

ITAIPU BINACIONAL AND THE SUSTAINABLE DEVELOPMENT GOALS OF THE 2030 AGENDA



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ITAIPU BINACIONAL

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ITAIPU AND THE SDGs





INTRODUCTION

Itaipu Binacional is a Brazilian and Paraguayan hydroelectric plant, a global leader in the generation of clean and renewable energy, having produced nearly 3 billion megawatt-hours (MWh) since 1984 – enough to power the planet's consumption for 46 days.

Located on the border between the two partner countries, Itaipu has 20 generating units with a combined installed capacity of 14,000 MW. In 2022, the hydroelectric plant was responsible for supplying 8.7% of all the electricity consumed in Brazil and 86.4% in Paraguay.

Established in 1974, the company has become a strong symbol of integration between Brazilians and Paraguayans and has overcome numerous challenges, in terms of engineering and in legal, financial, and diplomatic aspects.

Over time, Itaipu has broken successive records in energy generation. In 2016, it reached an annual mark of 103,098,366 megawatt-hours (MWh), its best production and the largest in the world at that time. In recent years, the plant has exceeded its own productivity index, which is based on achieving the maximum utilization of water for energy production. Today, the plant is relevant not only for its production. With the growth of new renewable sources, particularly intermittent generation sources like solar and wind, hydroelectric plants such as Itaipu also serve as a kind of "battery" for the electrical grid.

For Brazil, its installed capacity and quick response provide security to the National System Operator (ONS). When needed, the plant can rapidly respond to peak demand, even when solar and wind farms decrease their production (due to a lack of sunlight or wind, for example). Thus, Itaipu remains a guarantee for consumers, both in the present and the future.

In 2024, Itaipu hosts the 15th Ministerial Meeting on Clean Energy, the 9th Ministerial Meeting of "Mission Innovation", and the G20 ministerial meeting. These events take place in the year when Brazil holds the presidency of the group, which brings together the world's major economies.

The choice is due to the extensive activities of the company, which go far beyond energy generation and are reflected in initiatives related to each of the 17 Sustainable Development Goals (SDGs) that make up the



2030 Agenda. In recent decades, the binational entity has become one of the main drivers of economic and social development in the border region between the partner countries and has established itself as a reference in environmental conservation, becoming a global icon of sustainable hydropower.

Environmental concern has been part of Itaipu's history. With the formation of the reservoir, the company invested in creating a green belt of over 100,000 hectares of preserved Atlantic Forest. There are eight biological reserves and refuges in both countries, totaling 45,000 hectares, including the reservoir protection zone. These areas are recognized by UNESCO as a Biosphere Reserve, making Itaipu the only hydropower plant in the world with this title. On the Brazilian side alone, Itaipu has planted 24 million trees. On both shores, the estimate is 44 million.

In addition to reforestation and reservoir protection, another measure to reduce and offset the impacts caused by the project's implementation was the royalty system, paid to the national treasuries of both countries in accordance with their respective legislation. Royalty payments began in March 1985. Since then, the governments of Brazil and Paraguay have jointly received over US\$13 billion. Itaipu's mission incorporates social and environmental responsibility, which is translated into various programs focused on the environment, the development of new technologies, local communities around the plant and the reservoir, tourism, and regional infrastructure improvements, contributing to job creation and income generation.

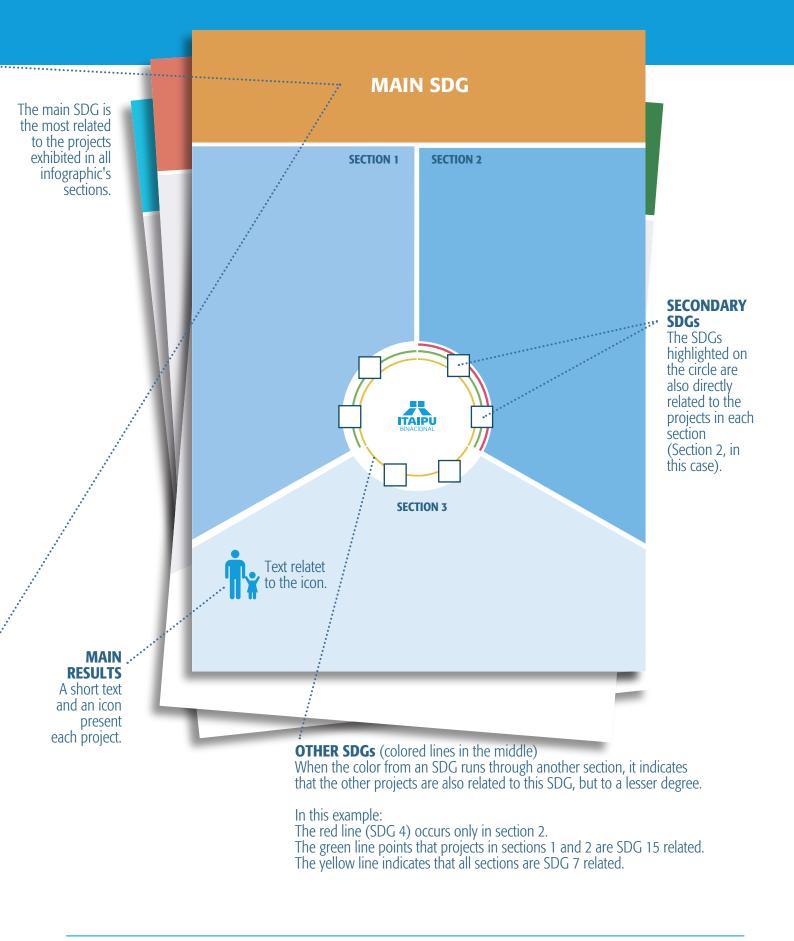
In 2023, the Brazilian side of the plant expanded the scope of its socio-environmental actions to cover 434 municipalities, encompassing the entire state of Paraná and the southern part of Mato Grosso do Sul, with the "Itaipu Mais que Energia" (Itaipu: More than Energy) program.

In this publication, through infographics, Itaipu provides an update on its key contributions to advancing the 17 SDGs within the Brazilian area of the plant's operations. For a better understanding of each infographic, please refer to the illustration that follows.

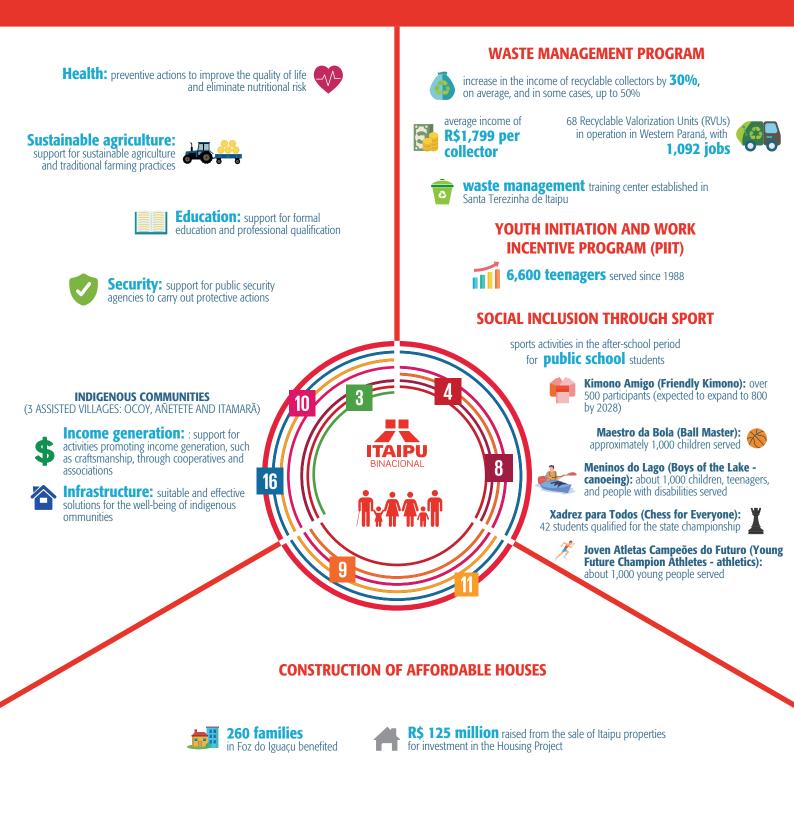




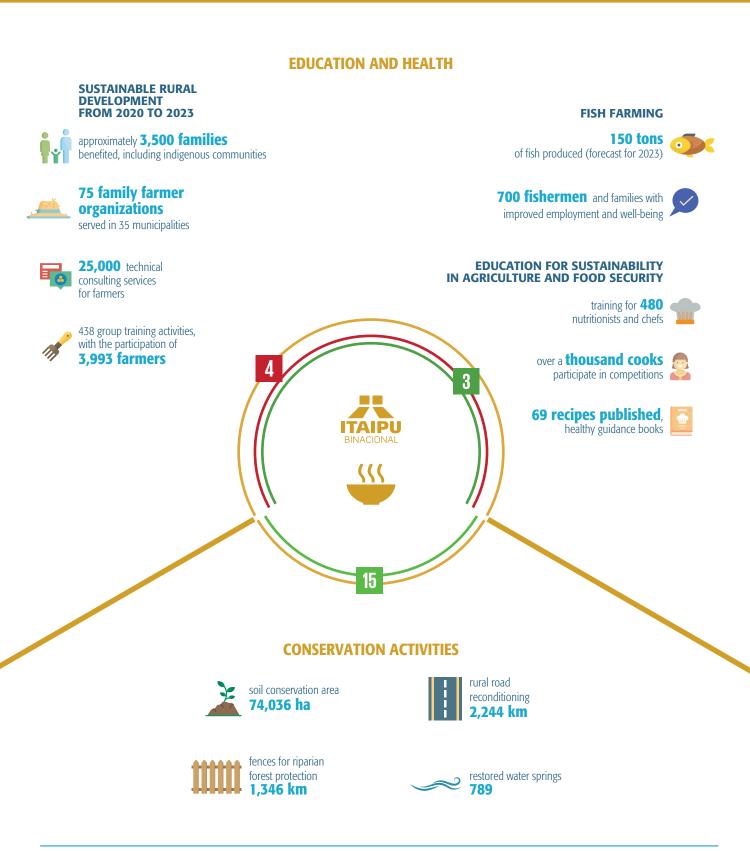
HOW TO READ THE INFOGRAPHICS



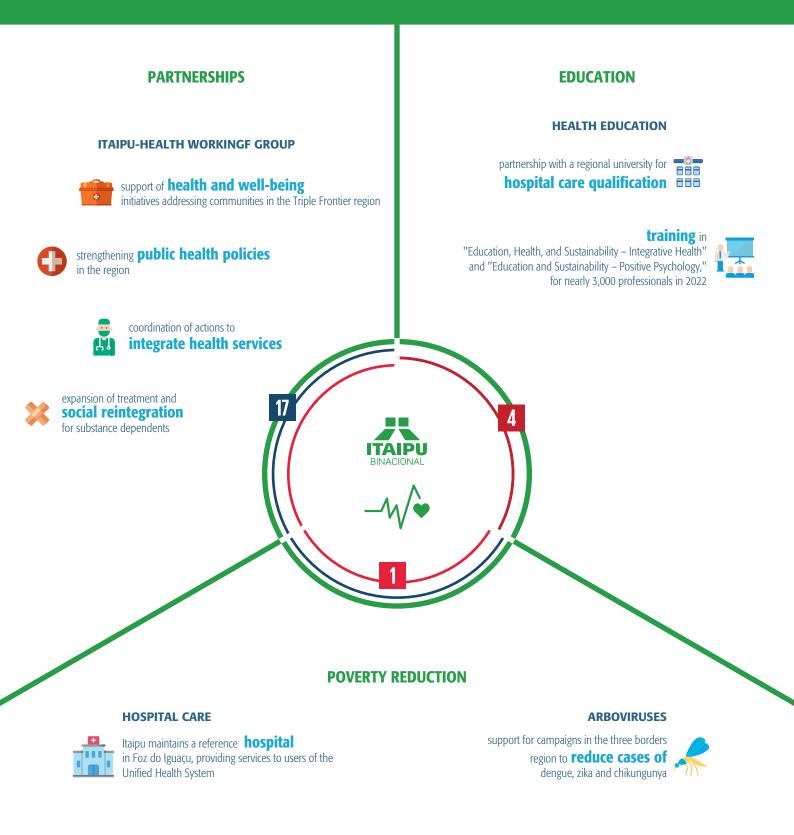
SDG 1: NO POVERTY



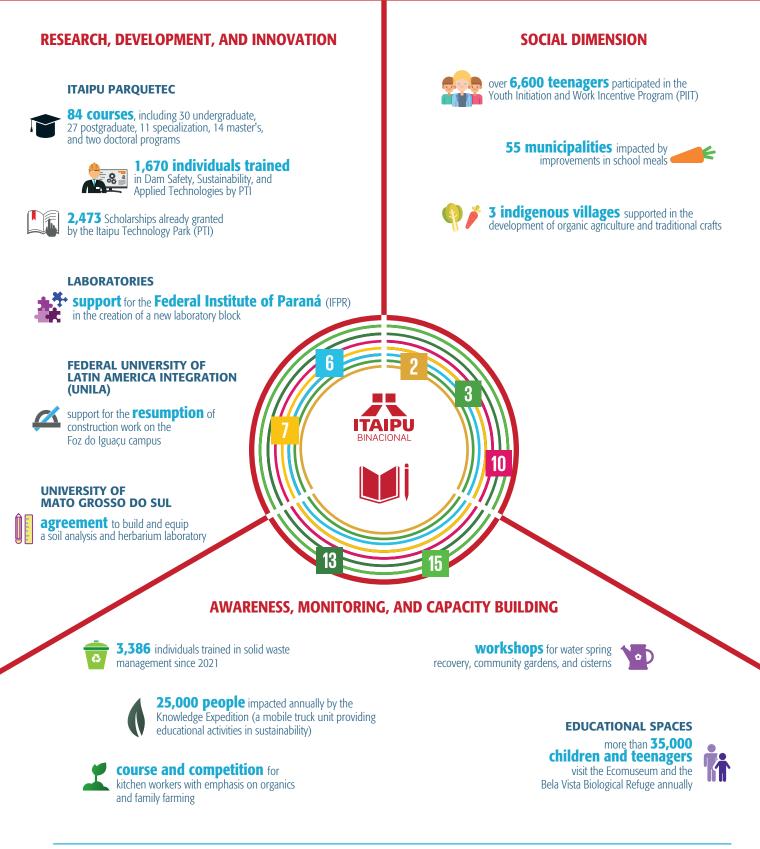
SDG 2: ZERO HUNGER



SDG 3: GOOD HEALTH AND WELL-BEING



SDG 4: QUALITY EDUCATION



SDG 5: GENDER EQUALITY

PROMOTION OF GENDER EQUITY

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organizing the 1st Latin American Women Integration Meeting, with 1,400 women

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establishment of the **Gender, Race, and Inclusion Committee** to expand institutional actions



support in developing policies for Gender and Racial Equity and Combatting Harassment and Discrimination within the Ministry of Mines and Energy

modification of requirements for filling positions by women, black and brown individuals, and Persons with Disabilities (PwDs) in Itaipu's **selection processes** **EDUCATION AND PEACE**

Hangar Women Program, for training, support, and investment in promoting women's entrepreneurship



internal communication

campaign to appreciate female employees at Itaipu

GENDER AND DIVERSITY OBSERVATORY IN LATIN AMERICA AND THE CARIBBEAN

in 2023, it began to include a representative from Itaipu; associated with UNILA, it serves as a space for **collaboration** in research, teaching, and extension on the topics of Gender, Public Policies, and Diversity in Latin America and the Caribbean



PROTECTION OF WOMEN AGAINST VIOLENCE



investment of **US\$ 636 thousand** in the new Women's Police Station and Identification Institute in Foz do Iguaçu

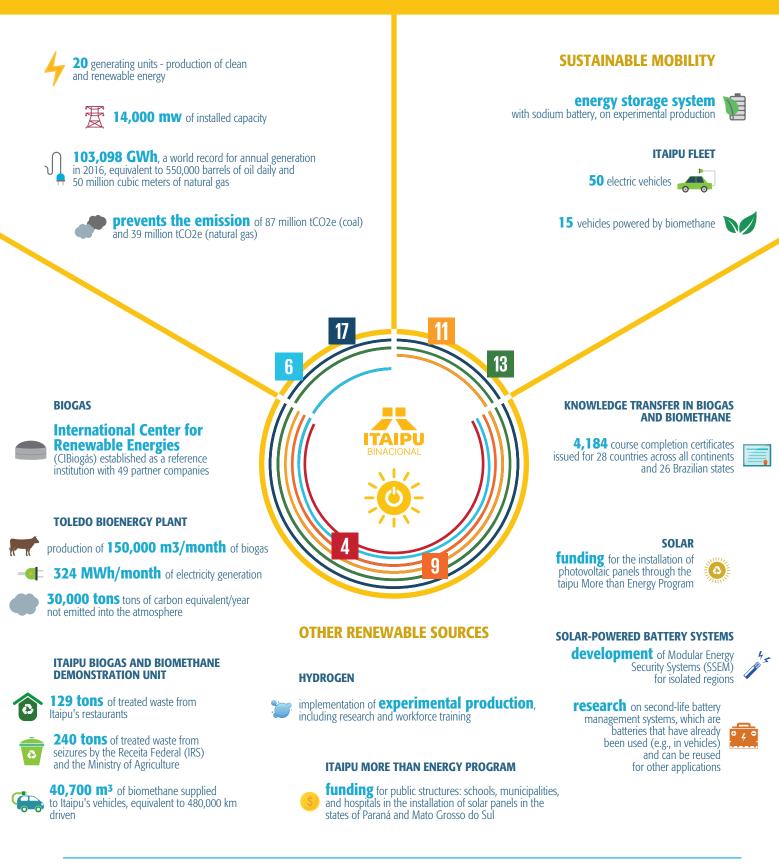


investment of **US\$ 1.81 million** in the Casa da Mulher Brasileira (Brazilian Women Home), for victims of domestic and family violence in the Triple Frontier region

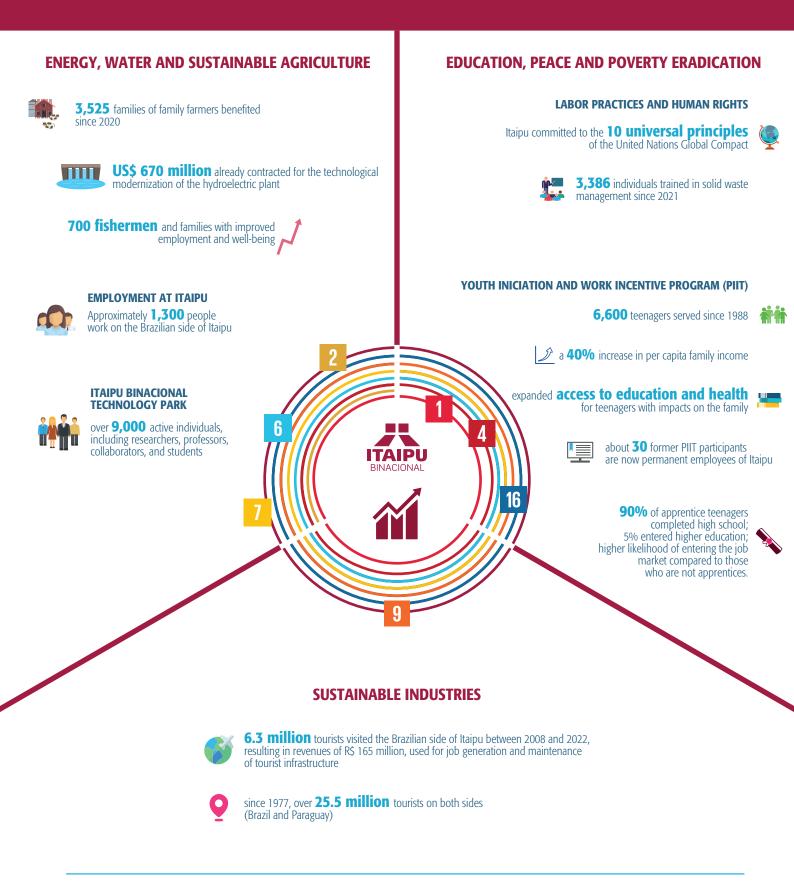
SDG 6: CLEAN WATER AND SANITATION



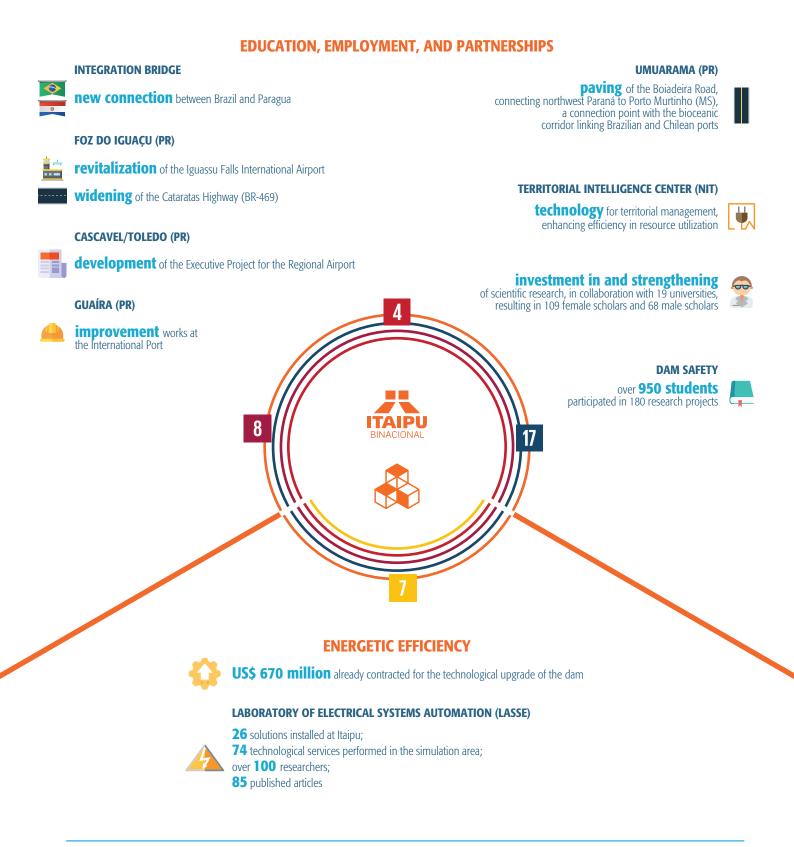
SDG 7: AFFORDABLE AND CLEAN ENERGY



SDG 8: DECENT WORK AND ECONOMIC GROWTH



SDG 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE

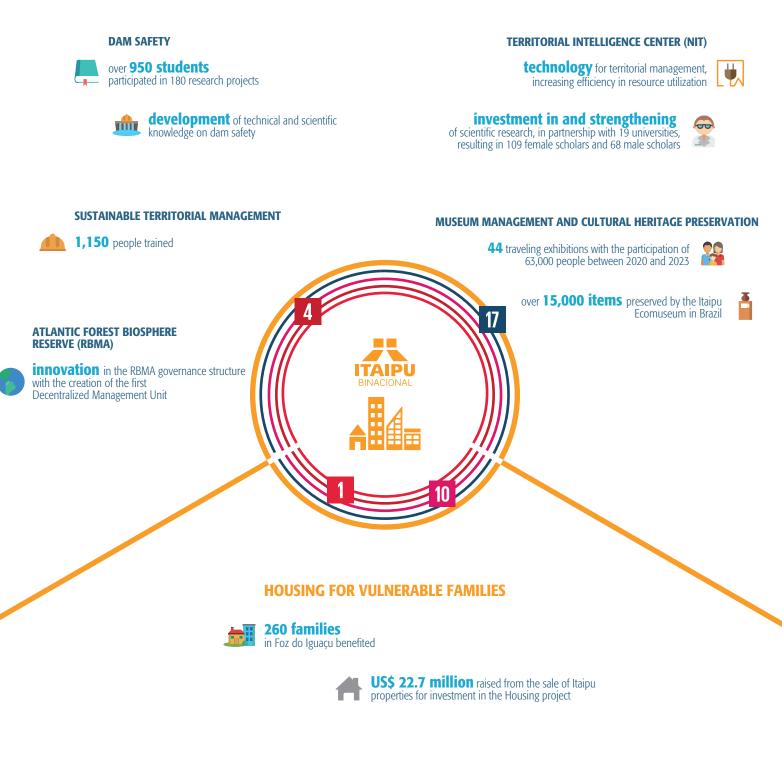


SDG 10: REDUCED INEQUALITIES

OPPORTUNITIES FOR EDUCATION AND LEARNING	ECONOMIC GROWTH			
CHILD AND ADOLESCENT PROTECTION PROGRAM (PPCA)	3,386 people trained in solid waste management since 2021			
Kimono Amigo (Friendly Kimono): over 500 participants (expected to expand to 800 by 2028)				
Maestro da Bola (Ball Master): approximately 1,000 children served	3 indigenous villages with increased income through organic farming and traditional crafts			
Meninos do Lago (Boys of the Lake - canoeing): about 1,000 children, teenagers, and people with disabilities served				
Xadrez para Todos (Chess for Everyone): 42 students qualified for the state championship	150 tons of fish produced per year by artisanal fishermen with technical assistance			
Joven Atletas Campeões do Futuro (Young Future Champion Athletes - athletics): about 1,000 young people served	from Itaipu: courses for up to 100 fishermen in 2023			
2,473 scholarships already granted by Itaipu Technology Park (PTI)				
INCLUSION				
6,600 adolescents served since 1988; 40% increase in per capita family income; expanded access to education and adolescent health with impacts on the family				
around 30 former me	embers of PIIT are now permanent employees of Itaipu			
90% of apprentice adolescents completed high school; 15% entered higher education; higher likelihood of entering the job market compared to those who are not apprentices				

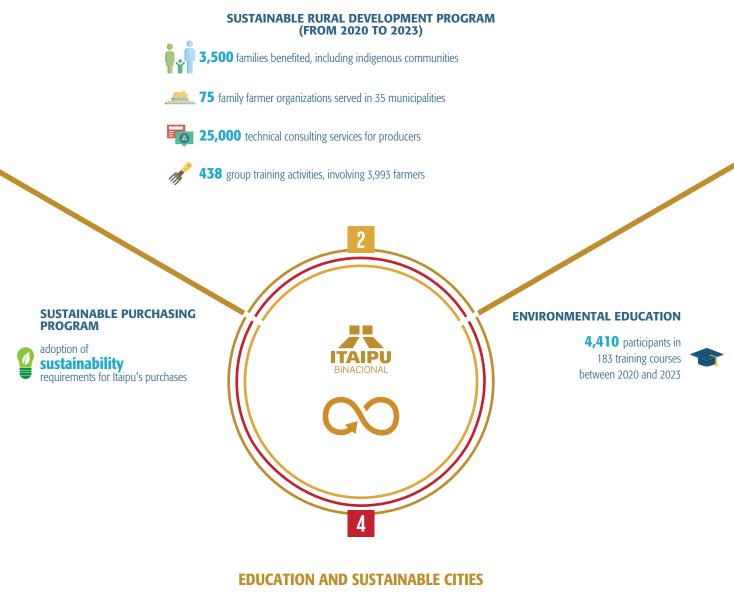
SDG 11: SUSTAINABLE CITIES AND COMMUNITIES

EDUCATION AND PARTNERSHIPS



SDG 12: RESPONSIBLE CONSUMPTION AND PRODUCTION

SUSTAINABLE AGRICULTURE



SOLID WASTE MANAGEMENT



3,386 people trained since 2021

SDG 13: CLIMATE ACTION

AIPU

BINACIONAL

RENEWABLE ENERGY SOURCES

ITAIPU

20 generating units with 14,000 MW of installed capacity **103,098 GWh**, a world record for annual generation in 2016, equivalent to 550,000 barrels of oil daily and 50 million m³ of natural gas avoids the emission of 87 million tCO2e (coal) and 9 million tCO2e (natural gas)

TOLEDO BIOENERGY PLANT

production of **150,000 m³/month** of biogas **324 MWh/month** of electricity generation **30,000 tons** of equivalent carbon/year not emitted into the atmosphere

BIOGAS AND BIOMETHANE AT ITAIPU

129 tons of treated waste from restaurants



240 tons of treated waste from seizures by the Receita Federal (IRS) and Ministry of Agriculture

40.7 million m³ of biomethane supplied to Itaipu's vehicles, equivalent to 480,000 km traveled

HYDROGEN

implementation of **experimental** production, including research and workforce training

ITAIPU MORE THAN ENERGY PROGRAM

funding for public structures: schools, municipalities, and hospitals installing photovoltaic panels in the states of Paraná and Mato Grosso do Sul

KNOWLEDGE TRANSFER IN BIOGAS AND BIOMETHANE

4,184 course completion certificates issued to 28 countries on all continents and 26 Brazilian states

implementation of **biodigesters** as educational demonstration units in all 399 municipalities in the states of Paraná and 35 in Mato Grosso do Sul

SOLAR-POWERED BATTERY SYSTEMS

development of Modular Energy Security Systems (SSEM) for isolated regions

research on second-life battery management systems, which are batteries that have already been used (e.g., in vehicles) and can be repurposed for other applications



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173 integrated stations





over 34 thousand hectares of Atlantic Forest preserved on the Brazilian side



over **24 million trees** planted since the 1980s

1.346 km of fences installed for the protection of riparian forests

management of two conservation units in Paraná and one binational management unit in Mato Grosso do Sul

conservation

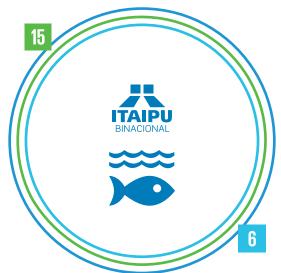
actions in the Santa Maria Ecological Corridor and the Paraná River **Biodiversity Corridor**

SDG 14: LIFE BELOW WATER

WATER AND TERRESTRIAL ECOSYSTEMS

AQUACULTURE MANAGEMENT PRACTICES





FISH PRODUCTION WITH BIOFLOCS

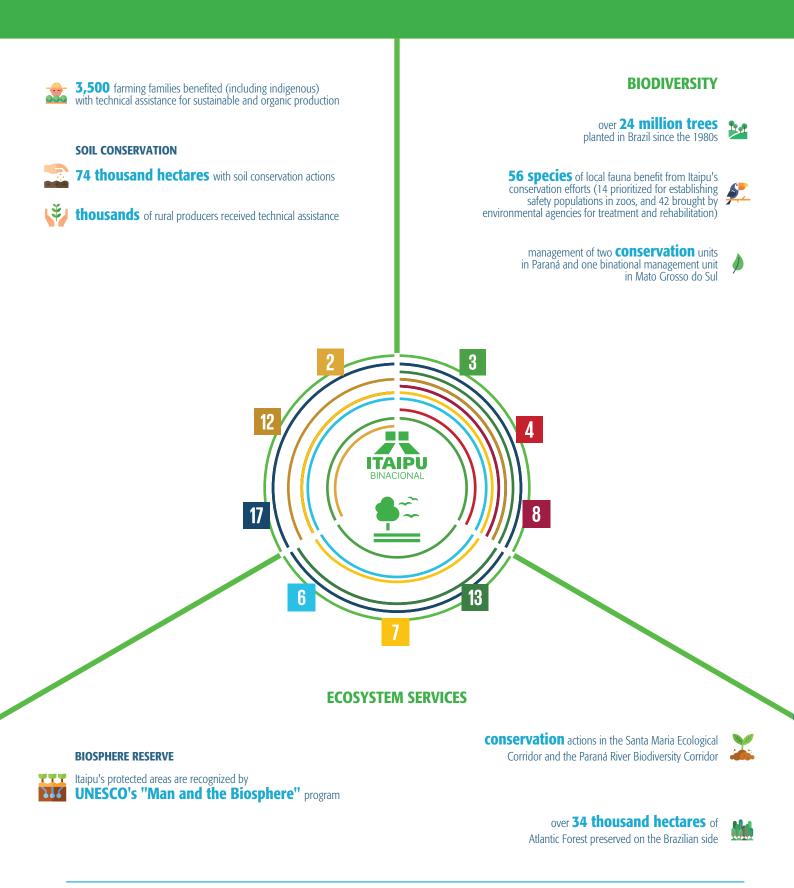
experimental production for the dissemination of good practices and technologies

MICROPOLLUTANT MONITORING PROJECT



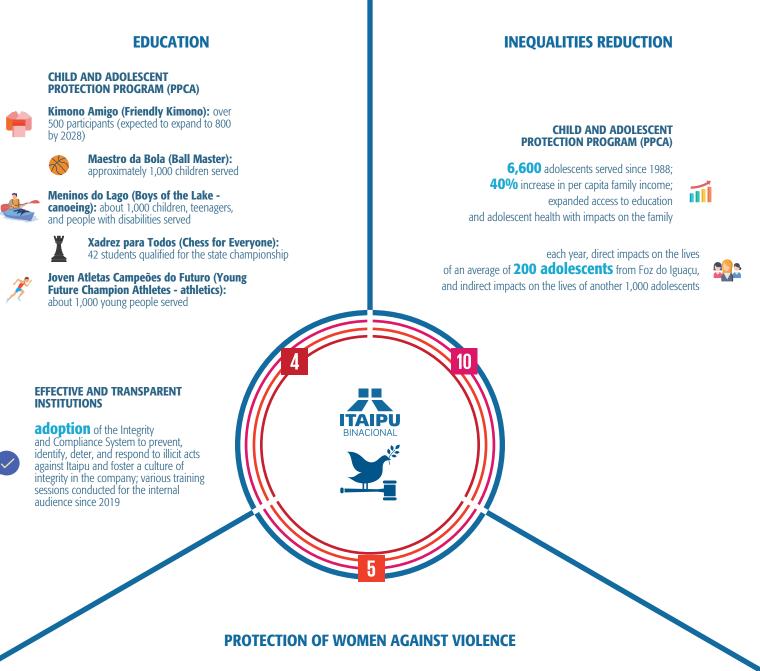
24 micro-watersheds monitored (12 Brazilian and 12 Paraguayan); 43 pesticides identified, with 36 in Brazilian micro-watersheds, 28 in Paraguayan micro-watersheds, and 21 in both countries

SDG 15: LIFE ON LAND





SDG 16: PEACE, JUSTICE AND STRONG INSTITUTIONS





investment of **US\$ 636 thousand** in the new Women's Police Station and Identification Institute in Foz do Iguaçu



investment of **US\$ 1.81 million** in the Casa da Mulher Brasileira (Brazilian Women Home), for victims of domestic and family violence in the Triple Frontier region







