



**RNP STUDIO**  
ORDEN & SÍNTESIS



# **TERRITORIO 72** **+ ECO Emergencia**

SISTEMA DE RESILIENCIA TERRITORIAL FRUGAL

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CONECTAR LO QUE YA TENEMOS  
PARA RESISTIR LO QUE VIENE

# TERRITORY 72 + ECO Emergency

## Frugal Territorial Resilience System

**RNP Studio** — Complementary proposal to the project “*Frugal Innovations for Disaster Risk Reduction and Response*”

Pontificia Universidad Javeriana / RELIF

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## Executive Summary

TERRITORY 72 starts with a central question:

**Can a territory sustain its essential functions during the first 72 hours of an emergency, using primarily the resources it already has?**

The project combines two layers —a territorial capacity mapping system (**TERRITORY 72**) and an observation and communication layer (**ECO Emergency**)— under the same philosophy:

**Do not build first. Connect first.**

It is not a finished platform or a public infrastructure project. It is a methodology for territorial assessment and activation, designed to be applied with minimal resources and validated jointly with universities and organizations within the RELIF network.

# 1. The Problem

Every territory contains resources that could perform important functions during an emergency: schools, community centers, workshops, producers, wells, vehicles, radios, health centers, businesses, and local organizations.

However, we usually know their everyday function, but not necessarily:

- what actual capacity they have;
- what function they could perform during an emergency;
- which hazards they could respond to;
- what they depend on to remain operational;
- which other nodes could support them;
- or what capacity remains available to help others.

Existing frugal solutions address specific problems, but they do not necessarily indicate where they should be applied or whether the territory has the conditions required to sustain them.

Therefore, TERRITORY 72 seeks to transform dispersed resources into a **visible network of territorial capacities**.

## 2. TERRITORY 72 — Capacity Mapping

TERRITORY 72 operates before an emergency through a participatory assessment protocol.

Each node is analyzed using a simple matrix:

**Resource → Normal Function → Emergency Function → Hazard → Timing → Dependencies / Backup**

For example, a school is an educational space under normal conditions and could potentially function as a shelter, information point, or charging point during an emergency.

However, the system does not assume that it has those capabilities.

The assessment determines whether it actually has access to:

- water;
- energy;
- communications;
- accessibility;
- physical space;
- personnel;
- autonomy;
- and other capabilities required for the proposed emergency function.

This makes it possible to distinguish between **a physical space that is available** and **a node with real operational capacity**.

In addition, the **viability of the node** is assessed: technical capacity, social acceptance, and institutional support to perform the proposed function during an emergency.

### 3. ECO Emergency — Observation and Communication

ECO Emergency is the observation layer of the system. It provides a way to understand what is happening with the nodes during and after an emergency.

#### Status Semaphore

| Status                                                                                     | Meaning                                                                                  |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Green  | Operational                                                                              |
|  Yellow | Operational with limitations                                                             |
|  Orange | Critical capacity                                                                        |
|  Red    | Non-operational                                                                          |
|  Blue   | No information — the node is not reporting, so its current condition cannot be confirmed |

The blue status is particularly important:

**Lack of information does not mean that the node has failed.**

In addition to status, ECO can record **available capacity** that could support other nodes, such as surplus water, energy, space, tools, vehicles, or other resources.

ECO operates across three phases:

**Normal → Emergency → Recovery**

Under normal conditions, nodes are checked at a low frequency to keep the map updated. During an emergency, reporting frequency increases, allowing the operational status of nodes to remain updated throughout the emergency.

## **Redundant Communication Architecture**

An emergency can affect communication systems themselves.

Therefore, ECO conceptually incorporates a **three-layer redundant communication architecture**:

1. **WhatsApp / cellular network** — primary channel
2. **Bluetooth mesh / local communication** — short range, without cellular coverage
3. **Long-range radio** — no cellular network, greater distances

Independent energy sources, such as solar systems and batteries, can power communication nodes.

The specific technology will be validated during the pilot according to the characteristics of each territory.

## **4. What TERRITORY 72 Is NOT**

To avoid misunderstandings, it is important to clarify:

- It is not an emergency response app.
- It is not public works or new infrastructure.
- It does not replace civil protection authorities or municipal emergency plans.
- It is not a catalog of frugal solutions.
- It does not promise that a territory can withstand 72 hours; rather, it uses that time horizon to analyze how long essential functions can be sustained and where dependencies and gaps emerge.

## 5. Relationship with RELIF / Javeriana

The proposal seeks to complement the work of Javeriana / RELIF from another perspective:

| Javeriana / RELIF             | TERRITORY 72 + ECO                                            |
|-------------------------------|---------------------------------------------------------------|
| What frugal solutions exist?  | What capacities does a territory have, and what does it need? |
| Mapping of frugal solutions   | Map of territorial capacities and gaps                        |
| Answers: "What is available?" | Answers: "What is missing and where?"                         |

The natural connection makes it possible to move from *available solutions* to *solutions linked to concrete territorial needs*.

A gap identified in a territory could potentially be addressed by a solution already documented by Javeriana, rather than designing something new from scratch.

## 6. Proposed Implementation — Pilot Phase

The proposal does not begin by developing a complete platform.

The first stage is to **test the methodology** in a defined territory.

### Initial proposal

- 1 territory
- 10–15 nodes
- A limited set of hazards

## Activities

1. Design and validate the assessment protocol.
2. Map existing capacities with a university team from the RELIF network.
3. Identify functions, dependencies, and backup relationships between nodes.
4. Identify concrete gaps.
5. Cross-reference gaps with existing frugal solutions.
6. Test the ECO workflow with participating nodes.

**Resources:** RNP Studio provides the methodology and protocol design. The pilot university and the RELIF network provide field teams, territorial coordination, and validation channels.

## 7. Investment and Resources

At this conceptual stage, no direct financial investment by RNP Studio is contemplated.

The development relies on:

- **Assessment protocol:** designed by RNP Studio and applied by university teams.
- **ECO Emergency:** conceptual development of a WhatsApp-based bot, potentially implementable using no-code tools or through university internships/practical projects.
- **Fieldwork:** carried out by volunteers or university extension teams connected to RELIF.
- **Materials:** digital or printed forms, maps, and interviews.

The pilot phase seeks to **minimize costs by using infrastructure, tools, and existing capacities within the participating organizations**, in line with the principle of frugal innovation.

## 8. Maturity Level

**Current status: conceptual proposal / methodology under development.**

The objective of the pilot phase described in Section 6 is to move toward **validation in a real territory**, generating field evidence to evaluate and improve the methodology.

## 9. Risks and Limitations

- Requires coordination with local actors, including municipalities, organizations, and community leaders.
- Depends on the willingness of nodes to report their status.
- Initial mapping requires fieldwork, estimated at **4–6 weeks**.
- ECO depends on node representatives having access to WhatsApp or radio.
- The quality of the information depends on the accuracy of self-reporting; cross-validation between neighboring nodes is recommended.

## 10. Next Steps

As a complementary deliverable to the Javeriana / RELIF project, we propose jointly exploring:

- **TERRITORY 72:** Territorial capacity mapping protocol.
- **ECO Emergency:** Node observation and communication protocol.
- **Territorial pilot:** Application in one territory with a limited number of nodes.

The objective is to agree on a pilot territory, a joint work schedule, and the university teams that will apply the protocol in the field.

### RNP Studio

*Innovation with what we already have to withstand what is coming.*

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