

“Mapping of manually planted trees using the STA logger - Sarapico”

Ferrando & Asociados in collaboration with Montes del Plata and STA Logger

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& ASOCIADOS

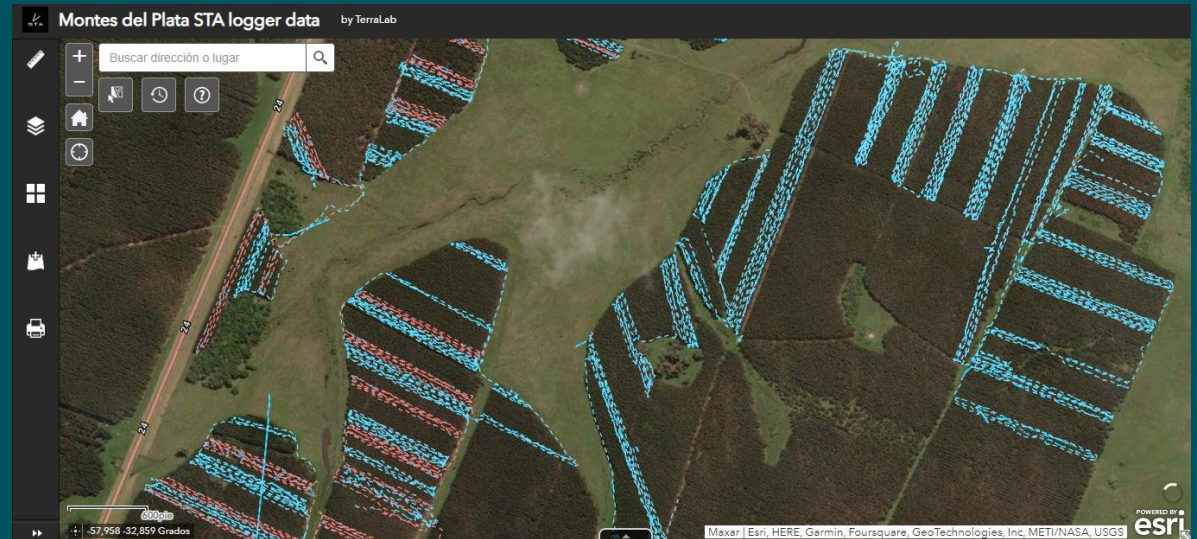
INTRODUCTION

Montes del Plata



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STA



THE CHALLENGE

The challenge of the project was to achieve 95% traceability in planting, replanting, and replacement operations with clones to understand the causes of plant mortality.

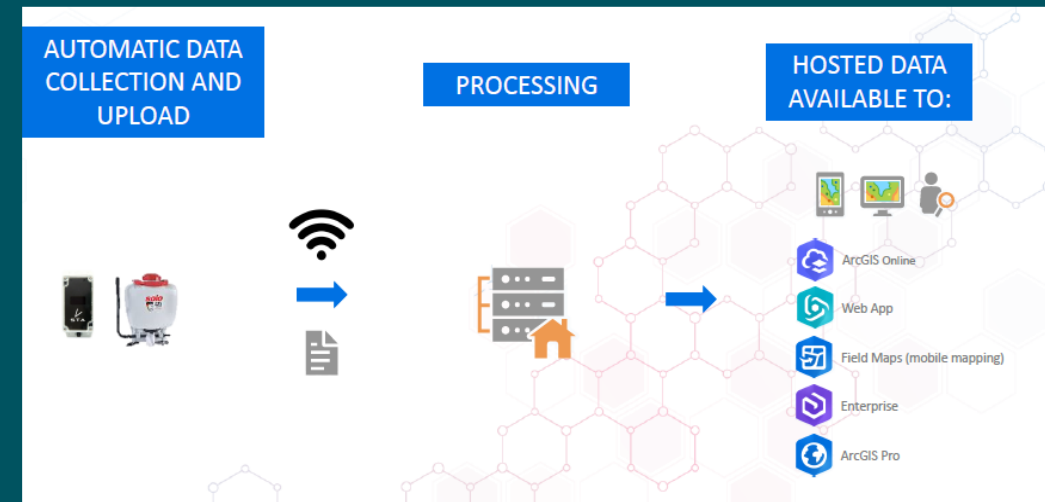
- Lack of precise traceability in planting.
- Clone mortality.
- Need for improved data-driven decision-making.



STA LOGGER TECHNOLOGY & ADAPTATION OF THE SARAPICO

The STA logger is an automated GPS and data logging attachment designed to integrate with your existing silviculture tools.

- Automated data logging and GPS device.
- Automatic recording of the location and the timing of each planting action.
- Data uploaded to the cloud and accessible via an online portal.
- Modification of the traditional manual planting tool.
- Integration of a limit switch for precise recording.



KEY ACHIEVEMENTS TO DATE

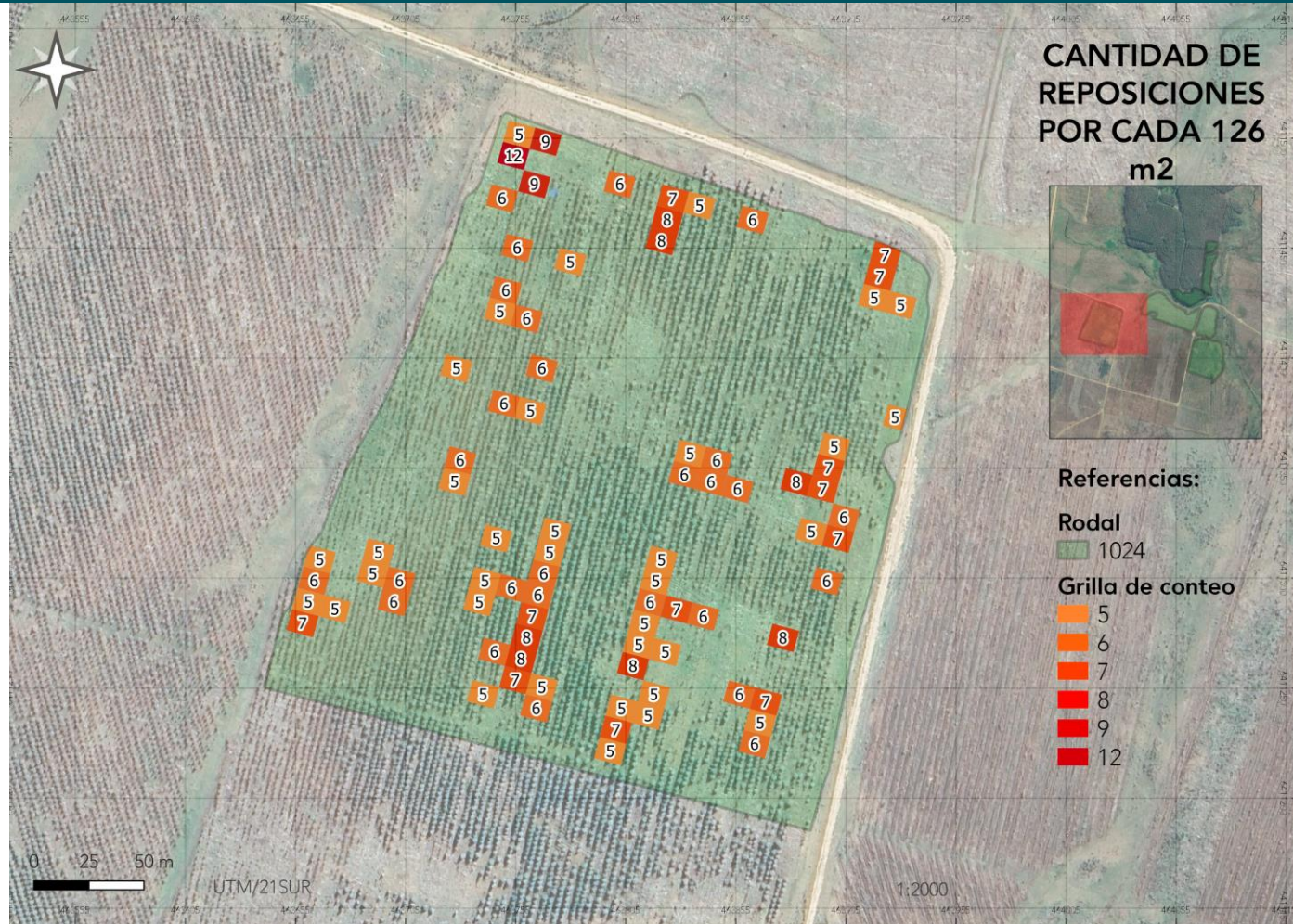
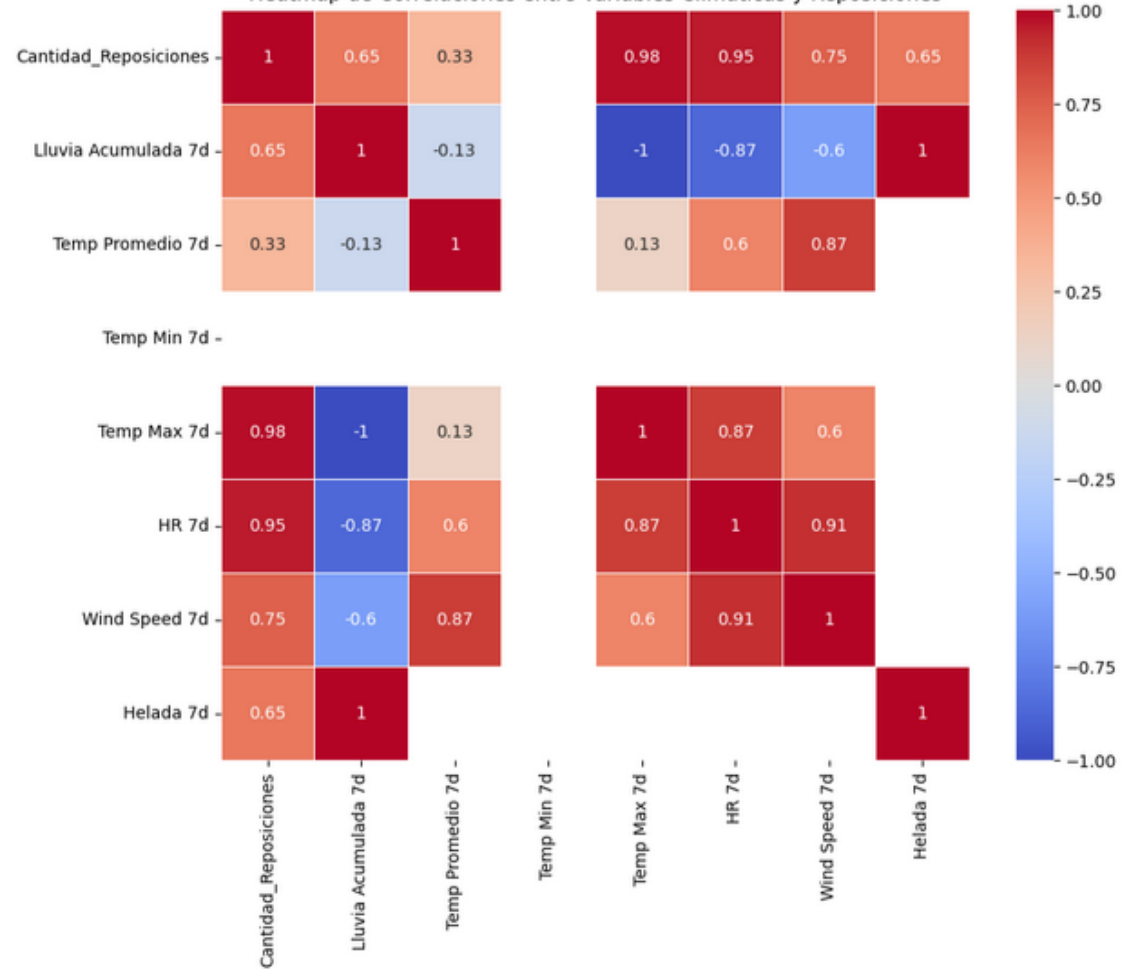
The project achieve >95% traceability in planting and replanting operations

- Recording planting locations: 1,2 m precision.
- Cross-referencing geolocation with additional variables (soil, climate, genetics, etc.).
- Analyzing geospatial distribution for improved understanding of factors affecting clone mortality



KEY ACHIEVEMENTS TO DATE

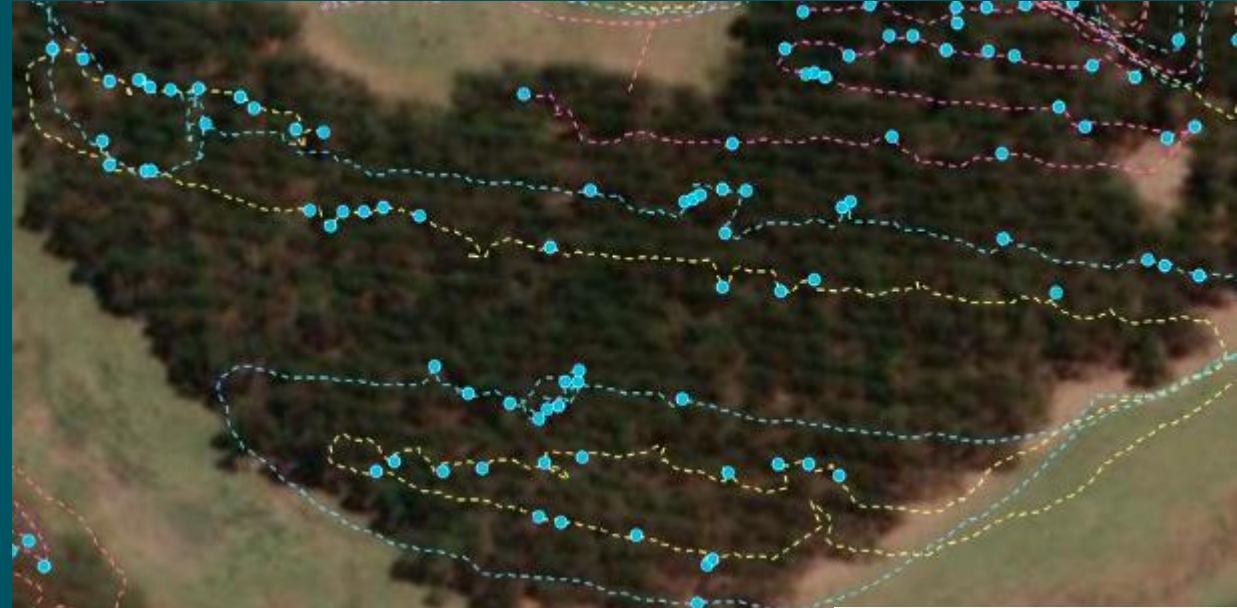
Heatmap de Correlaciones entre Variables Climáticas y Reposiciones



BENEFITS OF THE STA LOGGER IMPLEMENTATION

Benefits achieved so far.

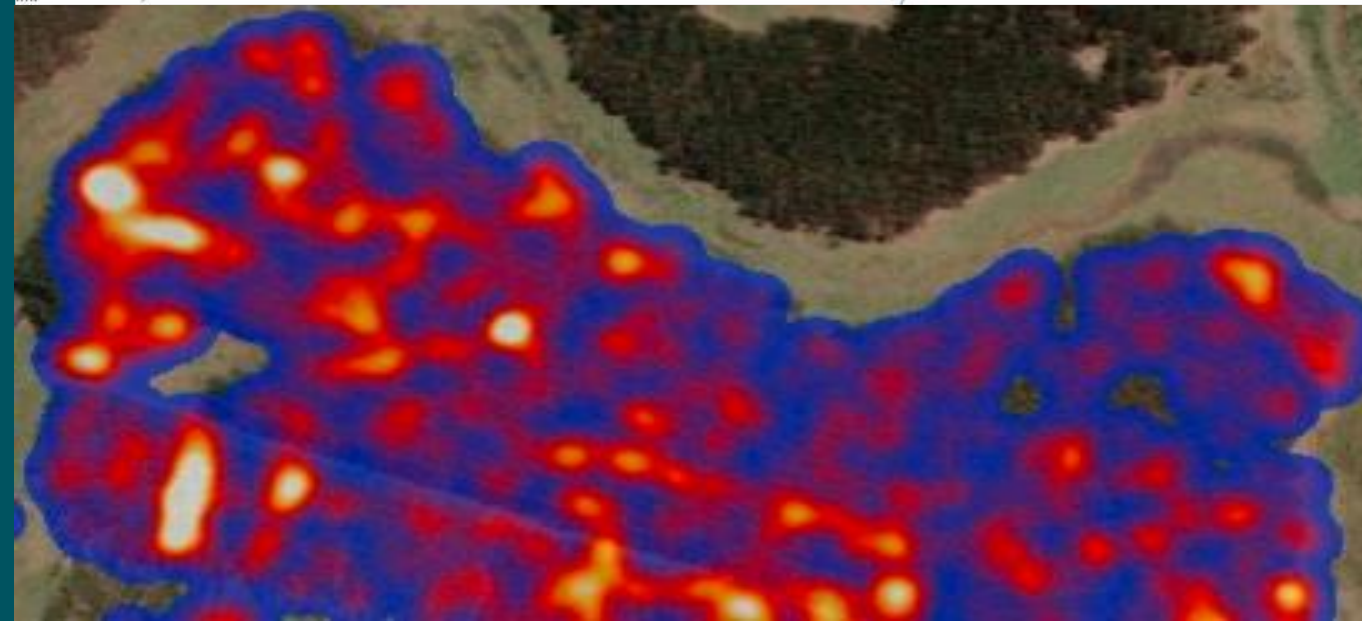
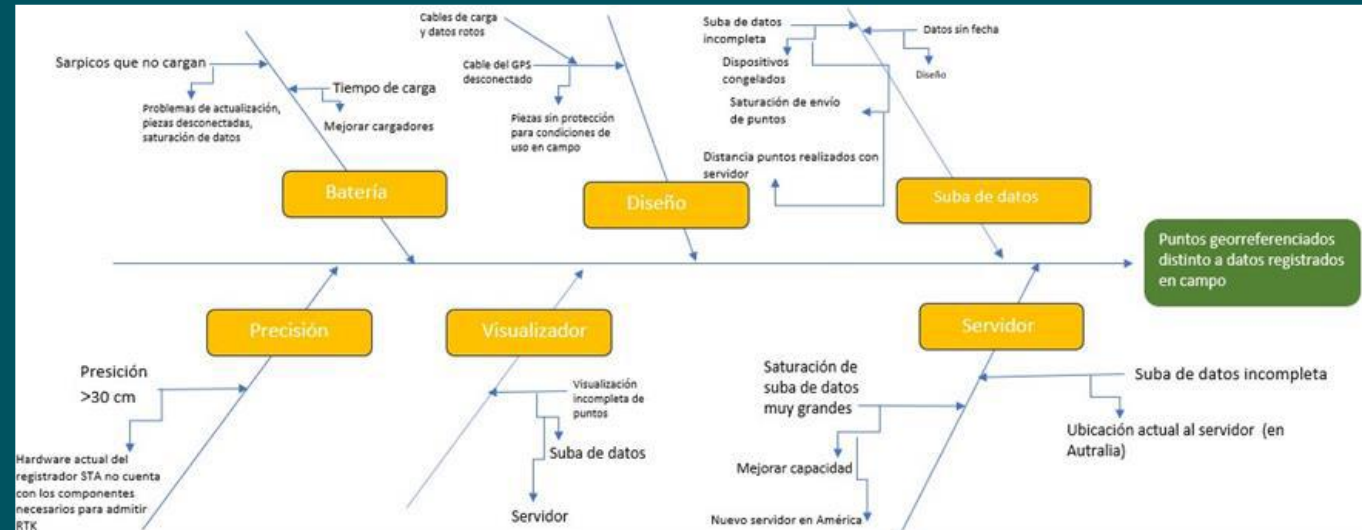
- Achieve 95% traceability in planting, replanting, and replacement operations
- Data to develop actionable recommendations.
- Enhanced decision-making.
- Improve recording planting locations: <1 m precision.



NEXT STEPS OF THE PROJECT

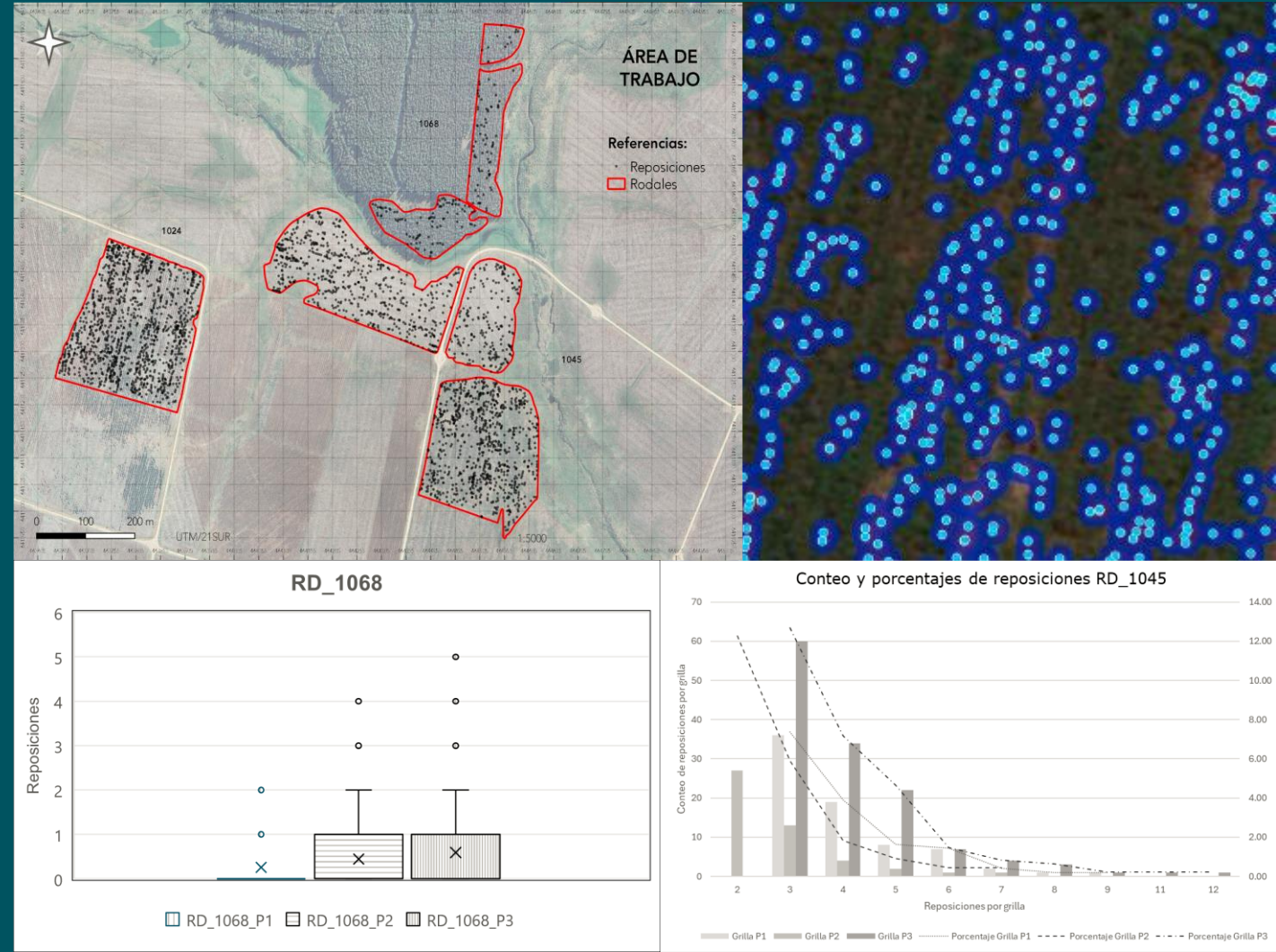
Planned actions for 2024.

- Finalizing data validation.
- Improving accuracy of the equipment : <30 CM.
- Larger-scale testing and improved data accessibility.
- Make improvements in the design of the plantings sarapicos and the base support for transportation, improve the protection of parts exposed to field use.
- Automatic differentiation between planting and replanting points in the viewer.
- Test the use of battery/solar panel for on-site charging of devices.



CONCLUSION AND FUTURE OUTLOOK

- Integration of modern technology has the potential to significantly improve planting precision, reduce clone mortality, and increase overall efficiency.
- It is possible for scaling up this technology across different forestry operations: weed & ant control.
- This project aligns with sustainable forestry goals and the broader vision for digital transformation in the industry.





Thank you

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