XXVII Meeting of International Cooperation Directors and Entities in charge of STI in LAC

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Some of the objectives of this XXVII Meeting are:

. ..... exchange experiences and best practices in science, technology and innovation (STI)

..... South-South cooperation and triangular cooperation in STI

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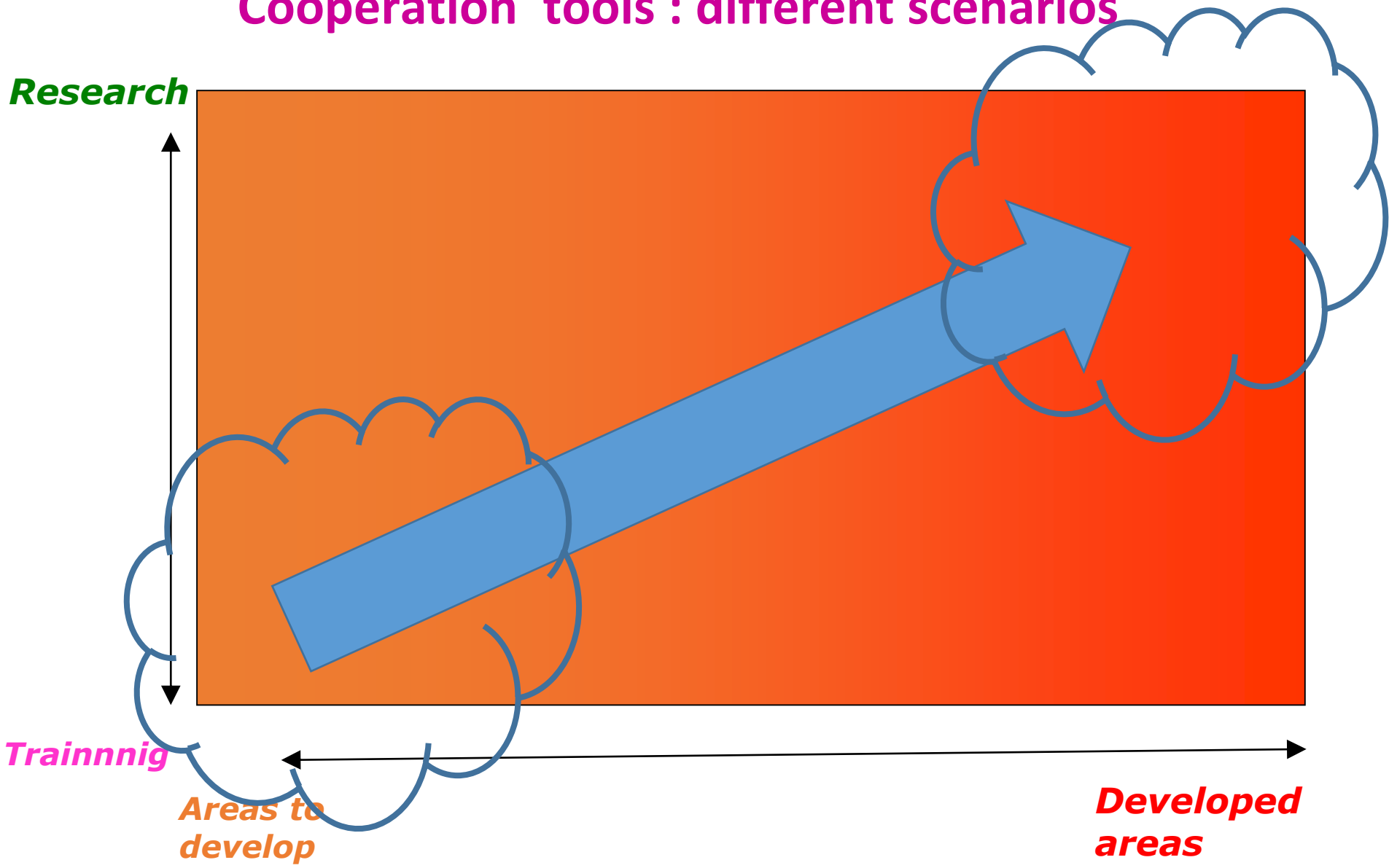
Cooperation tools : different scenarios



When training is important ……..

- **Stays abroad for Young Researchers and Fellows**
- **Stays in Argentina for foreign experts**

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When capacities are similar ……..

- Bilateral Projects Oriented
- Fellowships for foreign PhD students in Argentina
- International Research Groups (GII) Research and Ph D training program
- Joint research laboratories
- International centers and projects in Argentina

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Max Planck Society

CNRS

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Binational research centers

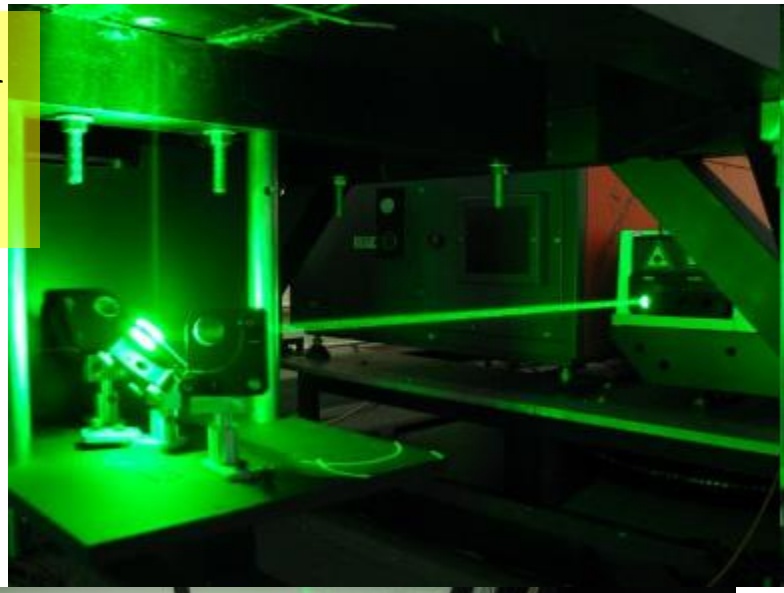
Structural biology and neurobiology (With Max Planck Society, Germany)
Climate and its Impacts (with France)
Computer Simulation, Modelization and Visualization (planned with France)

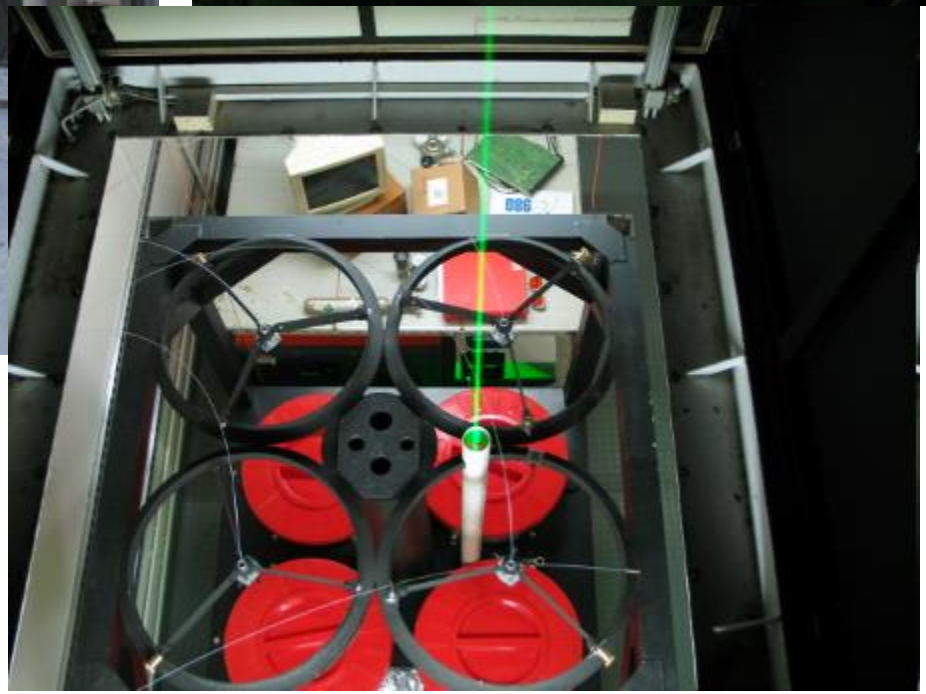
Binational laboratories

Fluid mechanics Laboratory (with France)
Molecular vectors Laboratory (with France)
Economics and work evolution (with France)
Informatics, Logic, languages, verification and systems (with France)
Infection and Immunity Laboratory (with France)

CEILAP
CONICET
CITEFA

Laser Imaging Detection and Ranging LIDAR
Southern patagonia



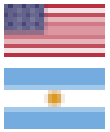


AERONET Lidar network with NASA and SATREP Japan

Construction of LIDAR atmospheric monitoring system for airports

SAC D Satellite

designed and assembled by CONAE INVAP

Name		Operator		Purpose
Aquarius		NASA	USA	Ocean salinity research
CARMEN I		CNES	FRANCE	SODAD particles and debris in space, ICARE cosmic radiation and its effects on electronics
DCS		CONAE	Argentina	data provided by platforms on Earth. Argos System
HSC		CONAE	Argentina	aurorae, fires, and lights
MWR		CONAE	Argentina	Radiometry
NIRST		CONAE CSA	Argentina Canada	Infrared sea temperatures
ROSA		ASI	ITALY	Temperature and humidity in the atmosphere
TDP		CONAE	Argentina	GPS navigation and inertial guidance[3]

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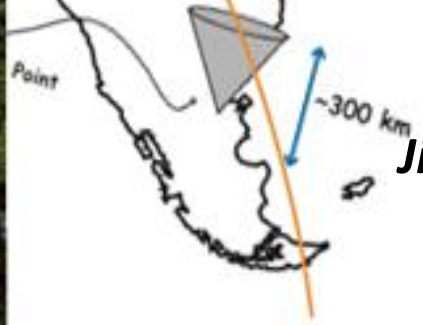


Ionospheric Radar Experimental Station

UMET Puerto Rico
***Jicamarca* Radio Observatory**
Peru
CONICET

Pierre Auger Observatory Malargue Mendoza

First International Observatory on Cosmic Particules

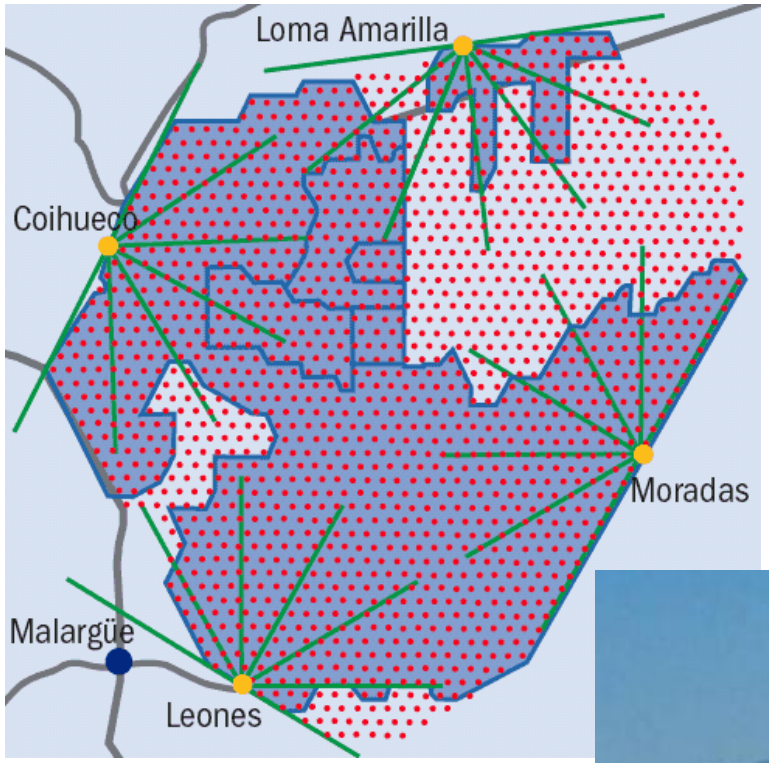
50 institutions from 17 countries

3000 detectors over
3000 sq Km
4 fluorescence telescopes
1 LIDAR

Development of muons detectors

Distributed network of sensors and data handling

Teraflop levels of data processing



AGGO Argentine German Geodetic Observatory

6 international services :

- IERS, Int. Earth Rotation and Reference System Service
- IVS, Int. VLBI Service for Geodesy and Astrometry
- ILRS, Int. Laser Ranging Service
- IGS, Int. GNSS Service
- BIPM-UT, Universal Time Service
- IGFS, Int. Gravity Field Service

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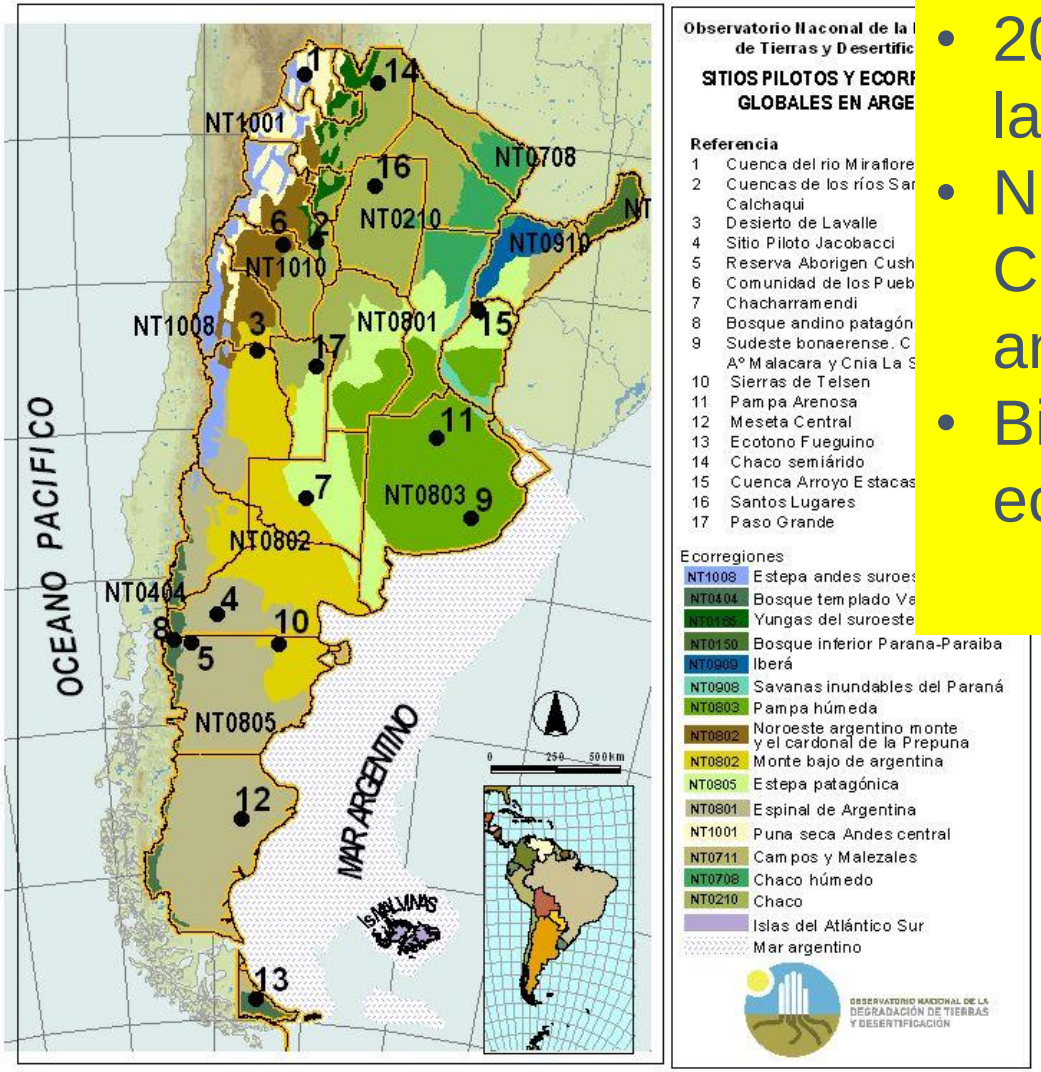
How to address complex questions?

Networking
and
data integration

Only a responsability of researchers?

- 75% of land is arid of semi arid
- And 80 % of that shows some degree of degradation



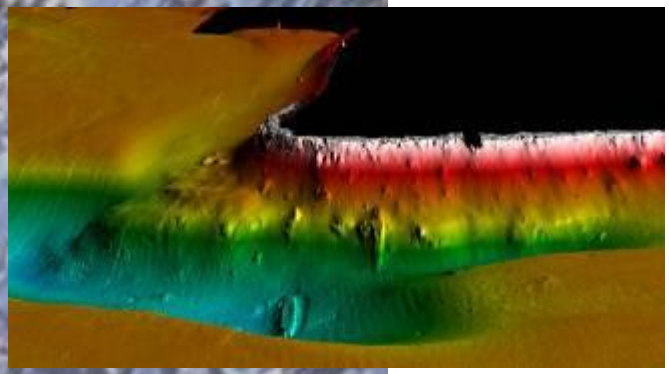
Land degradation and Desertificacion National Observatory

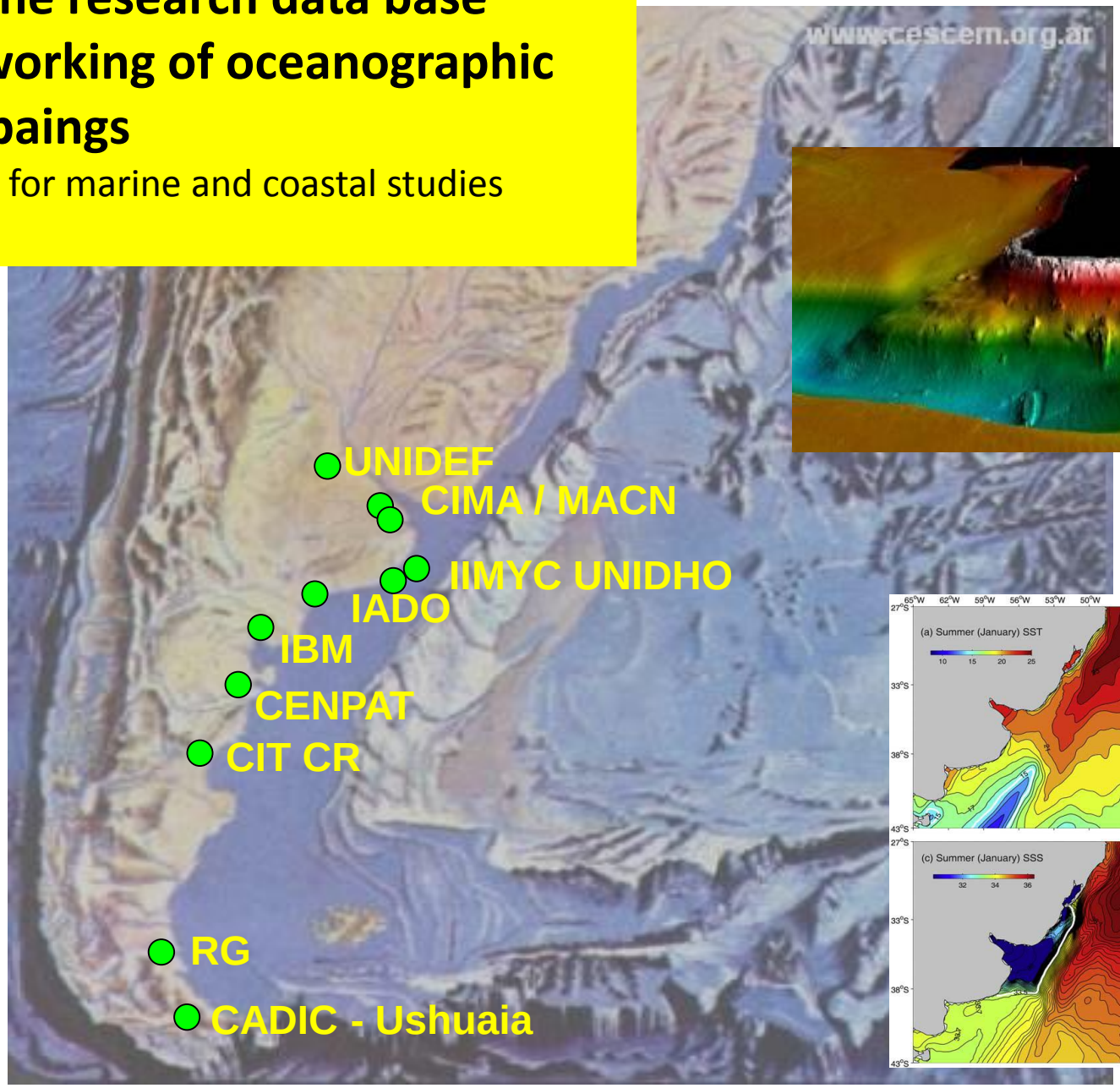
- 20 monitoring sites in dry lands or at risk
- Network of 16 Institutions : CONICET 10 Universities and 5 gov agencies
- Biophysical and socio economic indicators

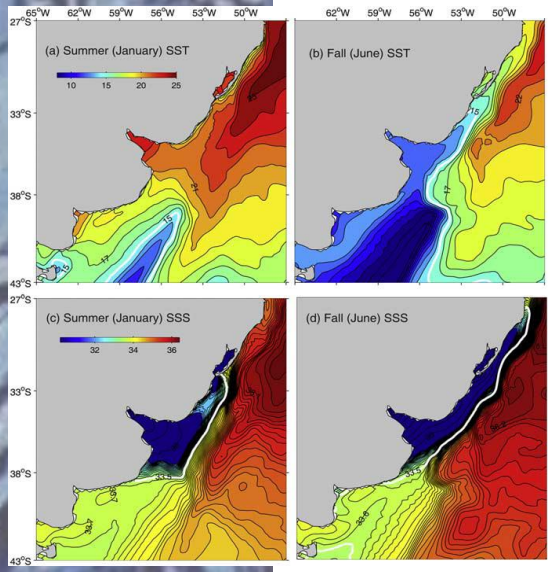
FAO Pilot study in
Argentina
China,
Cuba, Mozambique
Tunisia and South Africa

- **Marine research data base**
- **Networking of oceanographic campaings**

Consortia for marine and coastal studies

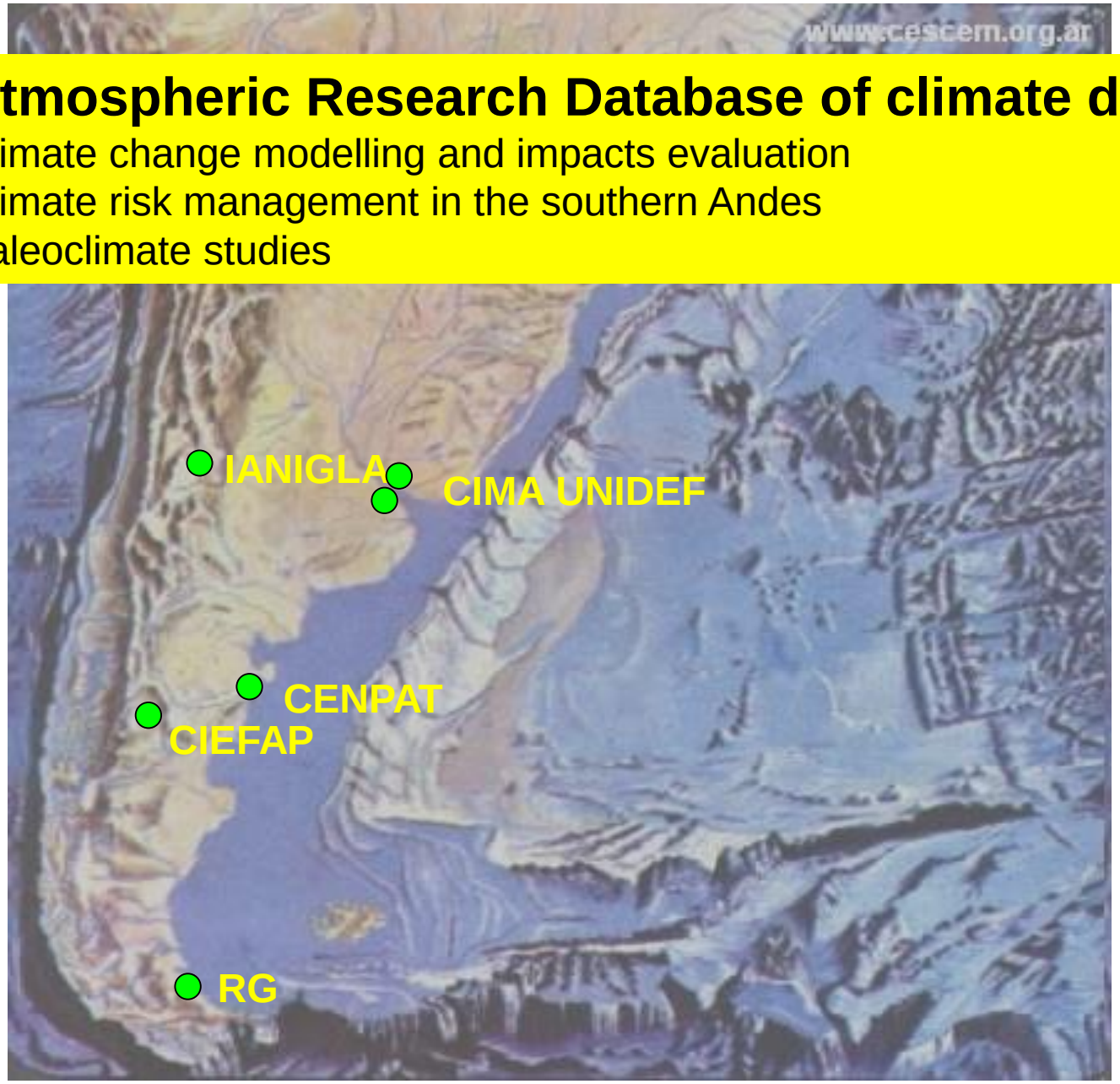






Atmospheric Research Database of climate data

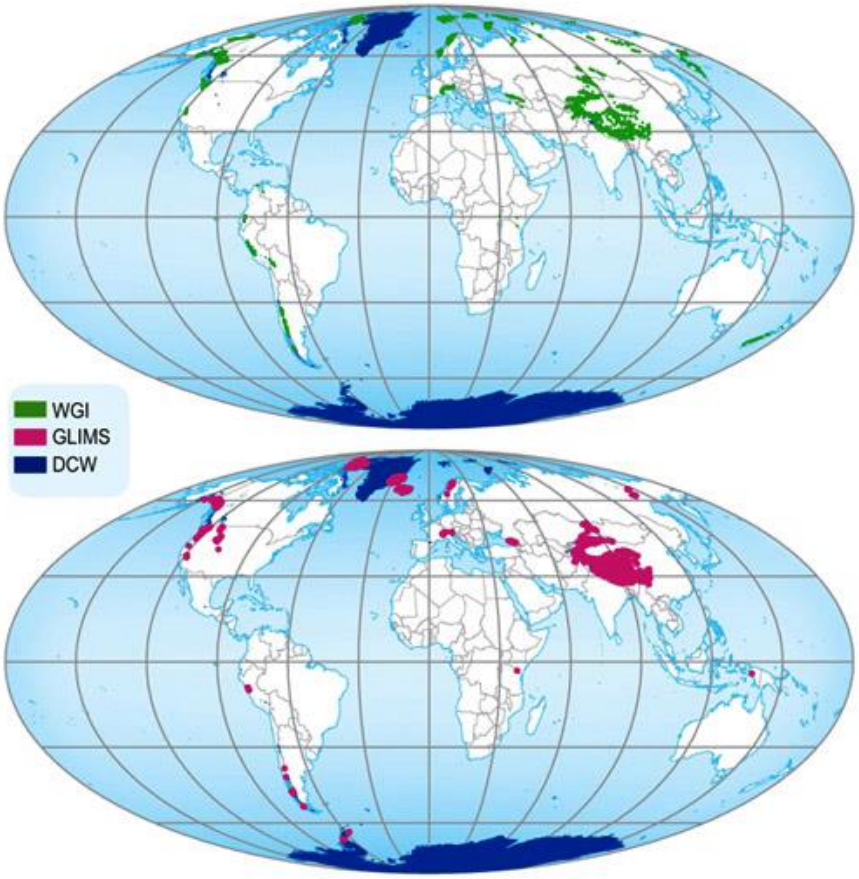
Climate change modelling and impacts evaluation
Climate risk management in the southern Andes
Paleoclimate studies



National Inventory of Glaciers

- **IANIGLA (Centre for Snow Research, Glaciology and Environmental Sciences)**

  - Provides a long-term study of ice bodies , their dynamics and hydrology
  - Involves systematic mapping and monitoring methodologies.
  - Includes a Validation with international experts and standards



OPEN DATA

…….an opportunity for big science
….a challenge to scientists and institutions traditions

…..an opportunity for agencies collaboration

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DATA LAYERS

Demography

Geographic/
Cadaster

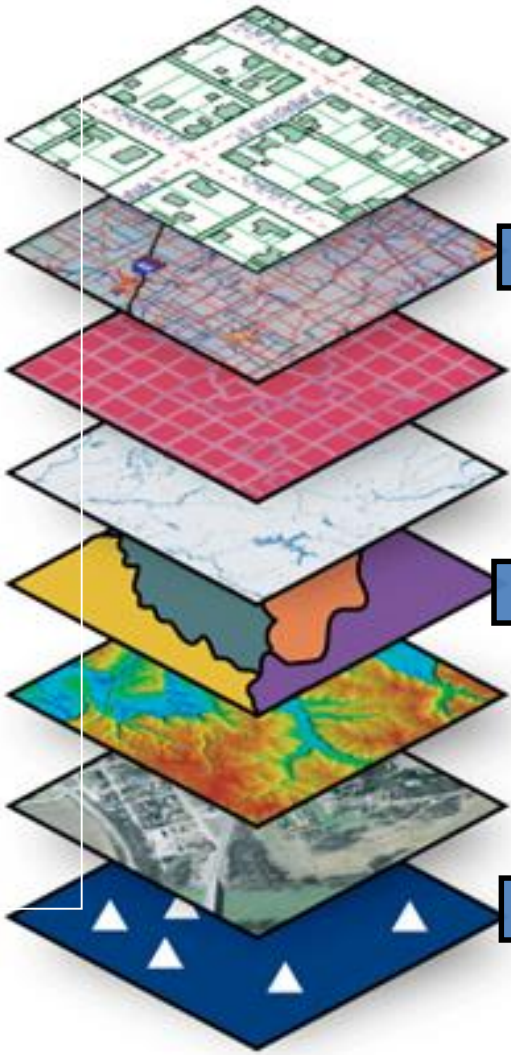
Communication

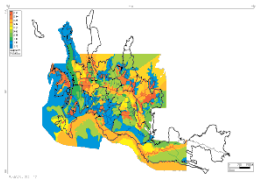
Institutional

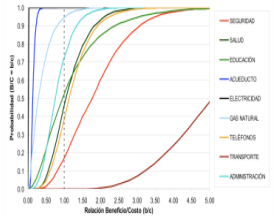
Economics

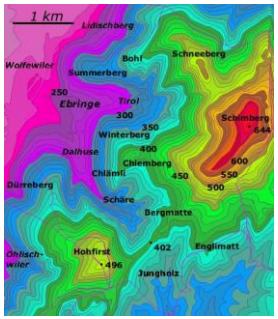
Climate

Environment









PRODUCTS

Risk map
Cost/Benefit

Analysis
On time damage &
loss estimations

Land Use Planning
tool
Climate Impact
Scenarios

Analytic models

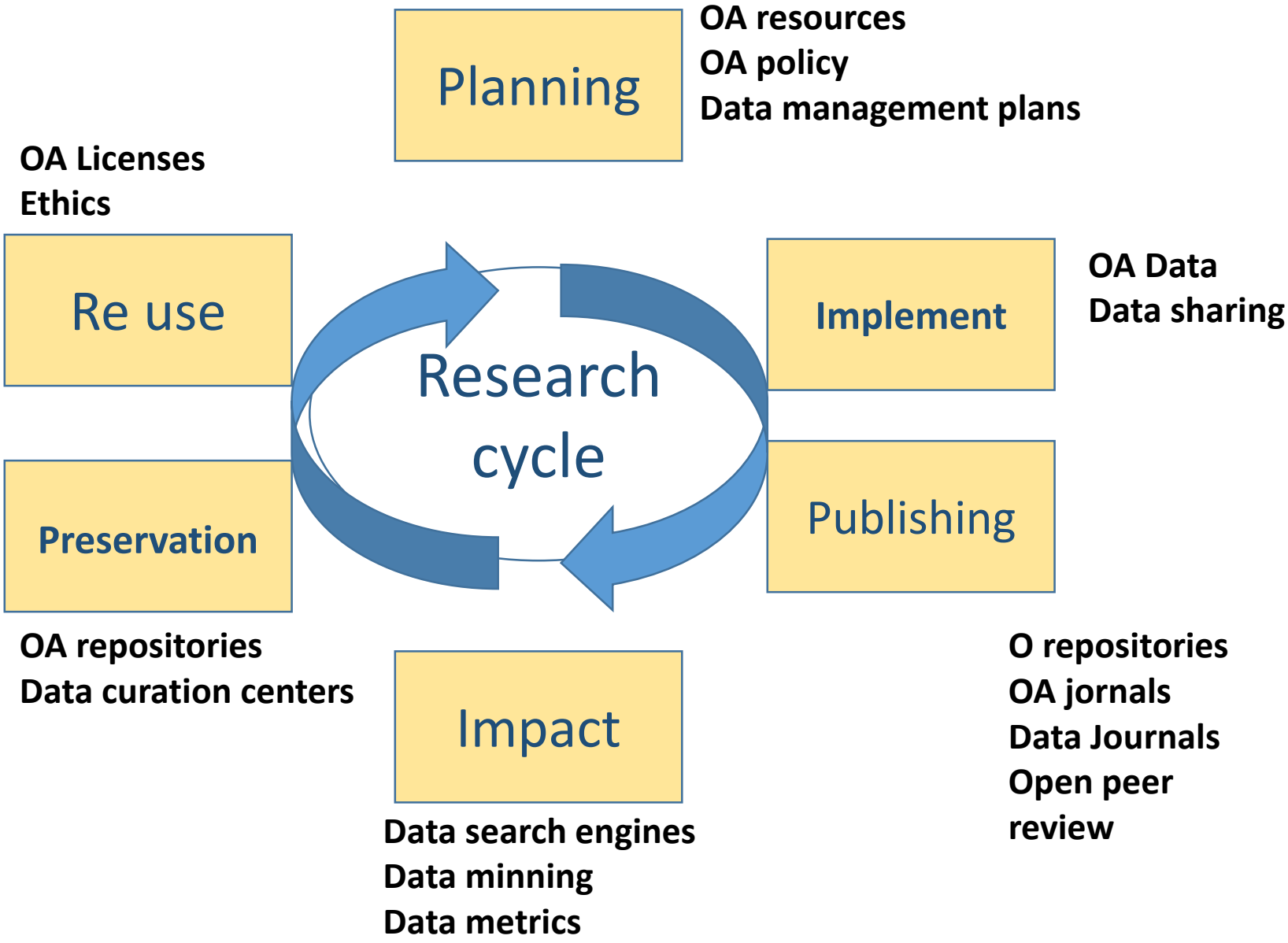
Disciplinar
Scientific
Technical data

DATA INTEGRATION

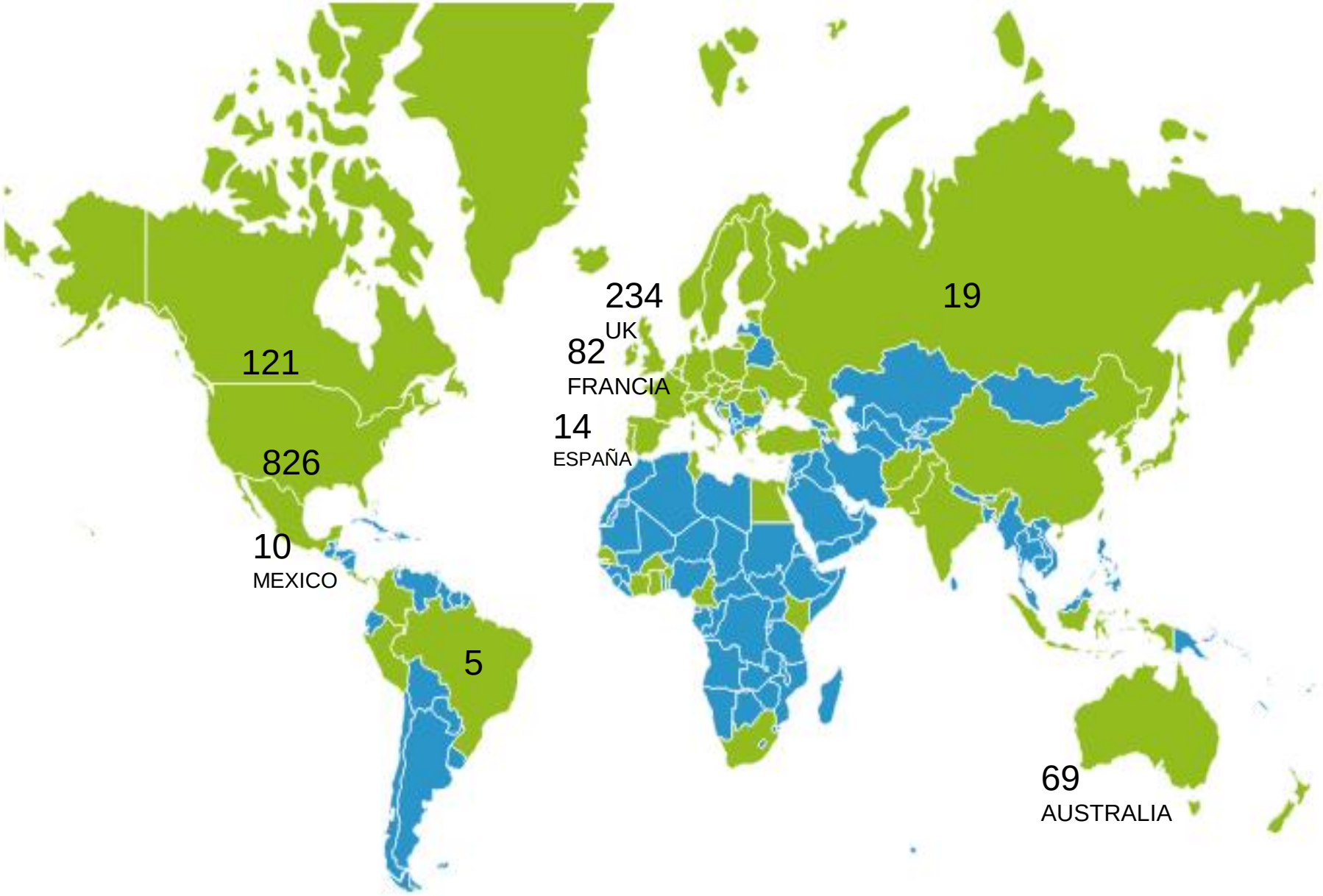
INTERDISCIPLINE

Open Data

- Allows different interpretations and uses
- Long term preservation maintains data integrity
- Optimal use or resources (no repetition of data generation)
- Increases individual and institutional visibility
- Provides a working platform for complex research
- Assures data quality and reliability. (prevents data fabrication copy and “forced” hypothesis)

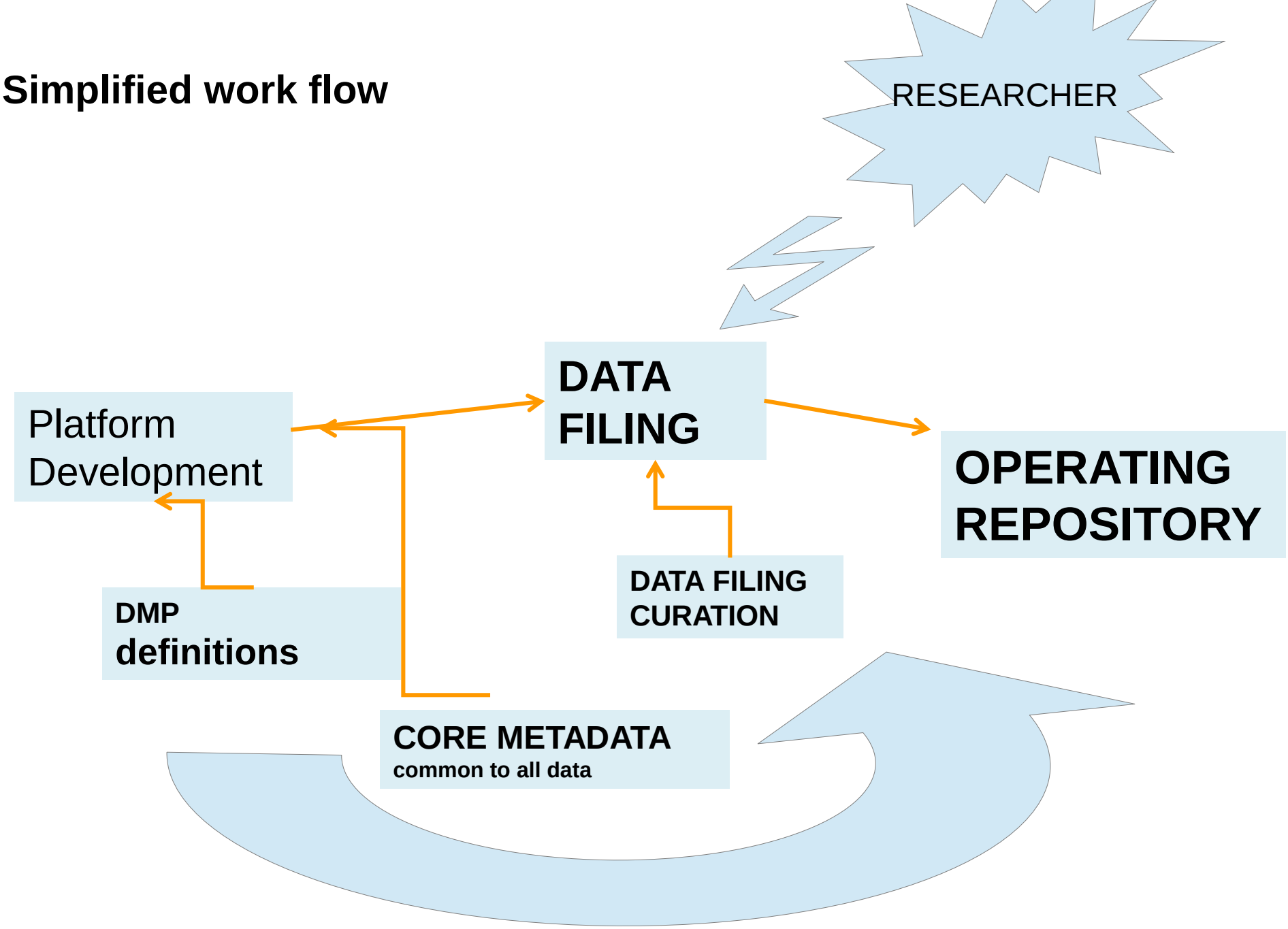

Planning
OA resources
OA policy
Data management plans
OA Licenses
Ethics
Re use
Research cycle
Implement
OA Data
Data sharing
Preservation
Publishing
OA repositories
Data curation centers
Impact
O repositories
OA jornals
Data Journals
Open peer review
Data search engines
Data minning
Data metrics

Institutional research data repositories



Source : Datacite – re3data

Simplified work flow



- Information in **thematic** repositories needs efforts in ……

- Primary data available and secured
- Quality standards for data and databases
- Consensus on core metadata system
- Constant Data monitoring
- Interoperable Databases
- Georeferenced data
- Data quality control

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Geographic/
Cadaster

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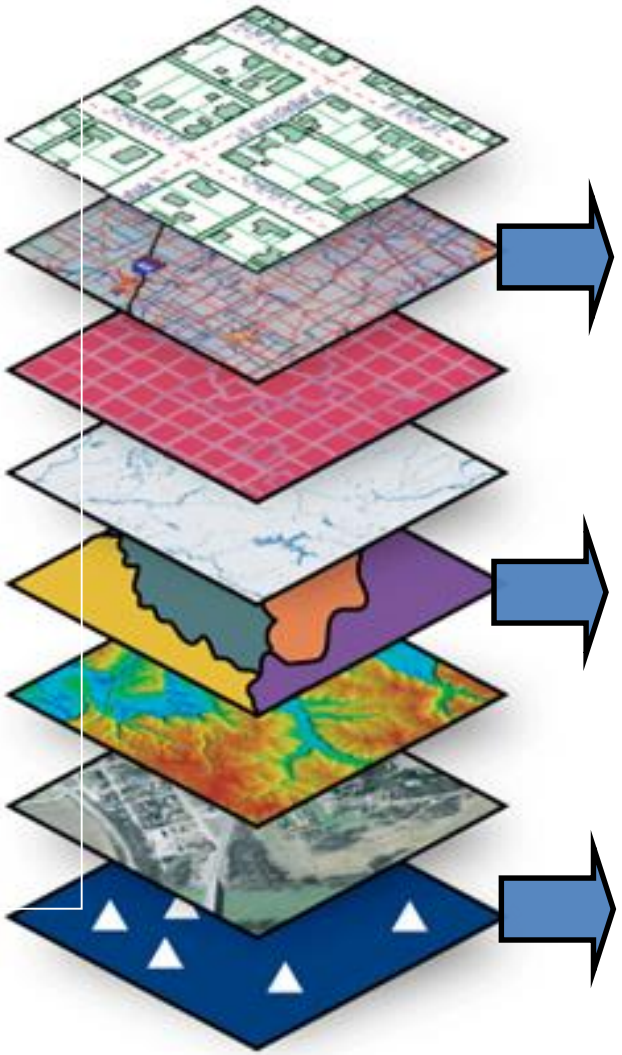
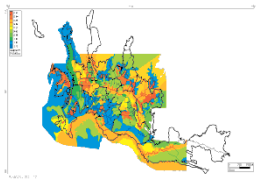
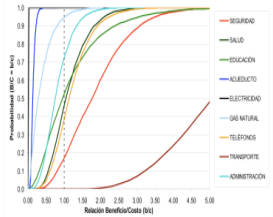
Economics

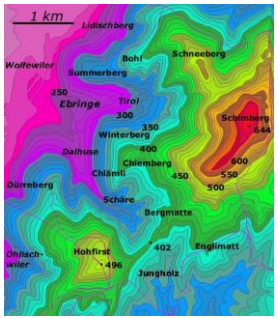
Climate

Environment









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DATA INTEGRATION

INTERDISCIPLINE

DATA MANAGEMENT
PILOT PROJECTS

Actions	Responsible	Date Expected
Law 26.899 Regulatory decree Institution guidelines	MINCYT MINCYT CONICET	Issued Mid 2016 Mid 2016
Metadata system	MINCYT	Pilot early 2016
Data Management Plan	CONICET /UNLP	Mid 2016
Software selection	CONICET	Mid 2016
Implementation	CONICET /UNLP	Late 2016

1 National Observatory on Land Degradation and Desertification
2 CONICET/UNLP/CIC Environment Observatory
3 Marine sciences

Policies needed to manage scientific data:

Defined Policies in funding agencies and universities
Establishment of roles and responsabilities

Specific funding for Open data programs

Specific trained personnel (curation , trainning of researchers , preservation integration of data)

Infraestructure for data storage processing, distribution , interoperability

Interagencies and intergovernment collaboration

Invitation to conform…….

Common Platform for Open Data Repositories In LAC

……to share ……

- Experiences
- Technologies
- Protocols
- Documents on policies
- Standards

- Experiences : La Referencia and the initiative of ICSU in Africa and ICSU LAC

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Muchas Gracias
Thank you

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