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Entwicklungspolitik



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# Payment for ecosystem services in the context of the water-energy-food/land nexus: Whose water-energy and land/food security matters?

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Workshop C1: Politicization and Securization of the Nexus

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- Water-Energy-Land/Food (WELF)

Framework to understand the interactions (externalities) between water, energy and food systems and the different sectors and interest groups utilising these resources (Flammini et al. 2014).



- PES is a mechanism for addressing externality problems among different natural resource users.
- WELF nexus: **PES is considered as a mechanism to integrate and coordinate claims and interests of different sectoral actors.**
- **Payments for ecosystem services (PES) typifies the nexus approach** (Hoff et al. 2011 and EDR 2012).
- Private sector increasingly investing in water, renewable energy and land (ERD 2012)

- Analyse PES as a nexus managing instrument



# Hidrosogamoso PES – How it works

## Why pay?

- Forest protection for provision of water related ES (reduction of sedimentation; water quality and water quantity)
- Strategy for offsetting environmental impacts related to the construction and filling up of the dam

## Who gets paid?

- 27-41 peasant families for conserving forest around El Ramo watershed

## How much is paid?

- \$65 /ha/month
- 3 or more ha: \$195/month

## Who intermediates?

- Regional environmental authority and BanCO2



# Upstream communities (with respect to dam)

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BanCO<sub>2</sub>  
Servicios Ambientales Comunitarios

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BanCO<sub>2</sub> Aliados Familias Socias Proyectos Productivos Educación Ambiental Contacto

## > Familias Socias Guardianes de Nuestro Ecosistema

Departamentos Activos  
 Departamentos Inactivos

Departamento:

Municipio:

Autoridad Ambiental:

Otras Organizaciones:

Nombre Socio BanCO<sub>2</sub>:

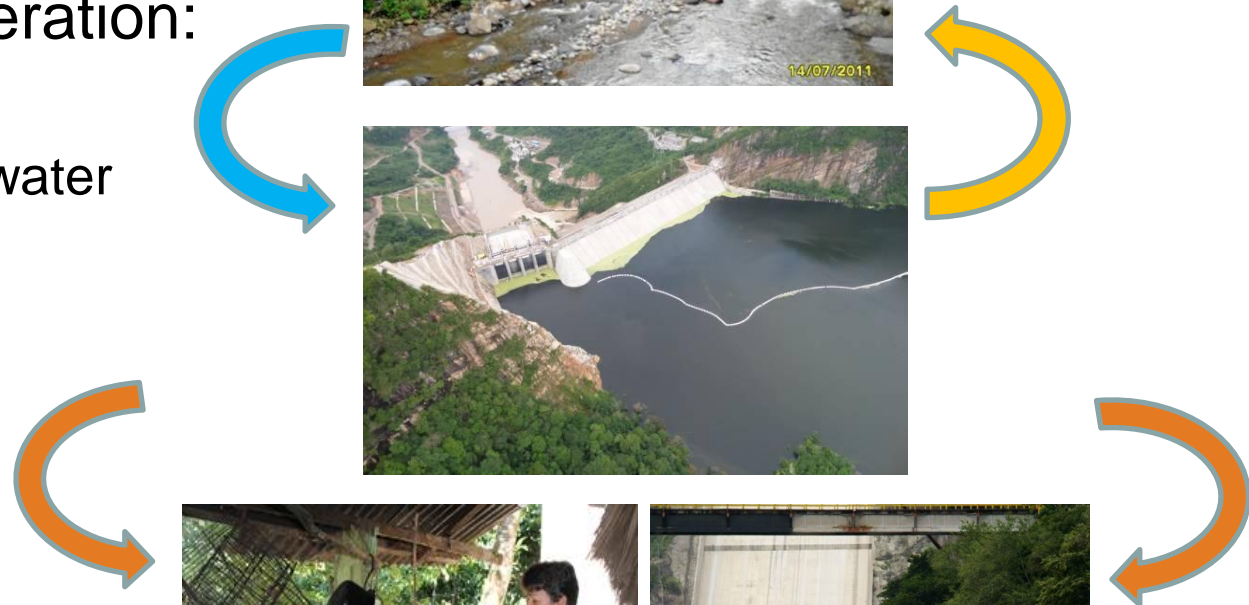
Fauna y Flora:

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<p>Leonel Izaquita Alonso</p> <p>Betulia, Santander CAR: CAS Área interés ecosistémica: 16.64 has.</p>	<p>Sergio Amaya Díaz</p> <p>Betulia, Santander CAR: CAS Área interés ecosistémica: 1.5 has.</p>	<p>Fredy Alexander Serrano Quintero</p> <p>Betulia, Santander CAR: CAS Área interés ecosistémica: 2.5 has.</p>	<p>Ismael Sandoval Ceron</p> <p>Betulia, Santander CAR: CAS Área interés ecosistémica: 2.7 has.</p>
<p>Teresa Sandoval Ceron</p> <p>Betulia, Santander CAR: CAS Área interés ecosistémica: 4.6 has.</p>	<p>Wilson Amaya Orejarena</p> <p>Betulia, Santander CAR: CAS Área interés ecosistémica: 16.67 has.</p>	<p>Nelson Prada Navarro</p> <p>Betulia, Santander CAR: CAS Área interés ecosistémica: 1.01 has.</p>	<p>Lazaro Villabona Jímenez</p> <p>Betulia, Santander CAR: CAS Área interés ecosistémica: 4.38 has.</p>
<p>Luis Alberto Corredor Oviedo</p>			

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- Focus on externalities related to energy generation:
  - Energy-food
  - Energy-land-water



# Downstream communities (with respect to dam)

Communities living in the influence area of the project  
dependence on:

- Fishing
- Restaurants and communal tourism
- Agriculture
- Sand and stones extraction
- Others...





- Externalities of land use upstream on the dam are internalized, and stakeholder participation enhanced, but
- Dam continues to generate externalities to water users further downstream (which have no voice in the process), negatively affecting
  - Water availability (deviation of water streams )
  - Water quality (cement and chemical material, debris)
  - Fish population
  - Decomposition of submerged biomass (GHG)



# Power company discursively framing their operation



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- Operation as clean energy, sustainable development
  - while breaking up existing socioecological relationships and aligning water users, rights, and uses in new hydro-political order (Duarte-Abadia et al. 2015)
- PES-conservation upstream helps to consolidate conservation engagement
  - while rendering invisible the downstream impacts and the people suffering them



- A more nuanced perspective on the potential of PES with respect to Nexus
- PES may integrate nexus governance at the upstream level,
  - however, contested when thinking about the frictions between conservation and food security of upstream communities.
- PES creates an artificial watershed boundary
  - starting from the headwater until water intake and operation of the environmental service buyers.
- Understanding power asymmetries is key in understanding whether nexus is implemented or if rather externalities and costs are pushed onto marginal societal sectors.
- ES buyers as privileged natural resource users

# Thank you for your attention!

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- How can negative externalities be addressed?
  - FPIC
  - EIA
  - Benefit-sharing schemes
  - Water pollution fees
  - Water use fees
  - PES + downstream compensations
- PES at a small scale
  - Upstream food security impacts