecasts and early warning).

3

Knowledge Management: Objectives

- **Co-innovation in 30 "Reference Farms" monitoring of adaptation indicators**, systematization and diffusion of experiences at local level.
- **Obtaining lessons learned**, identify and validate good practices and tools for adaptation.
- **Improving knowledge availability on adaptation to CC and variability** (studies, knowledge exchange, lessons learned and deployed).

3

Monitoring farm´s resilience

1) **Climate exposure** (rainfall, drought indexes)
2) **ANPP** (NDVI), grass height and stocking rate.
3) **Beef production and net income, including impacts of variability and extreme events**.
4) Improvement of **infrastructure** to manage grasslands and cattle.
5) Adoption of **good practices and their impacts on resilience**.
6) Use of **information** in decision making to improve climate risks management.
7) Participation of **networks and organizations**.
8) **Environmental sustainability** (soil organic matter, biodiversity, water runoff).

3

Institutional partnerships

Formal agreements to implement monitoring process and studies :

- **SARAS** (Stockolm Resilience Center, Waggeningen UR, Arizona SU, Waterloo U, UDELAR) to measure resilience at farm level.
- With **Faculty of Agronomy, Faculty of Sciences** and **INIA**: to conduct the Co-innovación and data collection process in the Reference Farms.
- With **Faculty of Agronomy** to produce the baseline scenario and monitor few relevant indicators on all farms.
- With **Plan Agropecuario**: Updating of MEGanE, tool to assist decision making on stocking rate

1 + 2 + 3

Conceptual framework

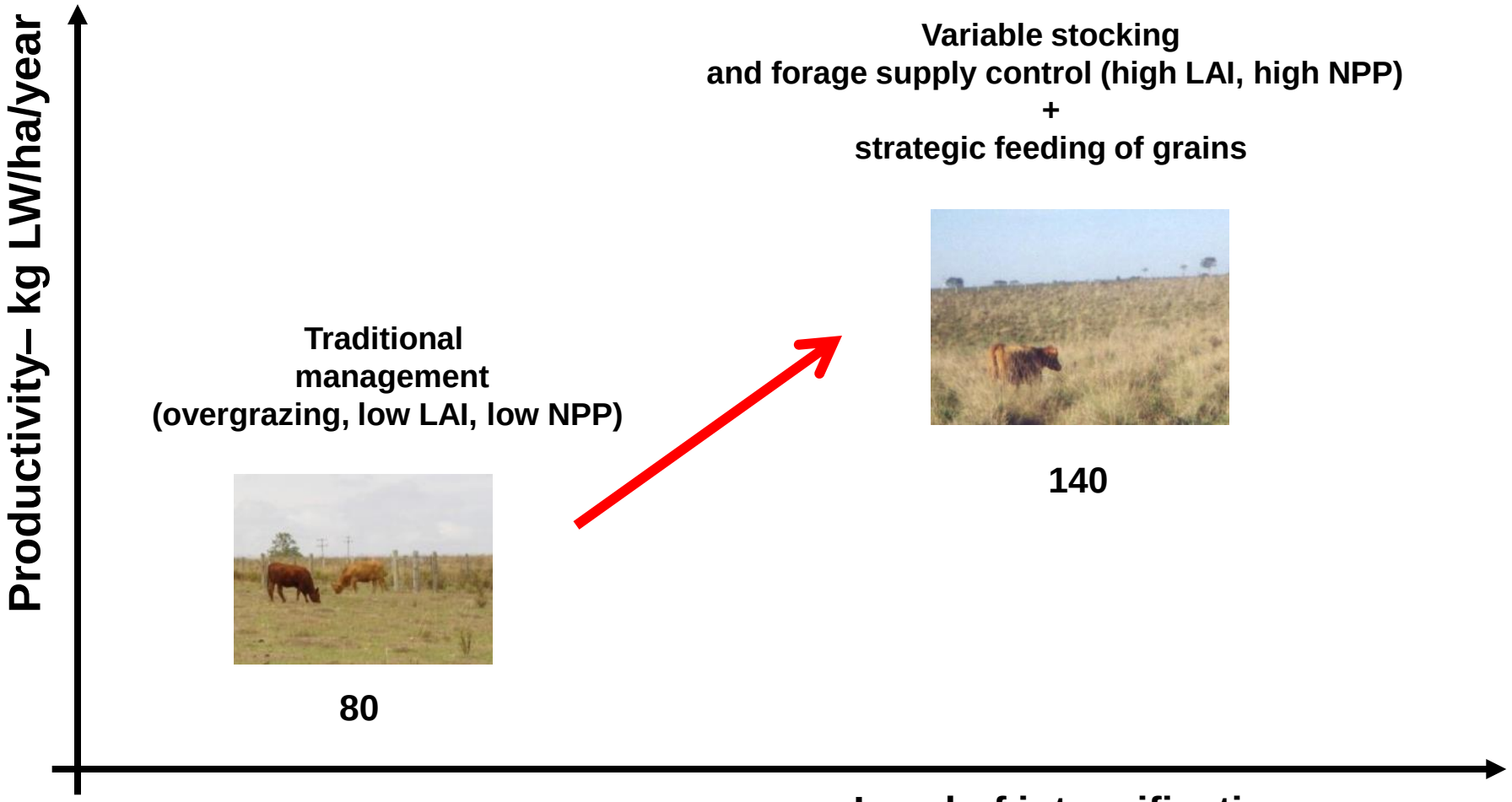
- **Win-win** game: More productivity and more adaptation to climate variability **at the same time.**
- Increse production without increasing costs significantly
- Restoring rangelands' soils fertility and biodiversity as resilience drivers (C sequestration as co-benefit)

¿HOW?

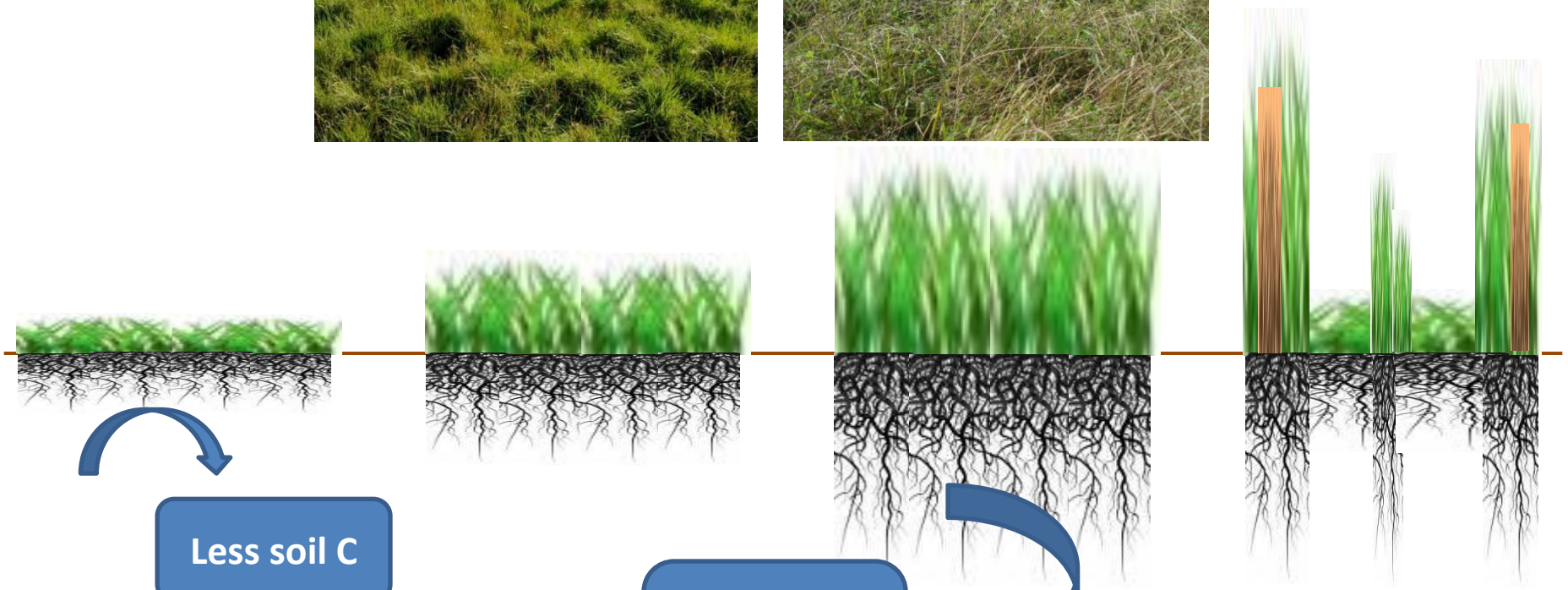
- Some investments

+ Low costs soft management technologies of high impact and knowledge intensive

Ecological intensification pathway to increase productivity and adapt to CC



Source: Adapted from Faccio, 2013



Less soil C

Rebuilding soil C

Synergies between adaptation and mitigation

Finally…

- This project is very important for Uruguay.
  - It is a huge learning laboratory to scale up innovative policies to other 15,000 cattle and sheep smallholders.
  - In a key sector (cattle) both—economically and socially (smallholders).

- We are very thankful to the AF for selecting our proposal.

- We are committed to make the most of it and share all the experiences and lessons with the AF and other countries.

“Building resilience to climate change and vulnerability in vulnerable smallholders"

THANK YOU VERY MUCH!

MINISTERIO DE GANADERÍA
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