

Binational Commission for the Development of the Upper Bermejo and Grande de Tarija River Basins



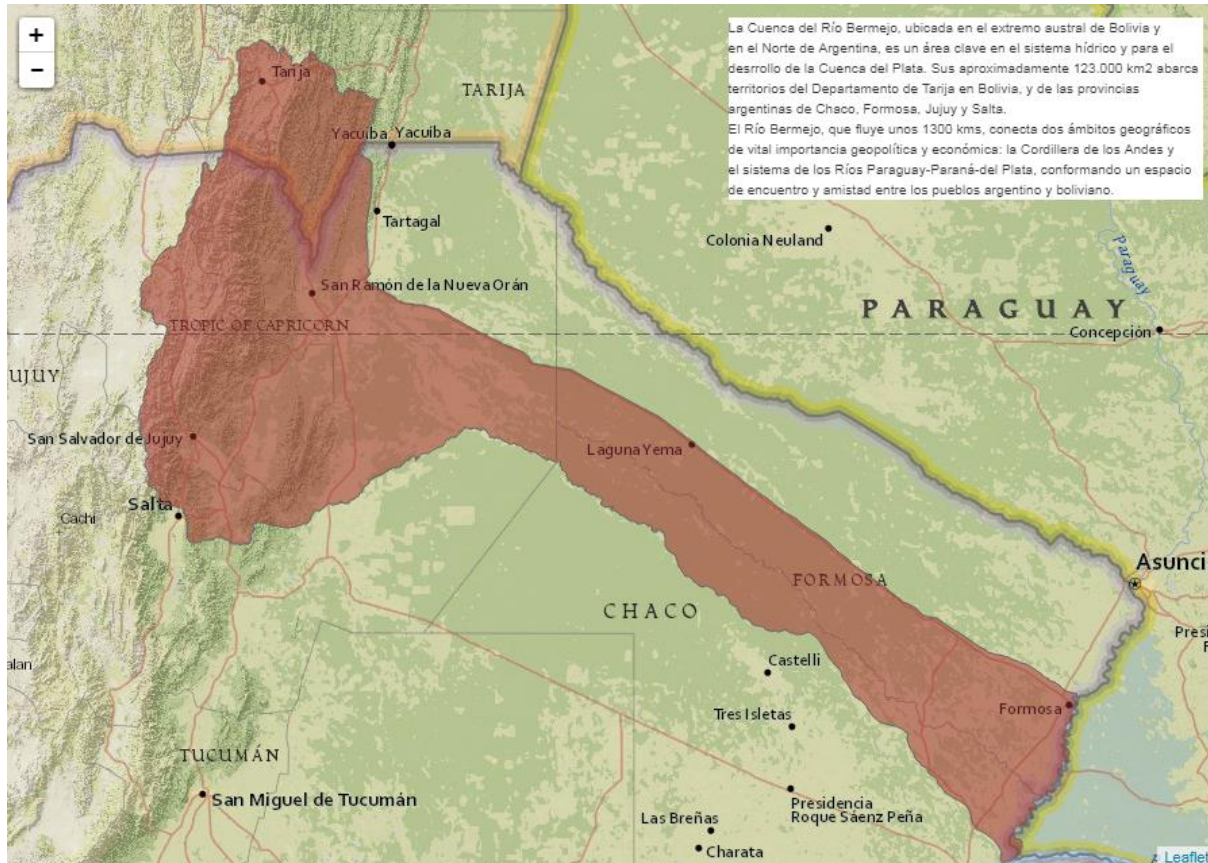
Martin Orloff



Comisión Binacional para el Desarrollo de la Alta Cuenca del Río Bermejo y del Río Grande de Tarija – COBINABE



Binational Commission for the Development of the Upper Bermejo and Grande de Tarija River Basins





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COBINABE

- Created by the Treaty of Oran in 1995 (ratified by Law 24.639 in Argentina and Law 1.711 in the Plurinational State of Bolivia).
- International- Binational Organization.
- Permanent, legal and inter-jurisdictional framework responsible for managing the Upper basin.
- Legal entity (Art. 4 T.O.): economic, financial, technical and administrative autonomy and management.



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- **OBJECTIVES**

- i. Water regulation
- ii. Construction of hydroelectric dams for regulation, irrigation, energy production and access to clean and drinking water.
- iii. Navigability: fluvial transportation.
- iv. Irrigation system for agriculture (new 900.000 ha), industrial, recreational and fishery uses.
- v. Sediments monitoring: Sediments loadings in the Bermejo waters are some of the highest in the world; with a total discharge of sediment of 100 millions tons/year.



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1. Surface area: 123.000km²
2. River flows 1300 kms.
3. Located in the extreme southern portion of the Plurinational State of Bolivia (Tarija) and in northern Argentina (Salta, Jujuy, Formosa & Chaco).
4. Links two geographic features (Andean Cordillera and Paraguay- Parana Rivers and crosses the Chaco Plains)
5. Strategic location for the development of Del Plata River Basin.
6. Significant potential in terms of natural resources, variety of ecosystems and biodiversity.





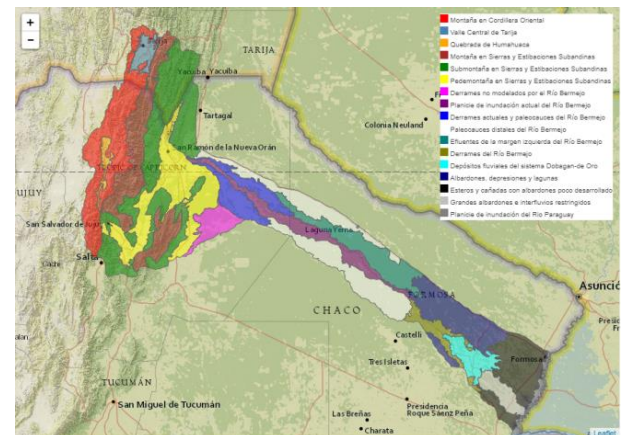
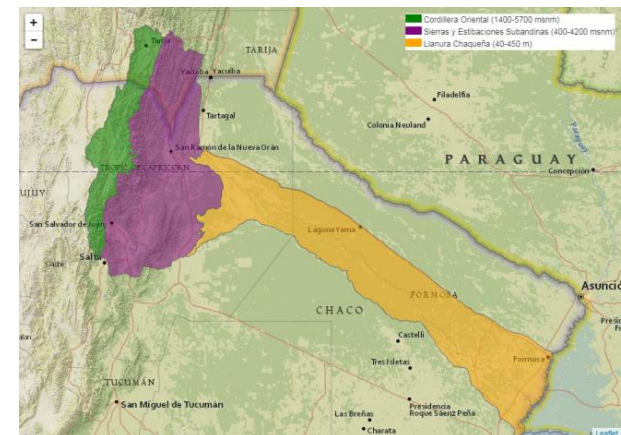
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7. Bermejo River: “Wild river” (floods during summer and droughts during winter seasons) and large socio-economic losses.

8. Radically differing weather and topographic conditions in the basin (rain forests- yungas, humid valleys, mountain deserts as well as dry forests and humid forests).

9. Sediments loadings in the Bermejo waters are some of the highest in the world; with a total discharge of sediment of 100 millions tons/year.



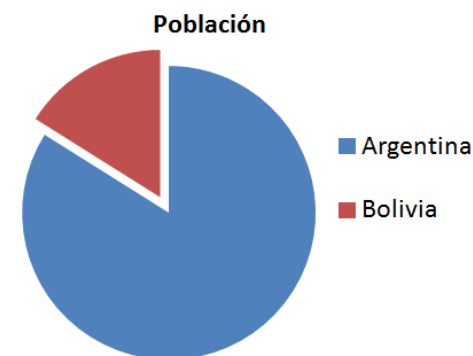


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• Population:

Estimated actually at 2.2 million:

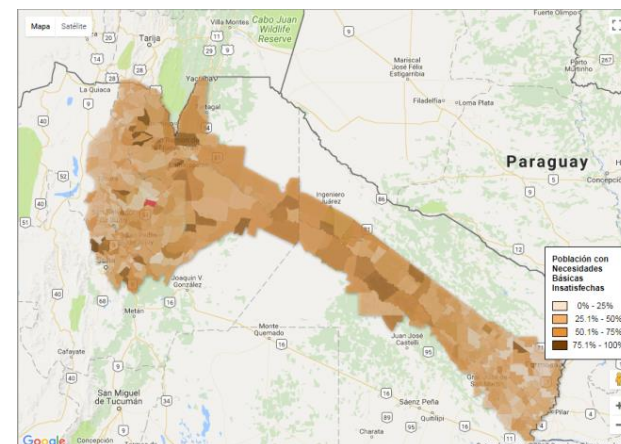
Argentina	1,84M	
• Jujuy:	720k	(39%)
• Salta:	570k	(31%)
• Formosa:	430k	(23%)
• Chaco:	120k	(7%)



Bolivia 360k in Tarija.

86% Urban; 14% Rural workers (small farmers and indigenous communities)*

Lowest level of income, education and sanitary conditions.



www.cobinabe.com.ar

*National Census 2010 (Argentina) & 2012 (Bolivia)



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Integration: Argentina- Bolivia

Multipurpose Water Resources Development Projects in the Upper Basin

- Arrazayal (465 GW/h) Bolivia / Argentina
- Pescado 2 (429 GW/h) Salta, Argentina
- Cambarí (481 GW/h) Bolivia



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Integration: Argentina- Bolivia

- Multipurpose Water Resources Development Projects objectives:
 - i. Water regulation.
 - ii. Renewable energy production.
 - iii. Drinking water access.
 - iv. Integrated development.
 - v. Expansion of agricultural frontiers.
 - vi. Fluvial transportation.
 - vii. Sediments monitoring.



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Integration: Argentina- Bolivia

Internacional and National Integration

“Mediterranean Hydrovia/waterway of the Bermejo River”

- Regional and fluvial integration of the northeast- northwest of Argentina. (impact over 600.000ha)
- Consolidation of the northern and southern region of Del Plata Basin.
- International integration with the Plurinational State of Bolivia (access to the Atlantic Ocean).



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Integration: Argentina- Bolivia

- **Agricultural frontiers expansion:**

900.000 ha more between the Upper and Lower Basin

Better conditions for agricultural and livestock development at the 600.000 new hectares.

Development of the “Cono Desertico”, semi arid region in Desarrollo del Salta, Formosa, Chaco, Santiago del Estero y North east of Santa Fe, due to water access (250.000km²).



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Integration: Argentina- Bolivia

Fluvial Transportation

- The system of barges sailing mobilises large volumes of shipments during 24 hrs.
- Cost per kilometre with capacity of 1000 tons is 15 times lower of track transportation and 5 times lower by train.
- Less pollution.



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Integration: Argentina- Bolivia

Local employment/job creation

- Poverty reduction and social exclusion
- Better life conditions
- Local migrations: people return to their home ancestral locations.



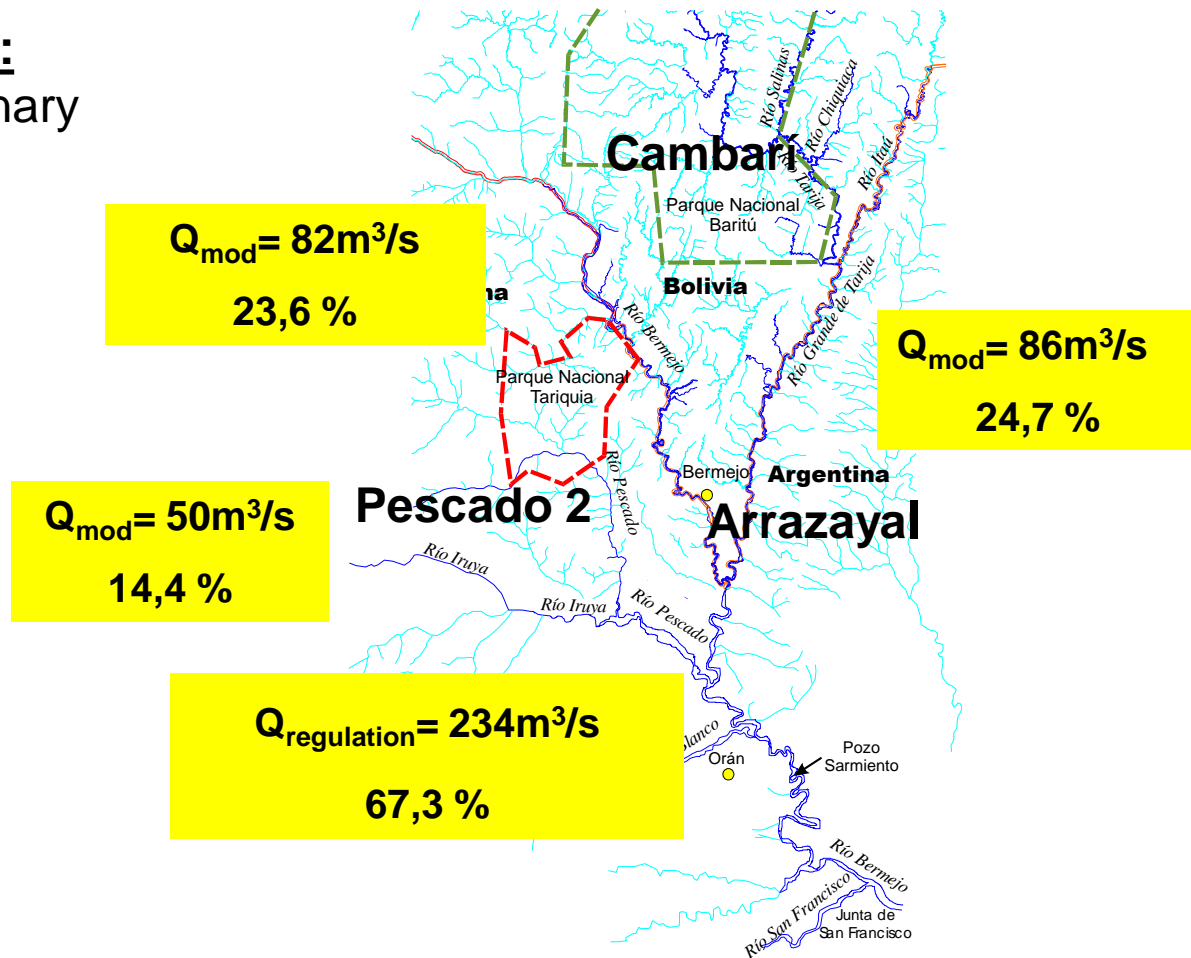
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Damns:
Preliminary
Data





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- Preliminary Data of Arrazayal

Presas tipo: hormigón rolado

Module	82m ³ /seg.
Design flow	7.600m ³ /seg
Reservoir volume	696Hm ³
Surface	2.776Ha.
High	100m
Power	93MW
Energy production	430GWh/year



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- **Preliminary Data of Pescado II**

Presa tipo: materiales sueltos

Module	50m ³ /seg.
Design flow	3.650m ³ /seg.
Reservoir volume	1.890Hm ³
Surface	4.440Ha.
High	120m
Power	68MW
Energy production	429GWh/año



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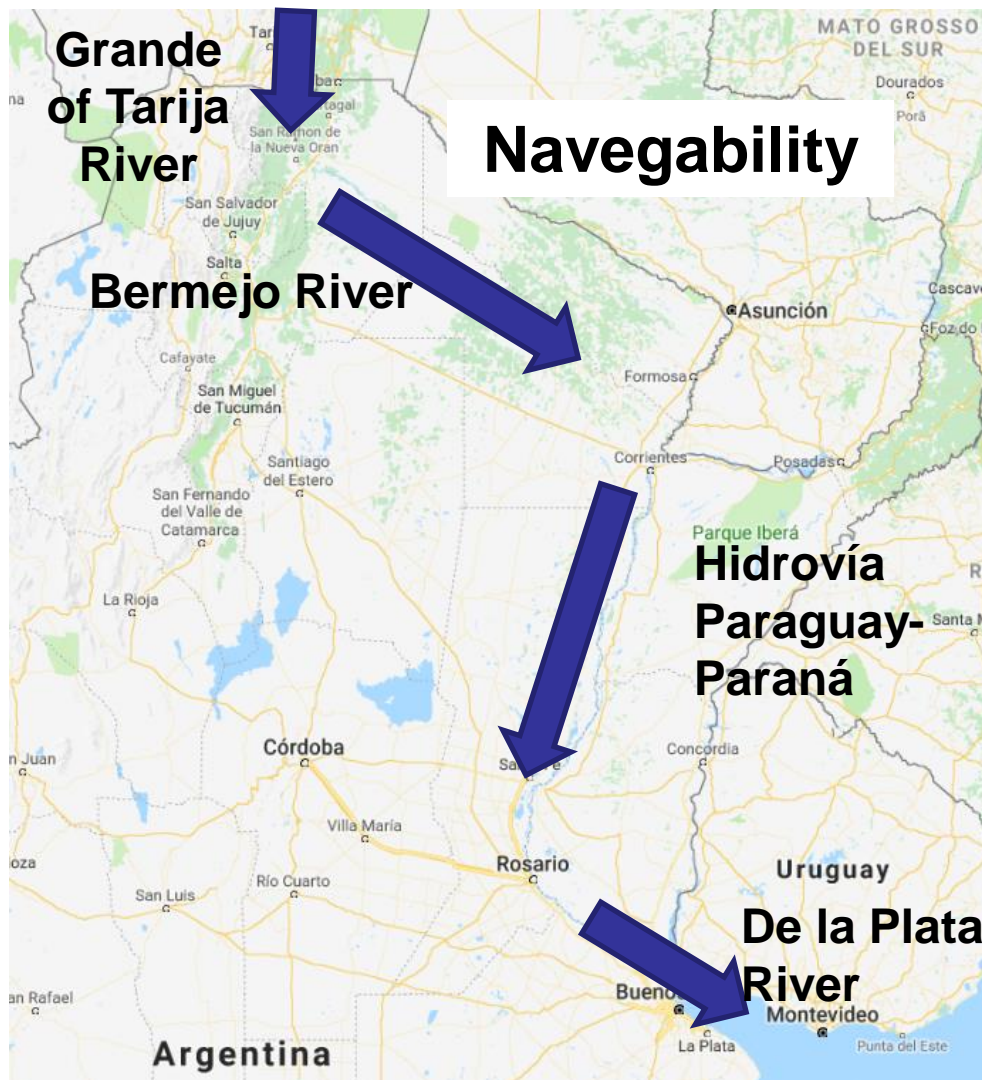
- **Preliminary Data of Cambarí**

Presa tipo: materiales sueltos

Module	86m ³ /seg.
Design flow	8.000m ³ /seg.
Reservoir volume	1.675Hm ³
Surface	3.800Ha.
High	140m
Power	93MW
Energy Production	530GWh/año



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GENERAL CONCLUSIONS FOR INTEGRATED MANAGEMENT OF RIVER BASINS

- I. Requires actions and policies that improve intersectorial coordination within different levels.
- II. Partnerships that encourage resilience, environmental management, productivity and social inclusion.
- III. Prevail political decisions on water security/policy.
- IV. Strengthen cooperation between regions.