Making community-based conservation sustainable: an indigenous-led tree nursery for hooded capuchin conservation.

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Project Background.

The hooded capuchin monkey (*Sapajus cay*), Paraguay's only capuchin species, is Vulnerable to extinction. The biggest threat to this species in Paraguay is the extreme level of habitat loss. The species is mainly restricted to the remaining Upper Paraná Atlantic Forest, more than 91% of which has been cleared to make way for industrial agriculture. At present, the main constraint on population recovery is the available habitat. The forest is not being selectively logged but completely cleared and the monkey cannot survive in land where all forest has been removed (Smith and Lusseau, 2022).

Between 2000 and 2019, 58 % of the remaining Upper Paraná Atlantic Forest in Paraguay was cleared. 15 of these 19 years were (on paper) covered by the Zero Deforestation Law that makes it illegal to clear Atlantic Forest) (Smith and Lusseau 2024). Overall this left only around 9,000km^2 of the original 86,000km^2 and in a highly fragmented condition. Since 2019, the destruction of the forest has actually accelerated, with forest fires, clearing for industrial agriculture, illegal marijuana plantations and land seizures continuing to devastate what little remains. The situation in Paraguay is so extreme, the country is predicted to be the first in the world to lose ALL of its moist forests, by 2028, that conserving what remains will not be enough, targeted reforestation efforts are needed on historically cleared land.

The conservation issues are compounded by high levels of extreme poverty in rural areas. Sustainable and equitable conservation of wildlife must take into account these social issues. The Mberu Pirapo'i Mbya Guaraní indigenous community is extremely impoverished, with some families income as low as $20/month for 10 people. Many people have had no choice but to rent their land to soy companies. Together, Fundación Para La Tierra and Mberu Pirapo'i are implementing a collaborative reforestation programme, with the hooded capuchin as its flagship species. Unused and historically deforested land in Mberu Pirapo'i is being reforested with a mixture of 14 different species that we have identified as important for the capuchin monkey (Smith et al. 2018; Smith 2021; Smith et al. 2022) and yerba mate (*Ilex paraguariensis*). Yerba mate is endemic to the Atlantic Forest and is a lucrative cash crop, its leaves being harvested for a tea popular across South America and will provide a sustainable alternative income for the people of Mberu Pirapo'i.

Project Goals

In order to restore as much hooded capuchin habitat as possible while making a significant contribution to poverty reduction our long-term goal is to expand this project. We currently have two more Mbya Guaraní communities (whom we have worked with in an environmental education programme since 2021) who wish to participate. The aim of this part of the project was to make to Mberu Pirapo'i the centre of this expanded project by creating a tree nursery

in the community that can sustainably provide saplings in the long-term without the need for regular injections of funding, at present the biggest obstacle to the growth of the programme.

Producing saplings in a sustainable manner means we can increase the number of hectares being reforested, creating new habitat for the capuchin monkey, while reducing poverty in the area, reducing the pressure on the capuchin monkey created by hunting, capture for the pet trade and extractive activities in the remaining forest.

Project Achievements

The construction of the tree nursery began in May 2025, slightly delayed by the poor weather stopping us being able to access the community, and was completed by September 2025. In order to provide more benefits to the community and to utilize the resources and space as efficiently as possible we combined the tree nursery with a vegetable garden to provide food for the school. This is important as many of the 150 children who attend the school only eat the meal provided by the school, something that often stops before the end of term because the government funding runs out. Making sure that at least some of the food needed for the school is produced onsite will reduce the chances of this happening and help stop children going hungry.





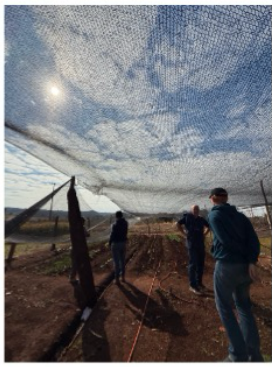
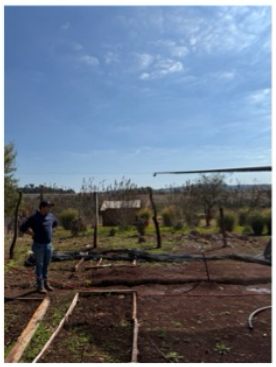

Para La Tierra Education Director Jorge Ayala worked with community member Roberto Brizuela throughout the year to train him how to care for the tree nursery and how to prepare seed trays and sapling bags with native trees.









Roberto is currently caring for 1500 saplings and when the worst of the summer heat passes he will plant another 3500 seeds. These 5000 saplings will be planted during the 2026 reforestation in April.




One particular achievement of the project has been the hiring of Roberto to care for the saplings. The income that he is receiving from this stipend has more than tripled the income that his family receives in a month, something that as the father of 8 children has had a huge positive impact on his family.

An unexpected achievement of this project (also a result of the environmental education programme that we run in Mberu Pirapo'i that was supported by PSGB in 2020) is that the younger generation of men in the community (16-20 years old) have taken the step of banning logging on the property. The reason that they have given is that they now understand the importance of the forest (something that they had been completely disconnected from) and that they have seen so much effort going in to reforesting that they want to support this and no destroy anymore forest. This is a massive step forward in the conservation of the remaining forest in the area.

Issues during the project and lessons learned.

The biggest issue that we faced during the project was the weather. The El Niño weather phenomenon hit Paraguay during the project and brought a lot of rain. The community is not accessible at all when the "road" is wet. This delayed our timeline but we were still able to achieve our goals. We had to replace the shade netting as the violent storms destroyed the original netting. The second set of netting we purchased the strongest available netting which should withstand the strong winds.

Use of PSGB Funds

Funds Received: £1250. Funds Used: £1250

Item Requested	Alternative required	Total Requested	Total Spent
Irrigatia SOL-K12 Fully Automatic Solar Drip Watering System	One pump and 70m of piping purchased instead.	240	240

Shade netting	-	30	50
Seed trays small	-	20	20
seed trays large	-	50	70
Planting bags (100 per pack)	-	100	100
Diesel		320	320
Water tanks (100L)	Connected to school water tank.	70	0
Stipends	-	264	294
Wood	-	156	156

The watering system that we initially intended to purchase could not be obtained as the version available in Paraguay was much larger and difficult to install than we had anticipated. We did attempt to bring the original item on from the UK but we were not allowed to bring the solar panel on the plane. Alternatively we purchase piping and a water pump locally and installed it to the Mberu Pirapo'i school electricity and water supply. The school is the only part of the community with electricity and this is provided free by the municipality. In addition it should be noted that almost all Paraguayan energy is "renewable" as it is produce by the Itaipu and Yacyreta hydroelectric dams (though the construction of these dams also came with a staggeringly high environmental and social cost). As we connected to the schools water supply we did not need to purchase the water tanks and we added this money to the stipends for Roberto Brizuela. The wood was purchased from a community member at Mberu Pirapo'i and had been harvested from trees that had fallen in a storm, not that had been logged.