Our experience in co-producing Hydro-climatic knowledge in Argentina

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Anticipating the Flood

We develop and apply a methodology to **improve the understanding of floods at the Matanza River Basin**, a rural-urban sub-basin of La Plata Basin, located in Buenos Aires, at the east of Argentina where more than 7 million people live

2-7
TIMES
Matanza is affected by **floods around 2 to 7 times per year**

1.000-10.000
PEOPLE
Between 1.000 to 10.000 people with **high socio-economic vulnerability** are usually evacuated during floods
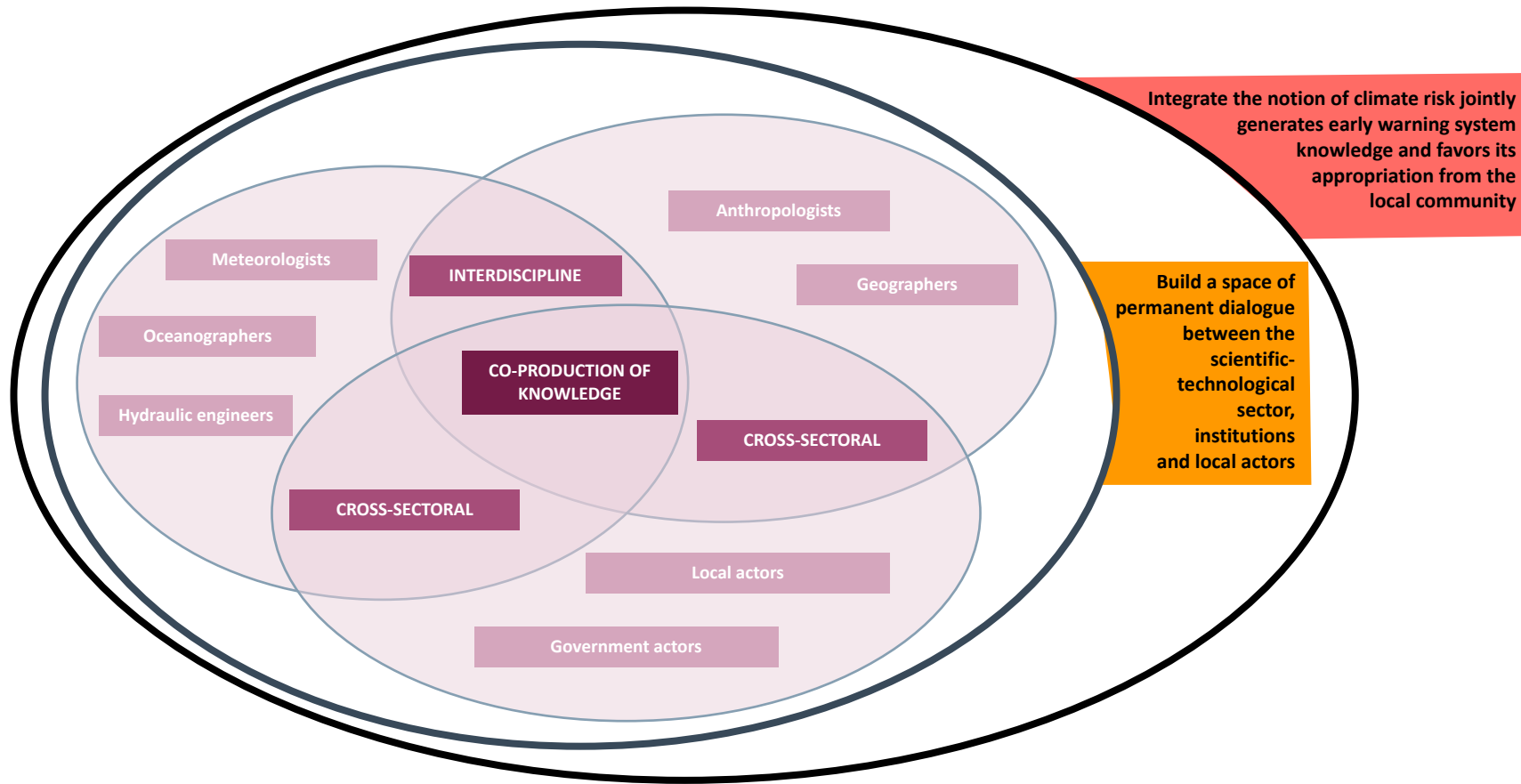
5-14
DAYS
People can stay **5 to 14 days evacuated in each flood event**

CONCEPTUAL FRAMEWORK

Meteorologists

INTERDISCIPLINE

Anthropologists

Geographers

Oceanographers

CO-PRODUCTION OF KNOWLEDGE

Hydraulic engineers

CROSS-SECTORAL

CROSS-SECTORAL

Local actors

Government actors

Integrate the notion of climate risk jointly generates early warning system knowledge and favors its appropriation from the local community

Build a space of permanent dialogue between the scientific-technological sector, institutions and local actors

METHODOLOGY

Symmetrical dialogue
between the scientific sector
and the community

**Symmetrical integration of
local and scientific
knowledge**

**Co-design of community
Early Warning System**

Social
organizations

Local
government
delegations

Schools

Community

SOME ACTIVITIES

Walk in flood zones with neighbours, local government, students and school teachers

Flood risk mapping with them

Understand official sources of hydro-meteorological information through its exploration and use.

Monitoring rain and river levels, with community rain gauges and hydrometric rulers

Design a digital community network to socialize local monitoring information, using WhatsApp.
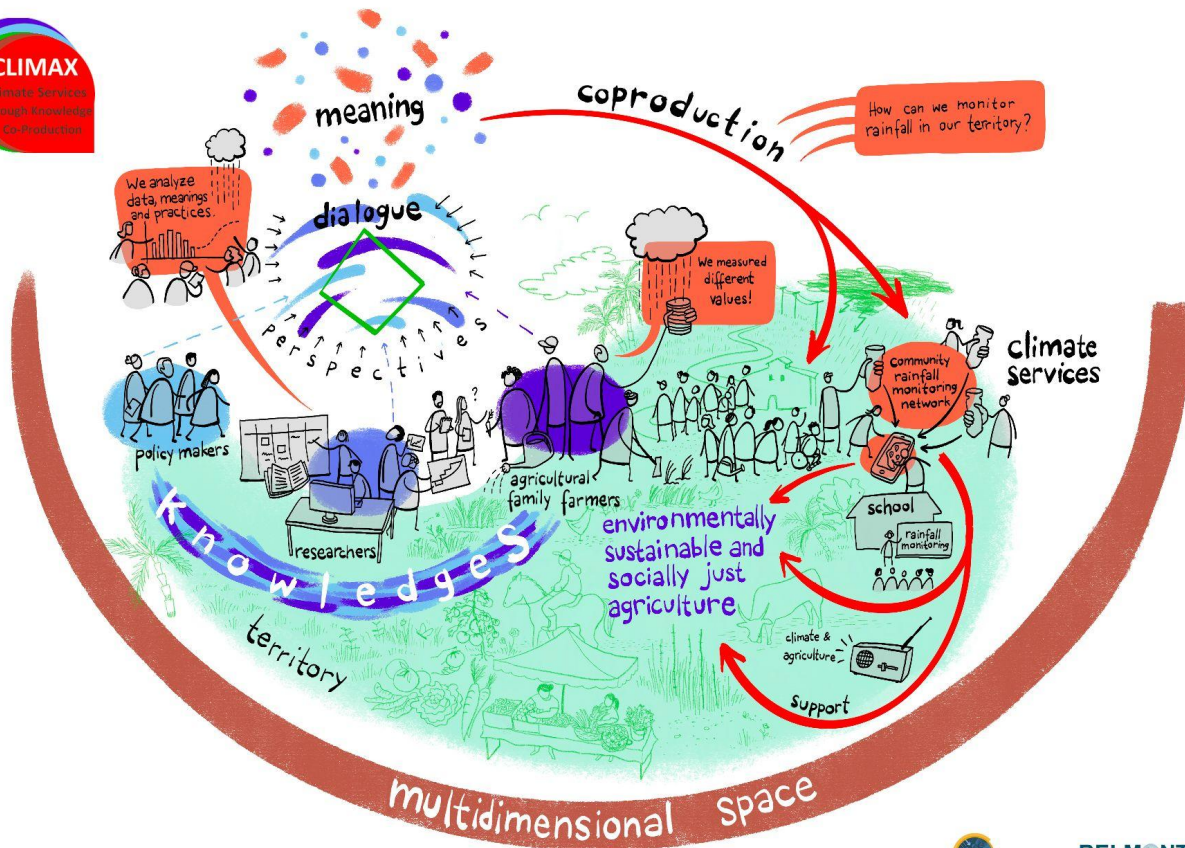
Bermejo Department

- Rural area located in the Gran Chaco wetland region in Northern Argentina
- 30.000 persons live there
- An alluvial plain area near to the Paraguay and Paraná rivers affected by floods and droughts

CLIMAX project

- Interdisciplinary and intersectoral dialogic process to co-produce relevant and useful climate products
- PARTICIPANTS:
  Climatologists
  Anthropologists
  Small farmers
  Teachers and students of a rural school
  Agents of state agricultural institutions

CONCEPTUAL FRAMEWORK

Implicated science approach

(1) establish **communication between actors** to recognize different points of view regarding a topic and distinguish coincidences and discrepancies between them;

(2) **apply symmetry of the various knowledge on a subject**, to validate all points of view about the world even if this implies contradictions

Hernández, V., Riglos, M. F. F., & Vera, C. 2022

Precipitation and hydrological monitoring

Ethnographic field work
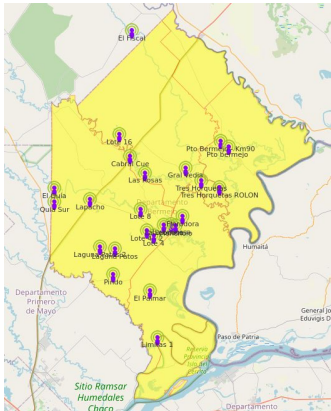Identify the most important worries of the people.

↓

The nearest official rain gauge measurements were not representative of the rain that they experienced.

↓

We started to development a precipitation community monitoring network.

After that, local people also showed their interest in hydrological monitoring.

22 PLUVIOMETERS
8 HYDROMETRIC RULES

Various workshops and meetings are held among the actors to devise possible monitoring strategies, systematize measurements, and disseminate information to the population of Bermejo.
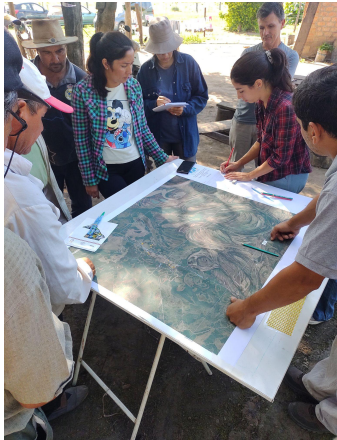
Through social networks, the social actors share the observations and the impacts associated with different climate events.
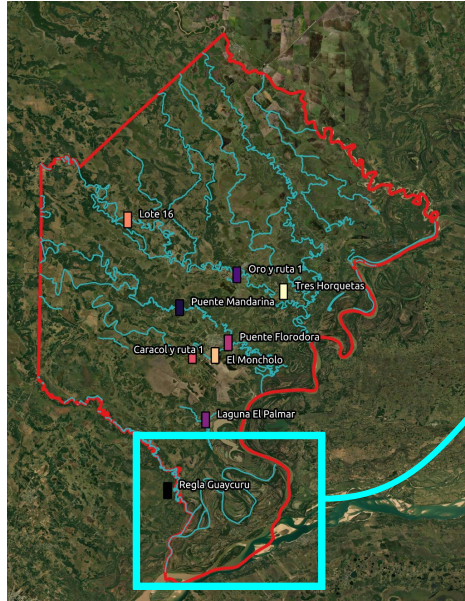
MAPPING ACTIVITY

Focus on the movement of water

Small farmers tell us the location of their houses, stockyards and other sites of interest.
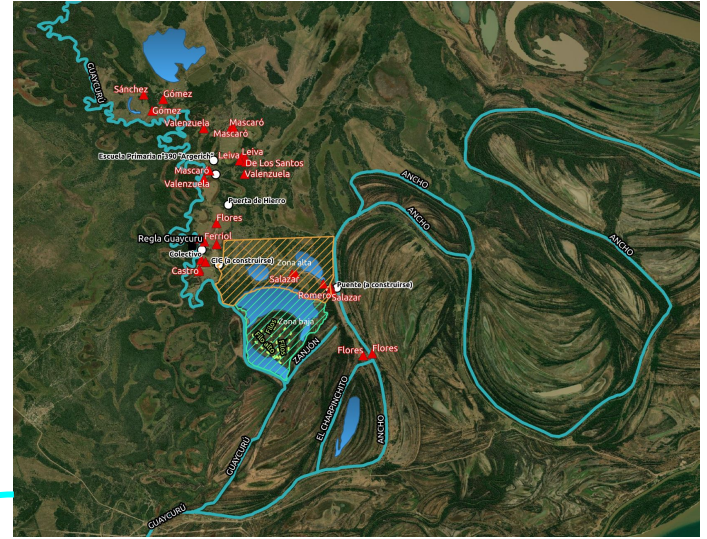
They pointed to where the water reaches in hydric extreme events.

Bermejo Department

"Limitas" area

SOME CONCLUSIONS

There are many co-production frameworks, choosing one depends on the region and problems. If social scientists are involved, it is easier to choose them correctly.

This kind of process allow local actors to appropriate the knowledge co-produced

Generating local community monitoring networks turned out to be a good strategy for risk knowledge and then reduction in both projects

Co-production approaches take long. Both projects started more than 5 years ago and are still in progress.

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