



ITaipu Binacional

Water, Energy, Food and
Ecosystem Nexus

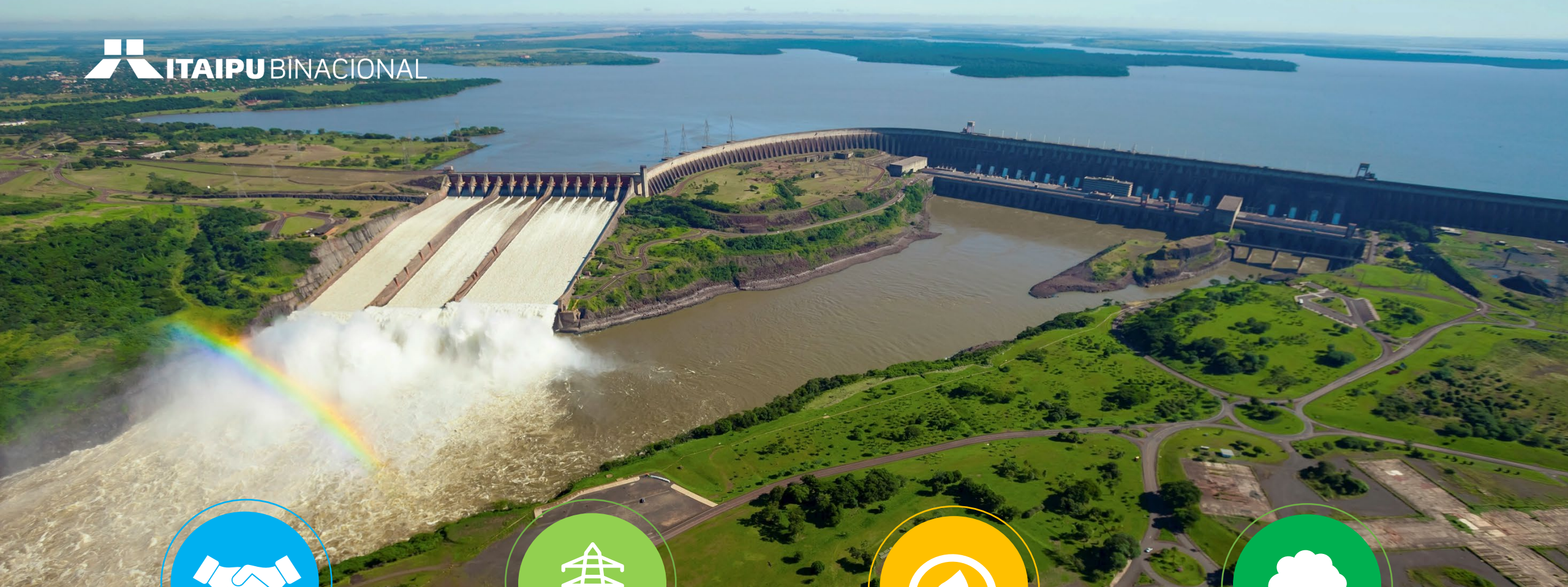


WHERE WE ARE

Itaipu Dam



Iguaçu falls



Binacional

Provides 10% of the energy consumed in Brazil and 90% in Paraguay



Capacity

14,000 MW of installed capacity



Production

World leader in clean and renewable energy generation

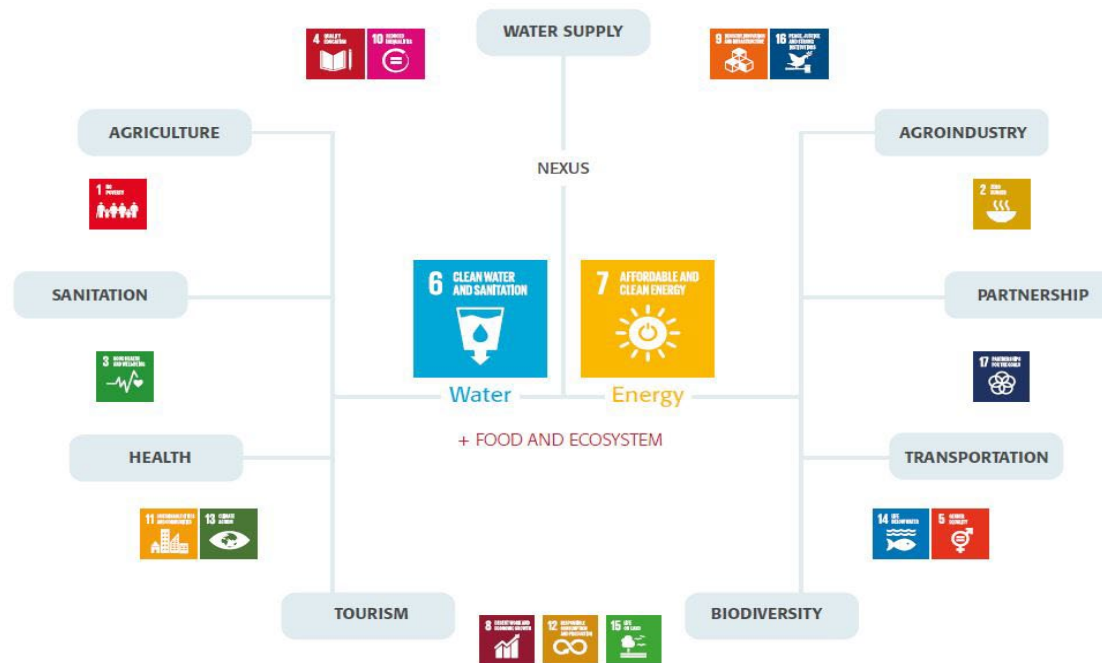


Strategic axes

Water security, sustainable territorial development and power generation

Our actions in the SDGs

Our approach - Integrated actions in the territory



The Water and Energy Interlinkages

6 CLEAN WATER AND SANITATION



101 THOUSAND HA
of protected areas



More than
1300 km
of fence to protect
riparian forest



14 WATER CISTERNS
in public areas and
rural properties to
reuse water for
non-potable purposes

**198 Installation of
COMMUNITY WATER SUPPLY**
for proper handling of
chemical pesticides, avoiding
pollution of water resources



76 STATIONS
for monitoring water and sedimentation



SUPPORT TO 52 MUNICIPALITIES
to elaborate
environmental
sanitation plans



More than **1000 KM**
of adequacy
of rural roads



**Sustainable
Regional Development**



187 RURAL PROPERTIES
with access to the water from
the reservoir for irrigation and
water supply for animals

Annual fixation
5,9 MILLION TONS
of CO₂
by forest
biomass



**RECOVERY
217
MICRO-WATERSHEDS**



55 HEADWATERS
Recovery and protection



7 AFFORDABLE AND CLEAN ENERGY



20 GENERATING UNITS
clean and renewable energy



14 THOUSAND Mw
of installed capacity



103.098 GWh
World record in annual
generation in 2016



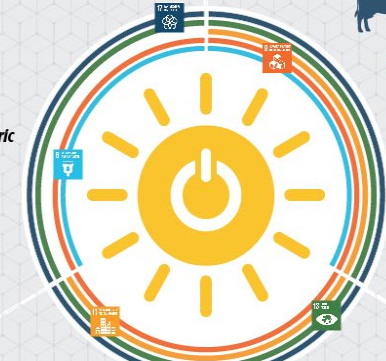
EQUIVALENT TO
560 thousand barrels of oil
50 million m³ of natural gas

AVOIDS THE EMISSION OF

87 million tCO₂e
mineral coal
38 million tCO₂e
natural gas



**The Hydroelectric
Power Plant**



Sustainable Mobility



ITAIPU FLEET
106 electric vehicles - Avoids
the emission of 28,1 tCO₂e
87 biomethane vehicles



Fully electric
minibus



Hybrid bus powered
electricity and ethanol



Electric utility car
with 4x4 traction



Electric urban
truck for light load



First manned electric
aircraft in Latin America

**Energy storage system
with sodium battery**
Domain of domestic
production technology
of sodium battery



**Implementation
of photovoltaic systems**
rural properties and remote
communities of Paraguayan Chaco



**Other Renewable
Sources**

Implantation of
6 units
of biogas generation
Produce annually
790 thousand m³ biogas
160 thousand m³ biofertilizers



Biogas Demonstration Unit
potential to produce 15.000 m³/month



SUPPLIES
87 corporate vehicles
PRODUCES
10 thousand liters biofertilizer



**Dissemination
of knowledge**
1500 TRAINED PEOPLE
27 COUNTRIES



**Construction of
SOLAR THERMAL PARK**
Installation of 56 solar
heaters for 112 homes



Effectiveness and innovative aspects of our investments:

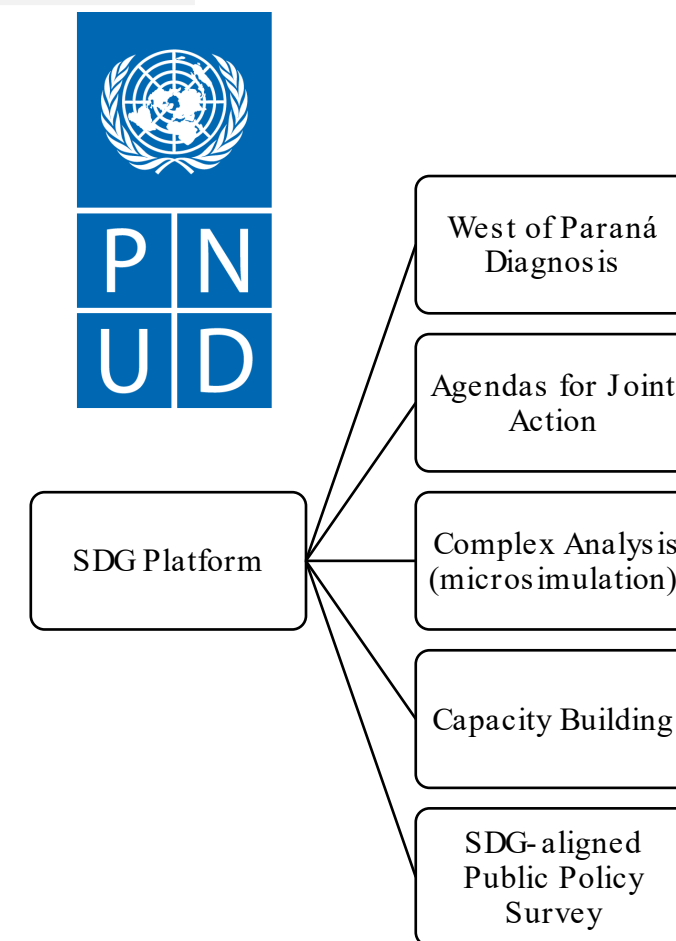
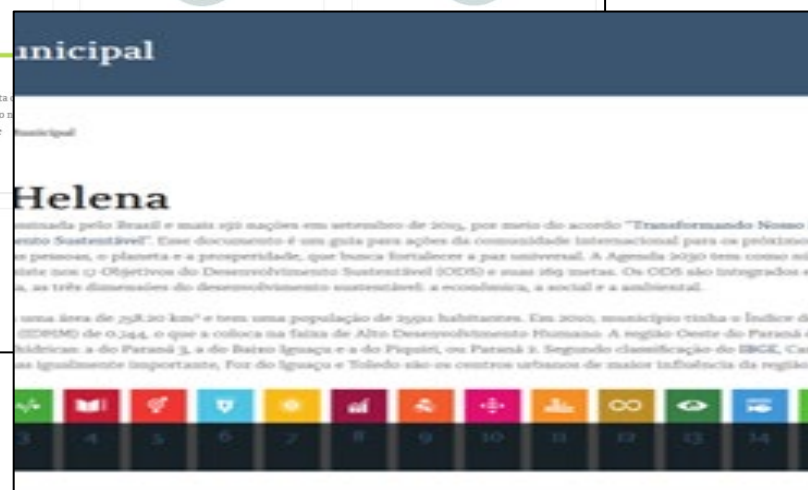
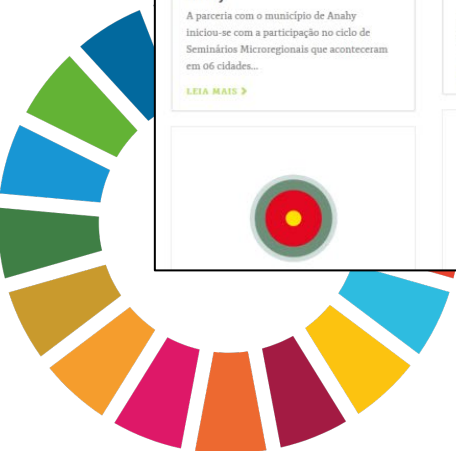
- A **territorial approach for sustainable development** – investing for long term company sustainability and life span
- ITAIPU has a **binational** commitment to the DSGs Targets;
- **Partnership is crucial** to our success: governments, NGO`s, and ;
- **Co-financing** as an important commitment mechanism;



Territorialization of the SDGs in the West Paraná State

First project to develop SDG city indicators in Brazil

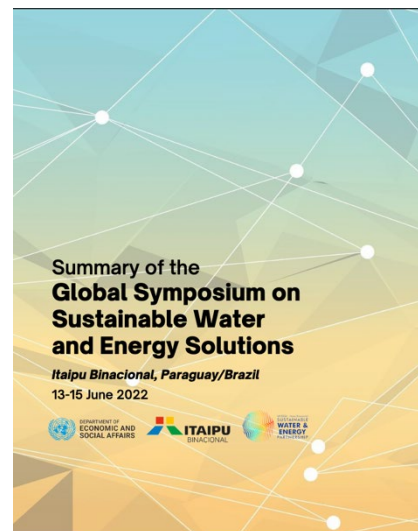
Regional indicators with the level of development of municipalities in relation to each SDG for action planning, development of public policies and direction of investments.



ITAIPU and UNDESA Partnership



SUSTAINABLE
**WATER &
ENERGY**
SOLUTIONS
NETWORK



Session 1: Opening Session



Session 2: Sustainable Water and Energy Solutions & Energy Case Studies

Session 3: Sustainable Water and Energy Solutions & Water Case Studies

Session 4: Sustainable Water and Energy Solutions - Environmental Interconnections Climate Change

Session 5: Sustainable Water and Energy Solutions - Water and Energy Transboundary Cooperation and Environmental Interlinkages

Session 6: Sustainable Water and Energy Solutions - Social Interlinkages

Session 7: Sustainable Water and Energy Solutions - Economic Interlinkages

Effectiveness and innovative arrangements of our Nexus investments:



- **Long term investment** in Brazil and Paraguay – strong community participation and cooperation

Results

- About 101,000 hectares of forests surround the Reservoir, **enhancing resilience** to climate change on the largest hydropower sector reforestation effort in Brazil and Paraguay;
- The **fixation of CO₂** in the biomass of ITAIPU's Protected buffer zone and reserves is approximately **23 times higher than its emissions** related to the three scopes of the GHG Protocol;

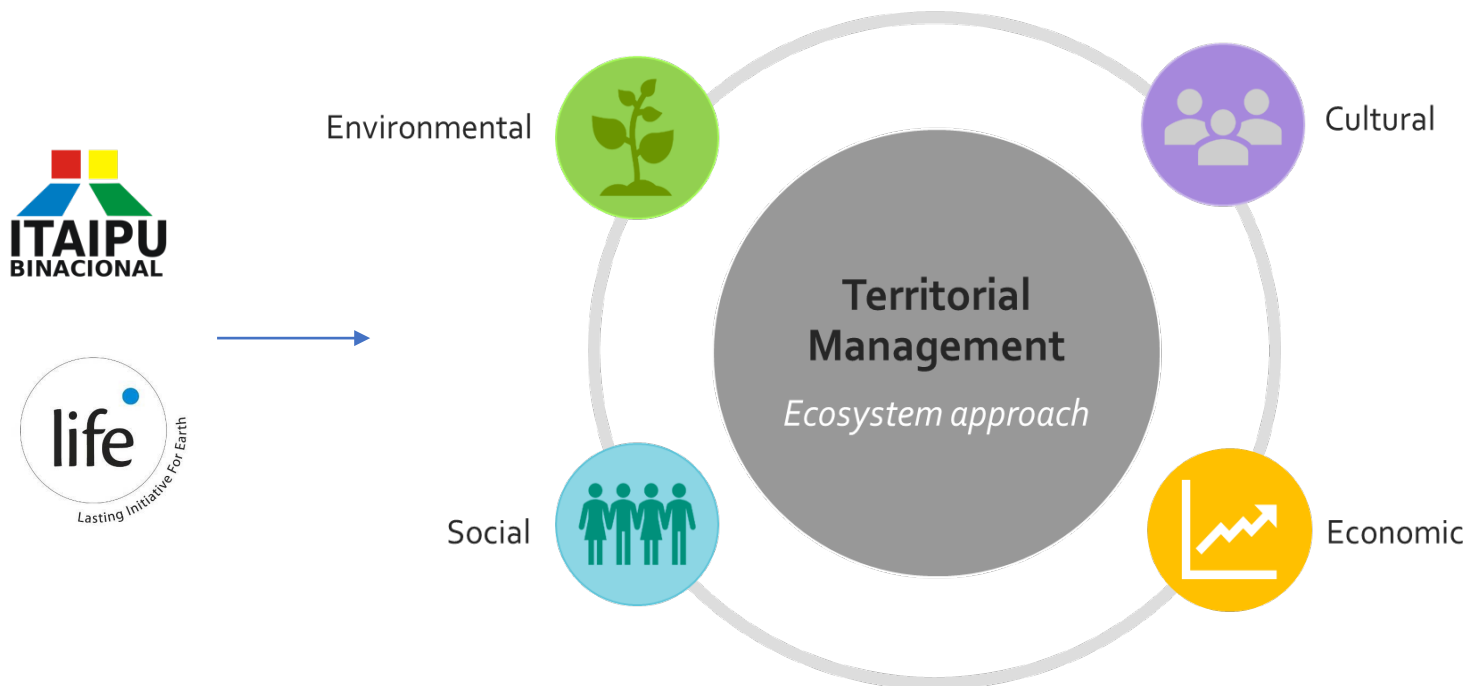
Effectiveness and innovative arrangements of our Nexus investments:



- Biodiversity Programs in Paraguay and Brazil works on the conservation from plants and pollinators to large predators, has an important genetic bank of 36 endangered species from Atlantic Forest;
- Reduction of greenhouse gas emissions. The targets include a reduction in the consumption of fossil fuel in ITAIPU's own fleet of vehicles and of electricity consumption of 1.5%;
- Sustainable Fleet composed of 106 electric vehicles and 86 biomethane vehicles;
- More than 270 projects with local partners in all the SDGs and ESG fronts.

How to measure Territorial Sustainability Success?

International Standard for Sustainable Territorial Management



Working groups and Thematic Axes:

- Resilience to Climate change
- Environmental Economy
- Landscape Management
- Sustainable agriculture
- Biodiversity Conservation
- Food safety
- Risk management
- Smart and sustainable cities
- Cultural heritage
- Traditional Communities
- Watersheds
- Industry and production
- Infrastructure

Standard based on
internationally recognized
principles, criteria and indicators.

Partners





Thank you

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