Innovation through co-produced landslide risk monitoring: Experiences in Medellin (Colombia) and Sao Paulo (Brazil)

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Structure of the Presentation

1. Project objectives
2. The pilot project in Medellin (2016-17)
3. Upscaling in Medellin (2017-19)
4. Replicating in Sao Paulo (2017-19)
5. Lessons learned

Resilience for whom?

Resilience is a complex concept to transfer to the built environment because it operates in two modes:

(a) proactive preventive resilience;

(b) reactive/restorative resilience.

Lawrence J. Vale (2014) : "As long as citizens insist upon a politically engaged form of resilience, then asking questions about 'whose resilience' and 'whose city?' can contribute usefully to efforts to improve the living conditions in stressed and distressed urban areas."

Project Objectives

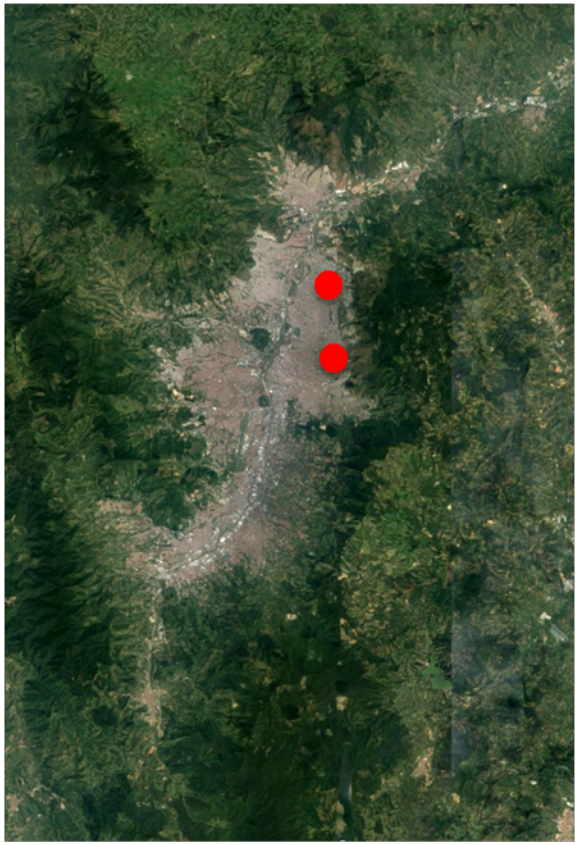
(a) to analyse **perceptions and narratives of risk** and landslide risk among the community and public sector organisations;

(b) to pilot **participatory monitoring and mitigation** approaches in a case study community; and

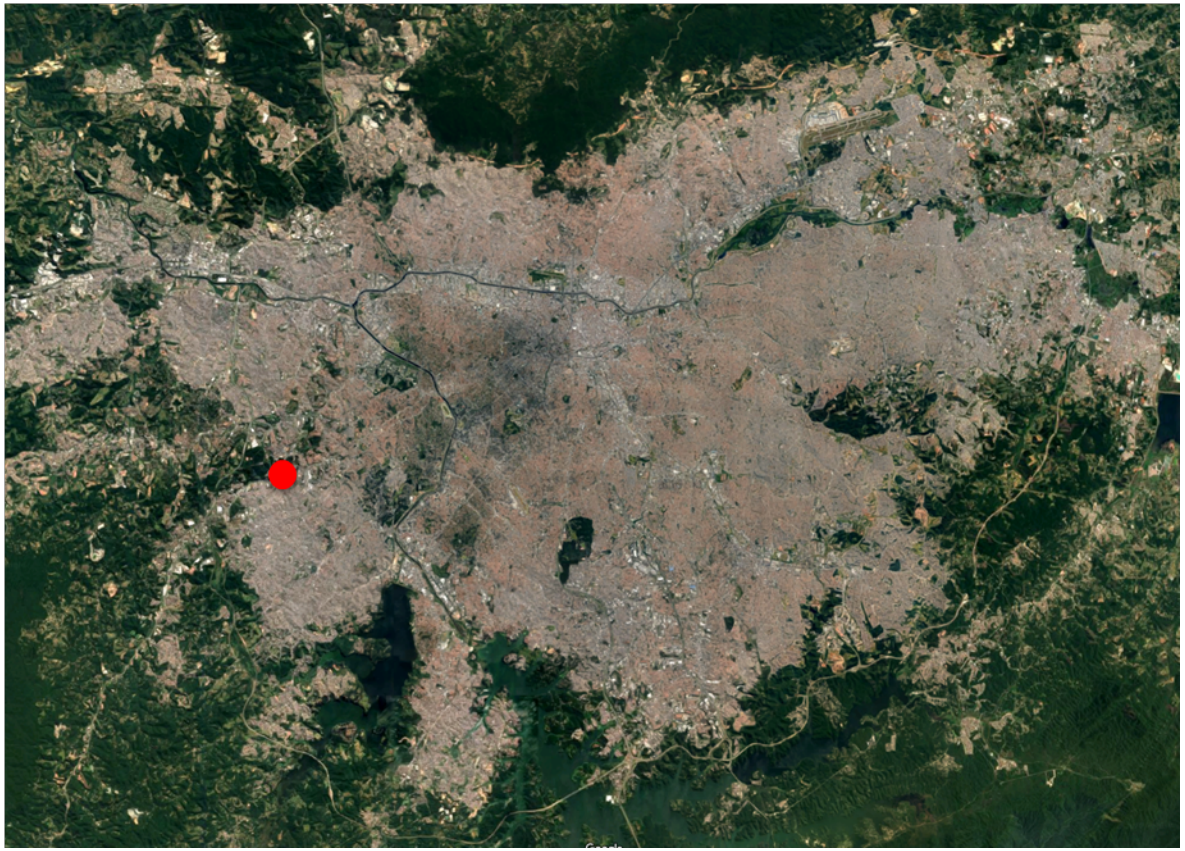
(c) to explore the potential for **negotiated strategic landslide risk management** particularly between the community and public sector actors.

Project Locations

Medellín, Colombia



Sao Paulo, Brazil



Perceptions of Risk: The viewpoints of the community and government agencies

Objective: to analyse perceptions of risk and landslide risk among the community and public sector organisations.

Method: Focus Groups, interviews and desktop research.

Monitoring: The implementation of participatory monitoring

Objective: test upscaling of participatory community monitoring.

Method: Participatory Mapping and Monitoring, including a community evaluation workshop in each participating settlement .

Mitigation: The identification of appropriate low-cost mitigation works

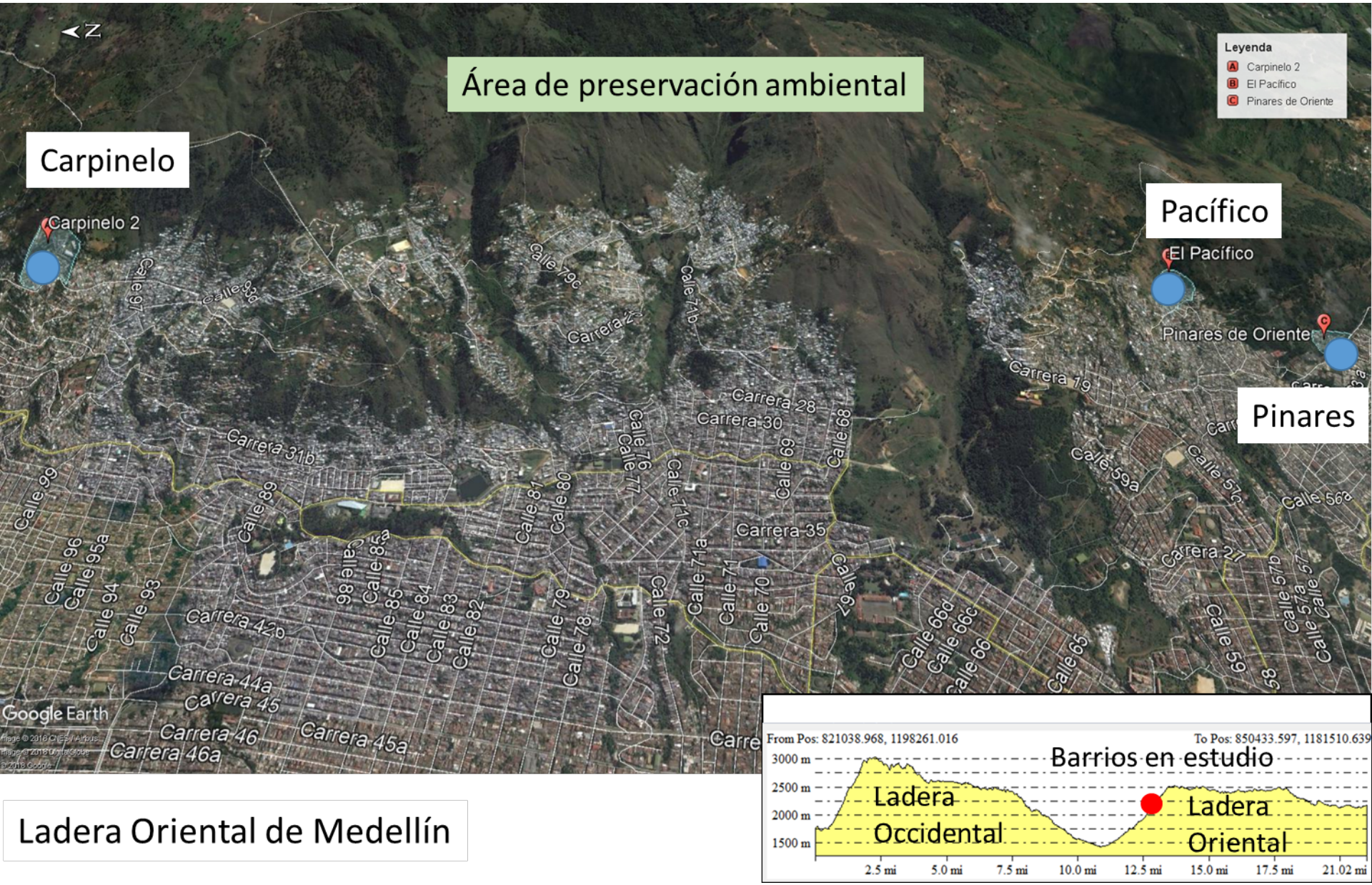
Objective: identify appropriate low-cost mitigation works.

Method: Following the participatory monitoring and after a community evaluation workshop in each participating settlement, identify low-cost works.

‘Concertación’: Negotiated strategic landslide risk management

Objective: explore the potential for negotiated strategic landslide risk management particularly between the community and public sector actors.

Method: explore collaborative landslide risk-mitigation strategy-building via a multi-stakeholder evaluation workshop involving community and relevant public sector bodies.



Ladera Oriental de Medellín

Pilot Study

Community: Pinares de Oriente

Monitoring (pilot study)

participatory mapping exercise

Method:

- Research team & community leaders' rapid survey of the settlement, identifying **12 critical points**.
- Presentation of the survey to the community became a participatory mapping exercise where a further two points were **identified by the community.**
- The research team then prepared a simple **manual to provide guidance** to a set of community volunteers on what and how to monitor.
- Pairs of **volunteers took responsibility** for each point.
- The volunteer task was to take photographs of the critical points on a regular basis, and send these to a **WhatsApp group** that had been set up for each critical point.

Mapping (pilot study)

identifying vulnerable areas

Monitoring (pilot study)

the evolution of community-based monitoring

What should I monitor?:

- The slope of the house and the tree. Two photographs should be taken from different angles
- The small landslides and any local collapse of earth/rocks/material

How often should I monitor?

- Daily, if possible

If it rains, monitoring should be more frequent, such as:

- After the rain
- 2 hours after the rain
- 12 hours after the rain
- 24 hours (1 day) after the rain

Monitoring (pilot study)

the evolution of community-based monitoring

Data Collection (pilot study)

setting up a simple data-collection system

Whatsapp Group:

- 6 different **groups, one for each monitoring point**
- Each point had **pictures & information** collected by volunteers on the ground
- Chats were **monitored** by the Edinburgh-based geologist with research assistance
- WhatsApp Group chats and media **exported weekly** and distributed amongst research team
- An indispensable aspect of the WhatsApp group is having determined community **leaders** on the ground who **motivate** and **encourage** residents to continue monitoring

Conclusions from the pilot study

learning lessons from the objective of participatory monitoring

Conclusions:

- Community-based monitoring of landslide risk can work, but it requires and **ongoing and closer link** between the participating residents and the research team
- A researcher who visits the area regularly and chats with the participants about how they are getting on would help '**put a face**' on the exercise
- **Explaining** to the participants how the information they send is analysed also helps **engagement**
- Thought needs to be given to the **amount** of monitoring points, and the **number of people** responsible for each
- Community-based monitoring of landslide risk has **raised awareness** among the community of the importance of managing water drainage appropriately.

Área de preservación ambiental

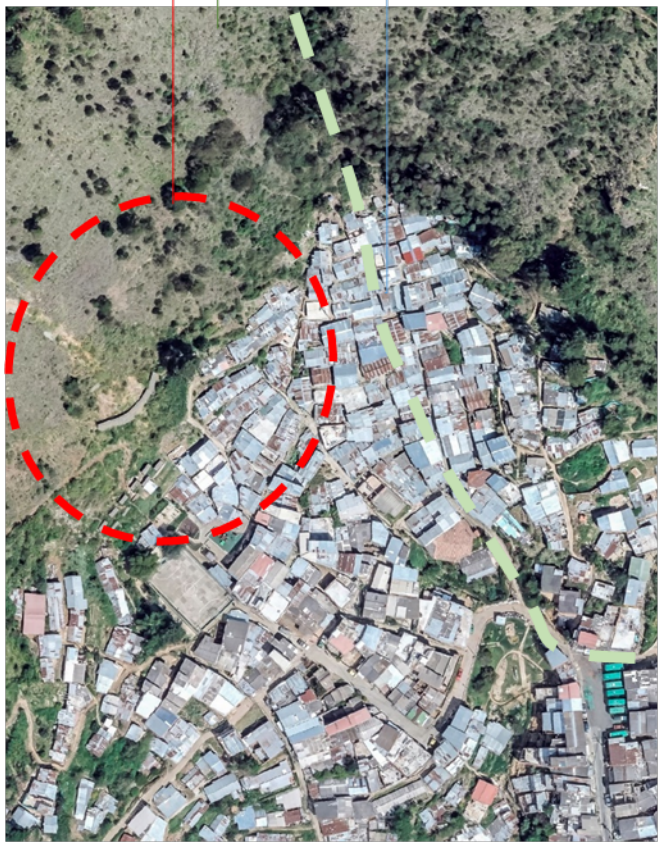
Línea perímetro urbano rural

Zonas alta amenaza – Ocupación precaria. Requieren de estudios de Microzonificación Sísmica (Detalle) para que municipalidad establezca qué hacer

Contexto

Densidad habitacional y poblacional alta.
Población baja renta.
Violencia y control territorial

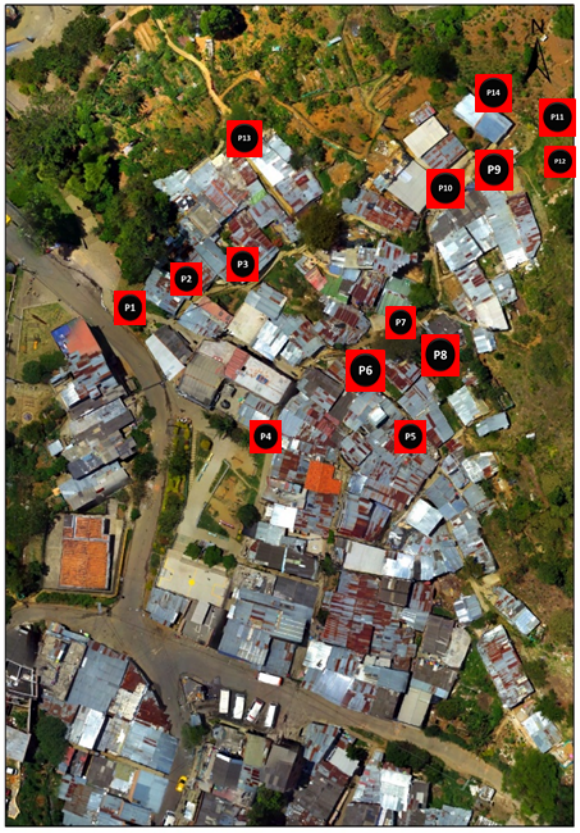
Barrio Pinares (comuna 8)-2017



Barrio El Pacífico (Comuna 8)-2018

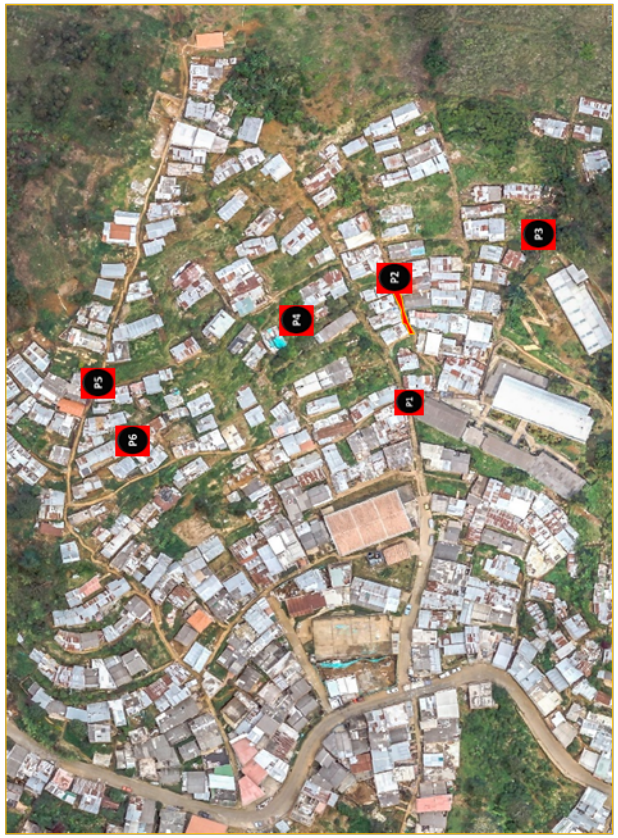
Barrio Carpinelo (Comuna 1)-2018

Monitoring points in Medellin communities



Barrio Pinares (comuna 8)-2017

Barrio El Pacífico (Comuna 8)-2018



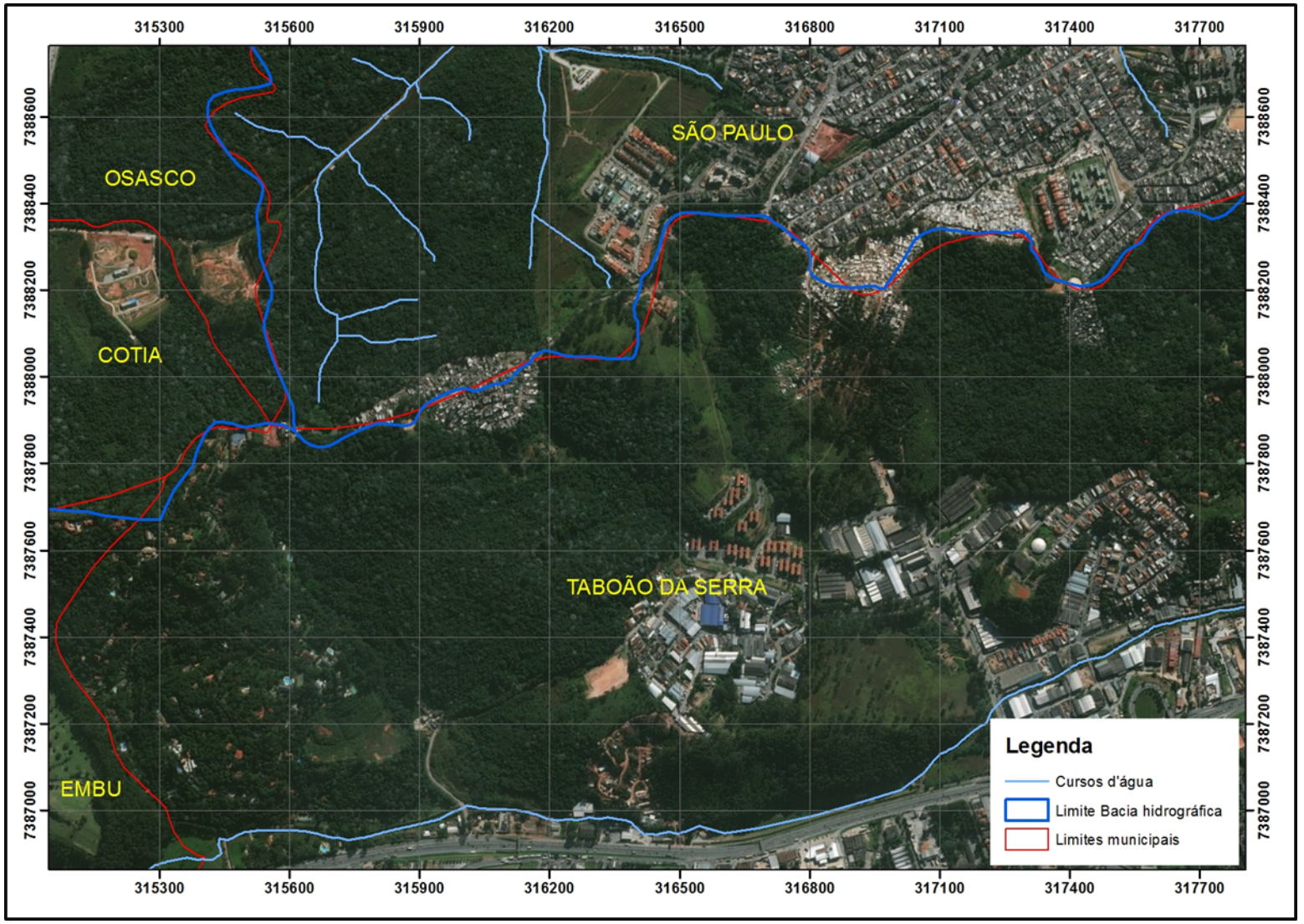
Barrio Carpinelo (Comuna 1)-2018

Asuntos a considerar vistos en monitoreo

- Recolección adecuada aguas residuales y lluvia
- Conducción agua lluvia de tejados
- Adecuación vías peatonales
- Canalización quebradas
- Educación uso basuras
- Control a banqueos

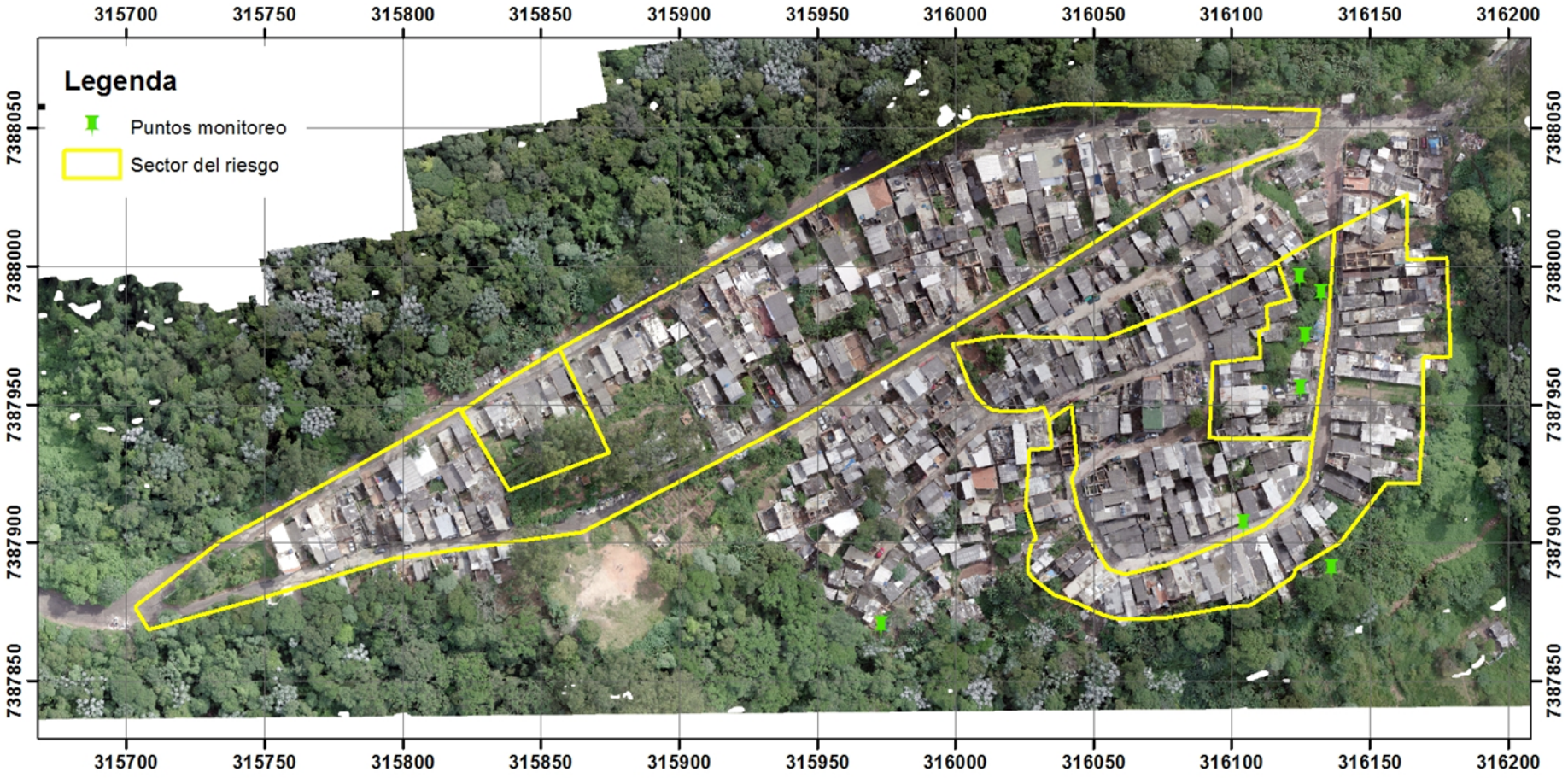
Punto 2. Sendero. Monitoreo de las aguas de escorrentía por el sendero.

Replicating the experience in Sao Paulo



Vila Nova Esperança

Monitoring points in Vila Nova Esperança



Training volunteers in Vila Nova Esperança

03/11/2018

24/11/2018

15/12/2018

11/01/2019

Lessons learned

The *design* of monitoring system

The search for community *volunteers*

Implementing the monitoring system

There is a pedagogic aspect to this project that is very important for the community.

After the pilot project we realised the importance for the community to learn how to perceive the risk of the territory in relation to their individual house.

Being active participants in the monitoring increases the likelihood there will be a continuation or 'afterlife' to the project.

Lessons learned

The *quality* and quantity of data collected

The *analysis* of data collected through monitoring

The *use* of data collected through monitoring

Whatsapp as a tool was critical for a successful collective engagement.

It is important for the community to see and understand how the data is used to analyse.

Communities see the value of generating their own data to then interact with other stakeholders including the public sector.

NGOs working with the community help disseminate and provide continuity after the project.

It is key that they community participate of the points of monitoring selection process.

Final findings, conclusions derived from the monitoring must be explained to the community.

Thank You

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https://www.globalurbancollaborative.org/resilience

https://www.globalurbancollaborative.org/upscaling-resilience