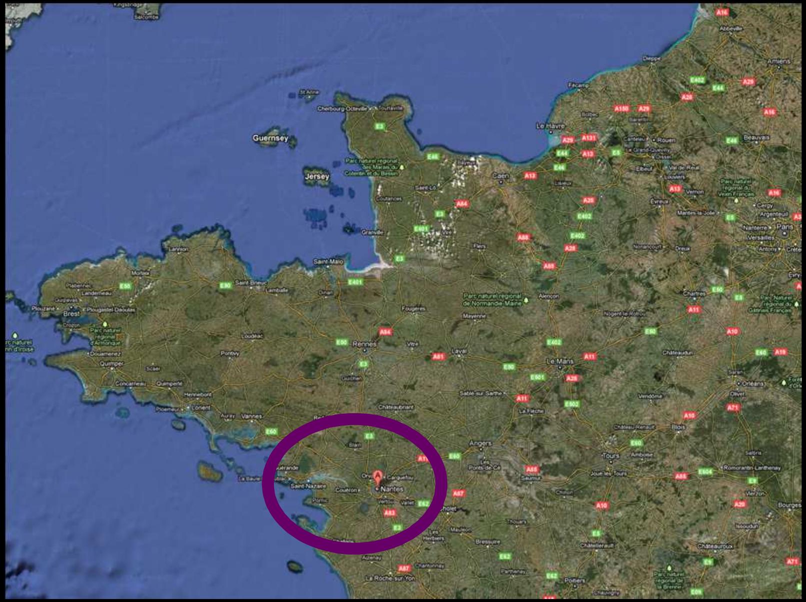
The territory



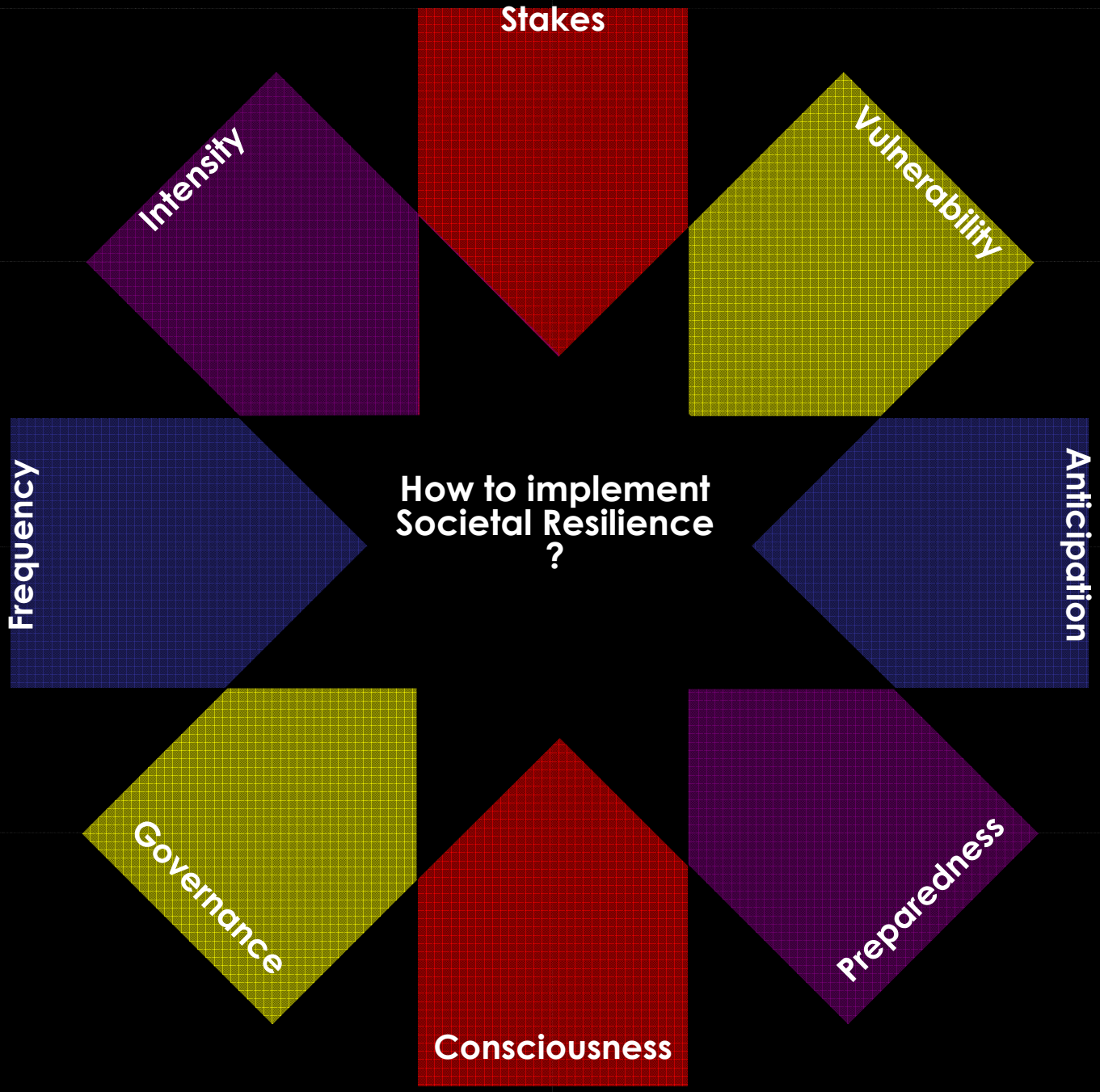
To study territorial resilience

Population	795 937 inhab
Surface	2 118 km^2
Counties	29
Cities & villages	82

The project

- Find a «resilience index» for a territory face to major natural and industrial hazards
- *in the future : other risks and threats...*
- A qualitative «index»
- Mixing prevention, planning, preparedness, risk education, emergency management, economical and social resilience and recovery
- Based on «global view» on a territory
- Objectives : optimize a costly system of “reparation”

Feb 2010 Xynthia Storm : 53 Death
Bad prevention “implementation”
Good emergency response
Poor resilience response
Population unhappy
Law suits ..... – big losses


Stakes
Vulnerability
Anticipation
Preparedness
Consciousness
Governance
Frequency
Intensity
How to implement
Societal Resilience
?

Searching for an Index : How do weproceed ?

Defining a « gravity » mark for the territoryincluding :

-natural and technologicalhazards (occurency&intensity)

-stakesatrisk (importance &vulnerability)




Searching for an Index : How do weproceed ?

Defining an "ability to react" mark for the territory :

Studying all kind of prevention process – emergency planning & preparedness - education –assurance – communication – relationship between stake-holders…

ANTICIPATION (Risk prevention & education)	***REACTIVITY (Response of all kinds)***
DDRM – Major hazard document on the Dept.	PCS – Emergency plan for cities
DICRIM – Risk education document for population (city & school)	POI - PPI – Emergency plan – industrial hazards
PPRN (prevention plan for major natural risk)	PPMS - School emergency plans
PPRT (prevention plan for major industrial risk)	White (Hospital) plan
SDACR (Planning organization for fire and rescue responders)	ORSEC response framework

Searching for an Index : How do weproceed ?

Resilience index : $\frac{\textit{“Ability to react” mark}}{\textit{“Gravity” mark}}$

If > 1 Resilience positive ***If < 1 territory still at risk.***

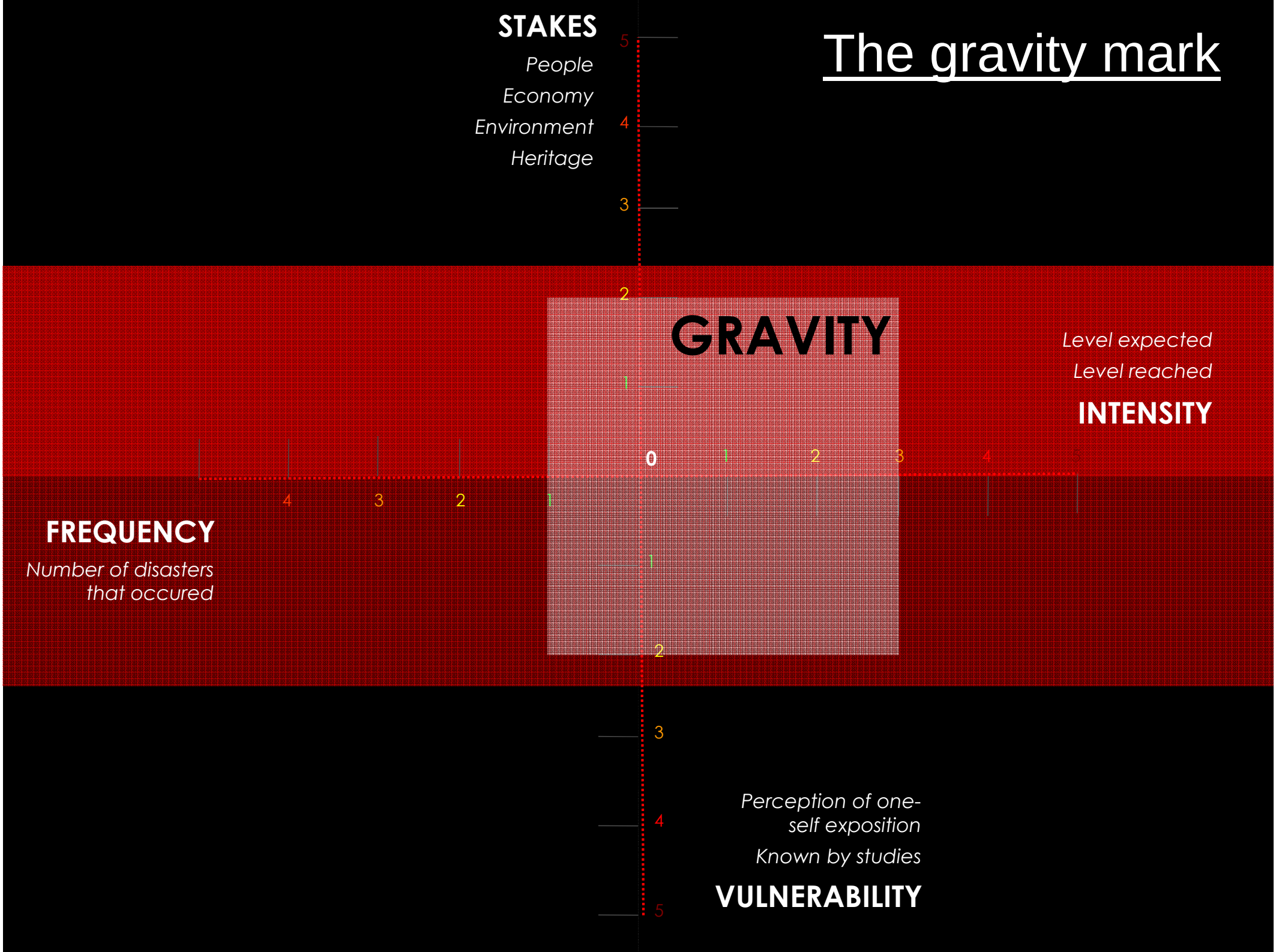
But an index >1 does not mean all the work is done !

Beyond the Index : Increasing territorial resilienc

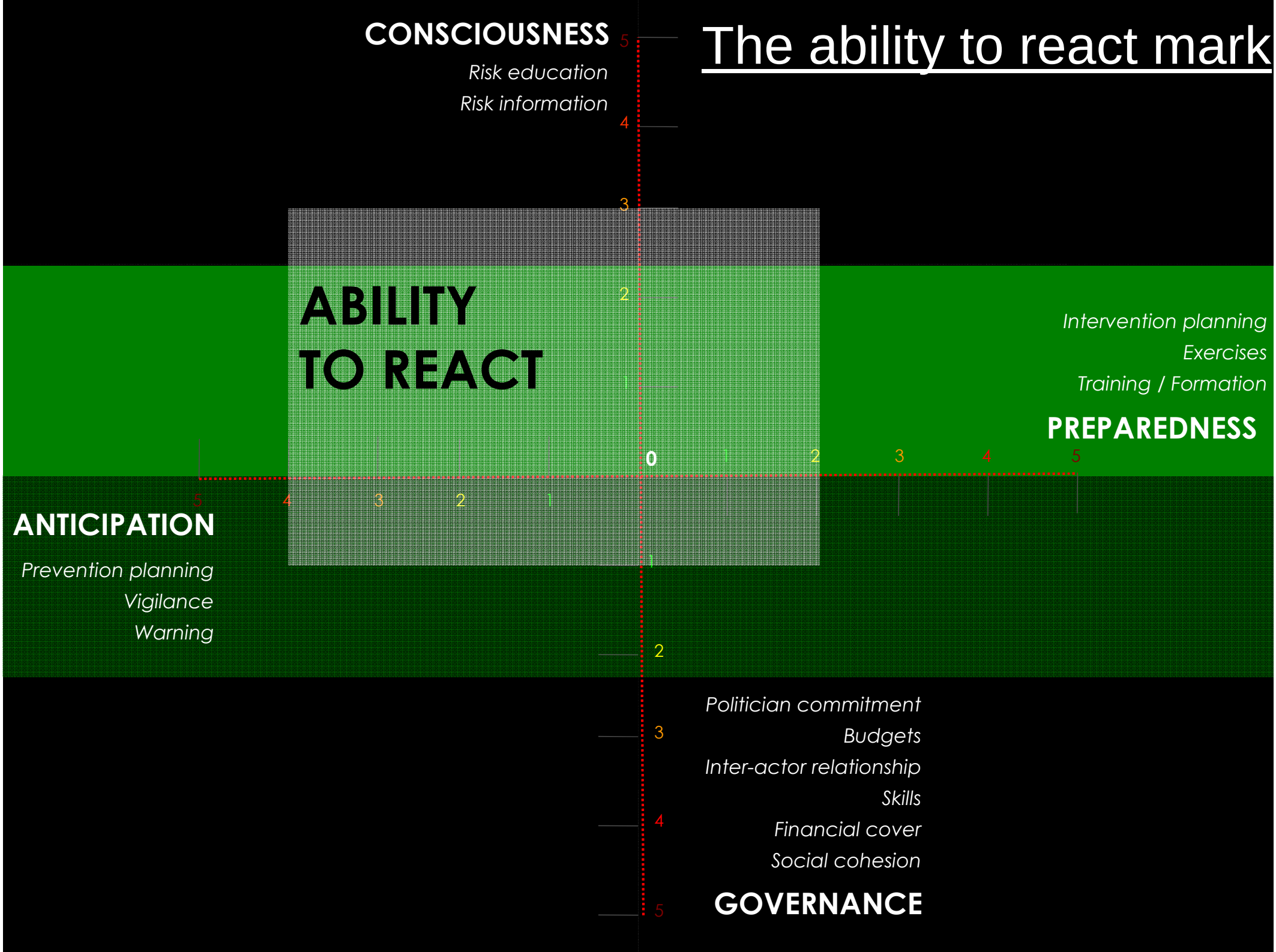
Beside rating the resilience, wealso focus on highlighting the ways to reinforceresiliencewith the best economic efficiency.

So the territorial resilience index must be a qualitative index !

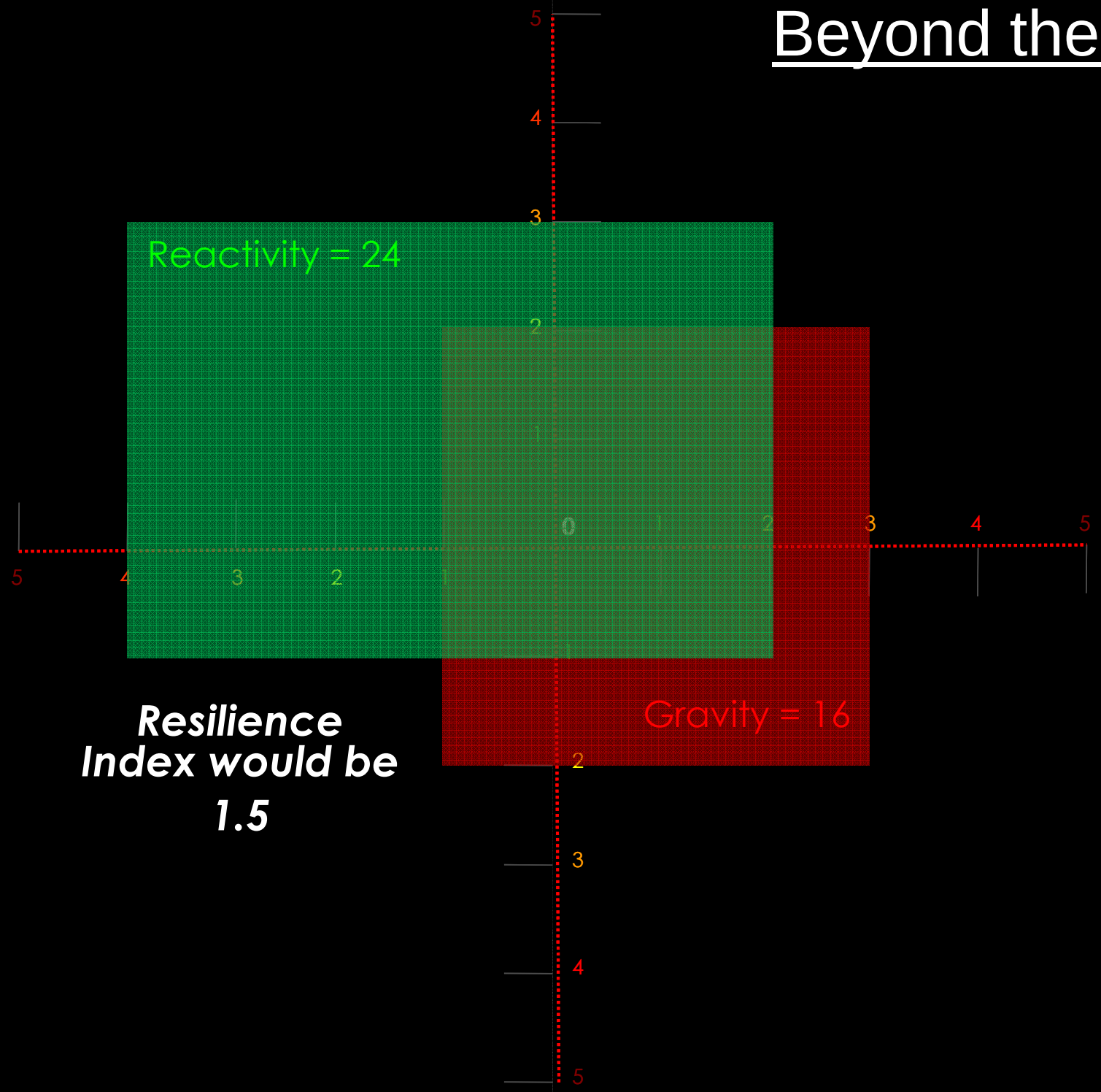
The gravity mark



The ability to react mark

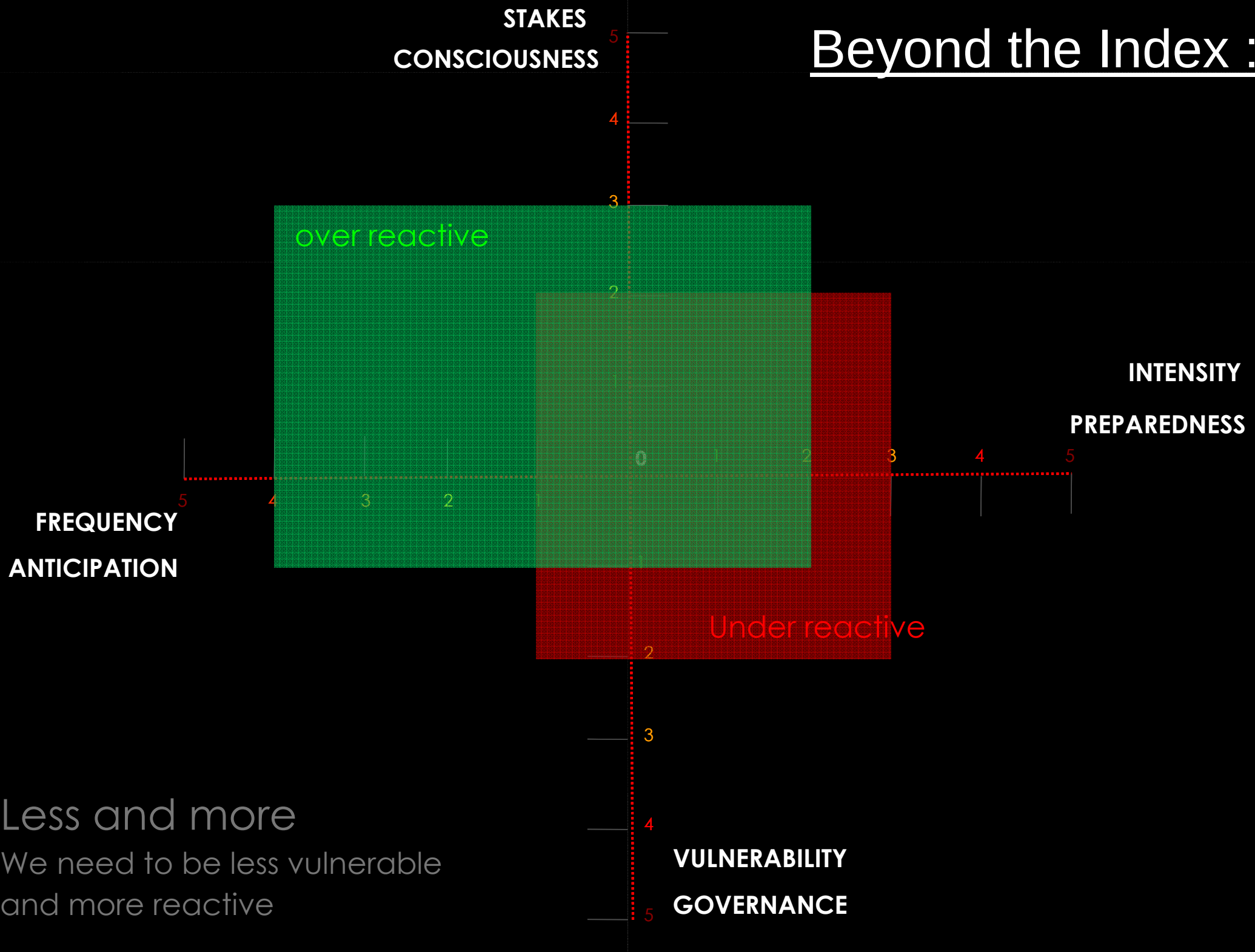


Beyond the Index :



Resilience Index would be 1.5

Beyond the Index :



Less and more

We need to be less vulnerable
and more reactive

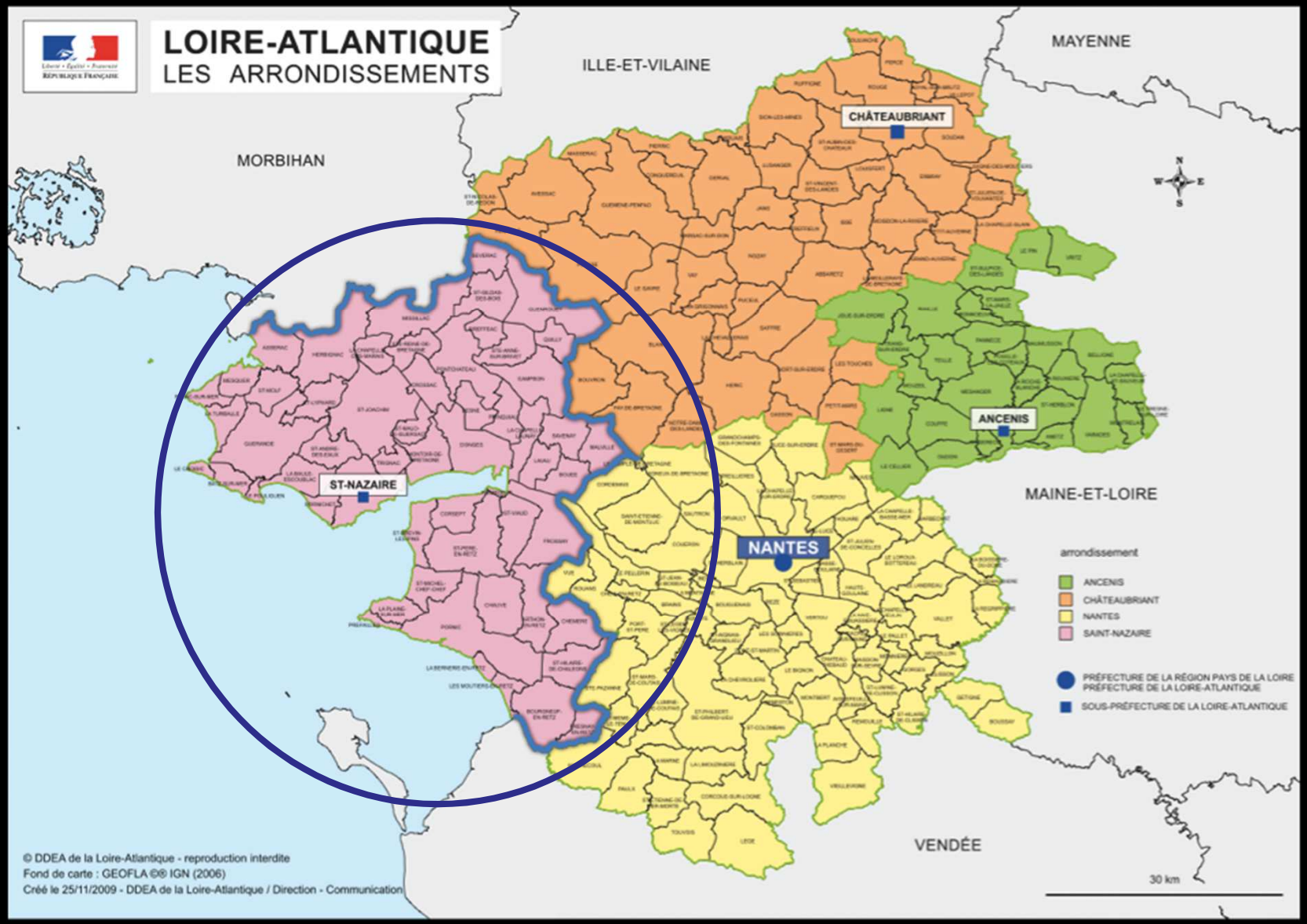
How do wecollect data : The inquiries

Interview with the persons in charge of major natural and technologicalhazards in :

cities	The Regional Environnement Administration (DREAL)
the Prefecture and itsspecialized services	The RegionalHealth Administration (ARS)
the FireDepartment (SDIS 44)	the local Education Administration (Académie de Nantes)
the industrial complexes	

Of course, besideourownresearch.

First study (2010-2011) : The area



First study (2010-2011) : The results

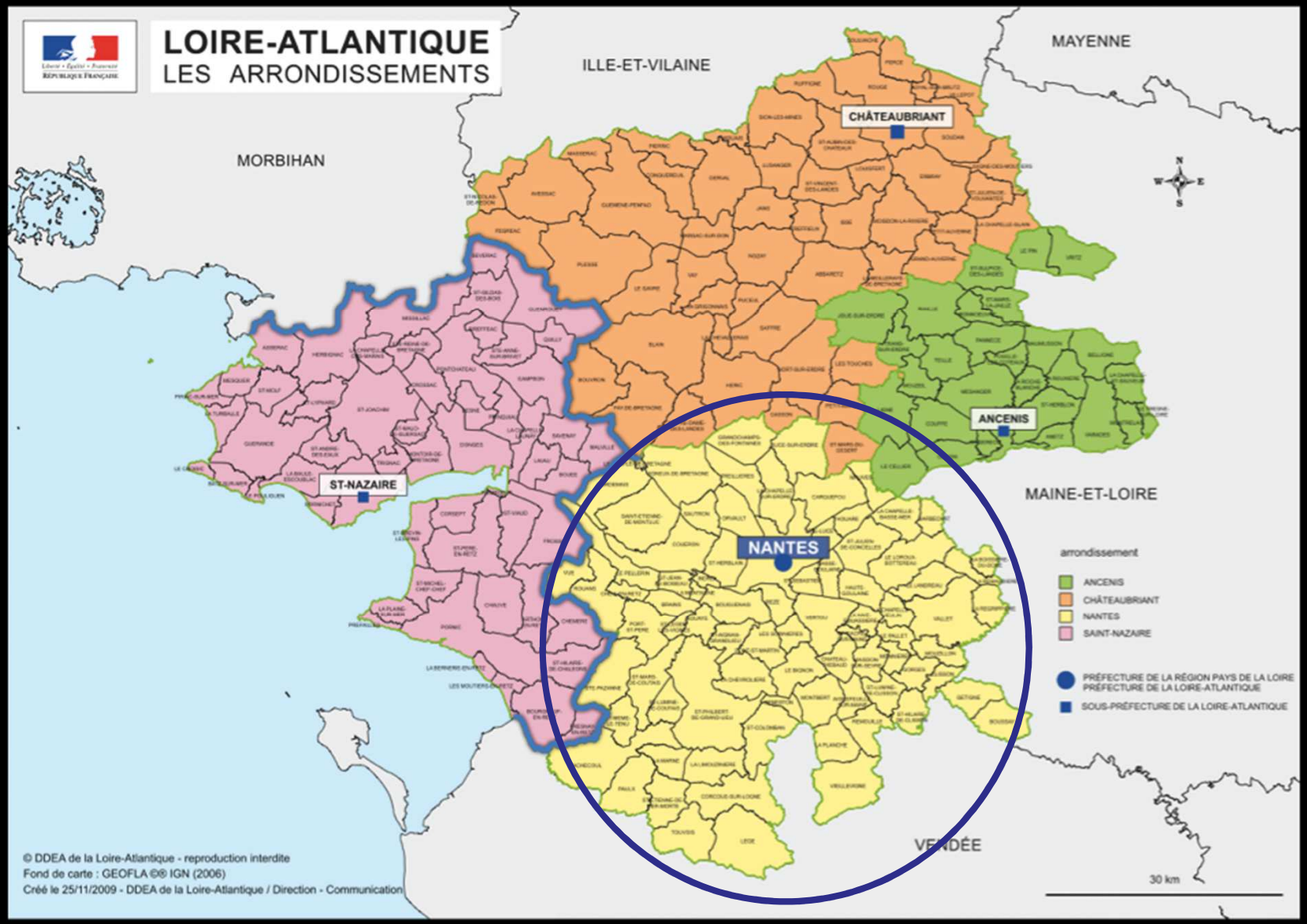
- Unequal level of prepardnessbetweenstakeholders. Low for cities, higher for local administration

- Low level of communication on natural and technologicalhazardsmatters

- Weakgovernance. Not enough intercourse betweenactors. Low budgets dedicated.

Second study (2011) :

The area



Second study (2011) : Course of action

- ✓Upgrading the methodology.
- ✓Collecting information by questionnaire and inqui
- ❑ Information processing (november-december 20
- ❑ Final report redaction (december 2011)

Study is on going !

- Second Study Delivery : January 2012
- Second approach to see « validity » of the concept facing field reality
- Supported by the Ministry of Ecology and Sustainable Development

Haut Comité Français pour la Défense Civile

Protéger l'avenir...

Haut Comité Français pour la Défense Civile

Protéger l'avenir...

Thankyou for your attention

Léo Muller

With the support

Jacques FAYE
responsable du bureau de l'information préventive, de la coordination et de la prospective

Service des risques naturels et hydrauliques
Direction générale de la prévention des risques

10 key points to achieve Resilience

Reduce Gravity

1. Risk and vulnerability assessment
2. Taking care of risks in economic development
3. Insurances policy
4. Prevention & Preparedness
5. Risk education

Reinforcing Response

6. Warning People may be affected
7. Safety of people and goods
8. Business continuity
9. Manage Emergency/Crisis Management (and post)
10. Planning economic resilience

- Risque, aléas (p+i) , Enjeux (I+V)
- Risque mesuré (=qualifié) de 0 à 100 soit (5+5)*(5+5)
- Le risque est classifié (selon une échelle de 1 à 6) qui donne des appréciations sur la gravité
- La gravité se mesure par le produit (p+i)*(I+V)

- Pour réduire la gravité : renforcer la réactivité
- Réactivité = « anticipation » (= vigilance et préparation) & « culture du risque » (= conscience et confiance)
- On a donc réactivité = (v+p) * (c+c), à savoir 5+5 * 5+5
- On a donc 2 indicateurs : GRAVITE et REACTIVITE, données chiffrables.

- Indice de résilience : REACTIVITE/ GRAVITE

- Si indice > 1 alors résilience positive pour le territoire
- Si indice < 1 risque pour le territoire

- Rôle de « ERIS » ?