

Conceptual basis of precautionary logic

According to the **max-min criterion**, when it comes to making a decision under conditions of uncertainty, **choices must be assessed taking into account the worst possible scenario** in terms of possible consequence.

$$v = \max_i \{ \min_j \{ a_{ij} \} \}$$

Preventive intervention ...

... cannot wait for irrefutable scientific proof of harmful effects, but must be prepared on the basis of reliable assessments of the mere possibility/probability of the risk, based on the scientific and technical knowledge 'currently' and 'progressively' available.

The lack of scientific certainty regarding the harmful consequences of certain behaviours or activities cannot justify postponing preventive action appropriate to the magnitude of the possible risks by public decision-makers.

Precautionary principle ...

... makes it possible to adopt, on the basis of scientific knowledge that is still lacking, protective measures that may affect subjective legal positions, albeit in compliance with the proportionality principle understood in its threefold dimension of suitability, necessity and proportionality in the strict sense.

THUS...

- A) **The risk assessment phase** is predominantly (though not exclusively) characterised by its 'scientificity';
- B) **The risk management phase** is equally predominantly (though not exclusively) characterised by its 'politicalness'.

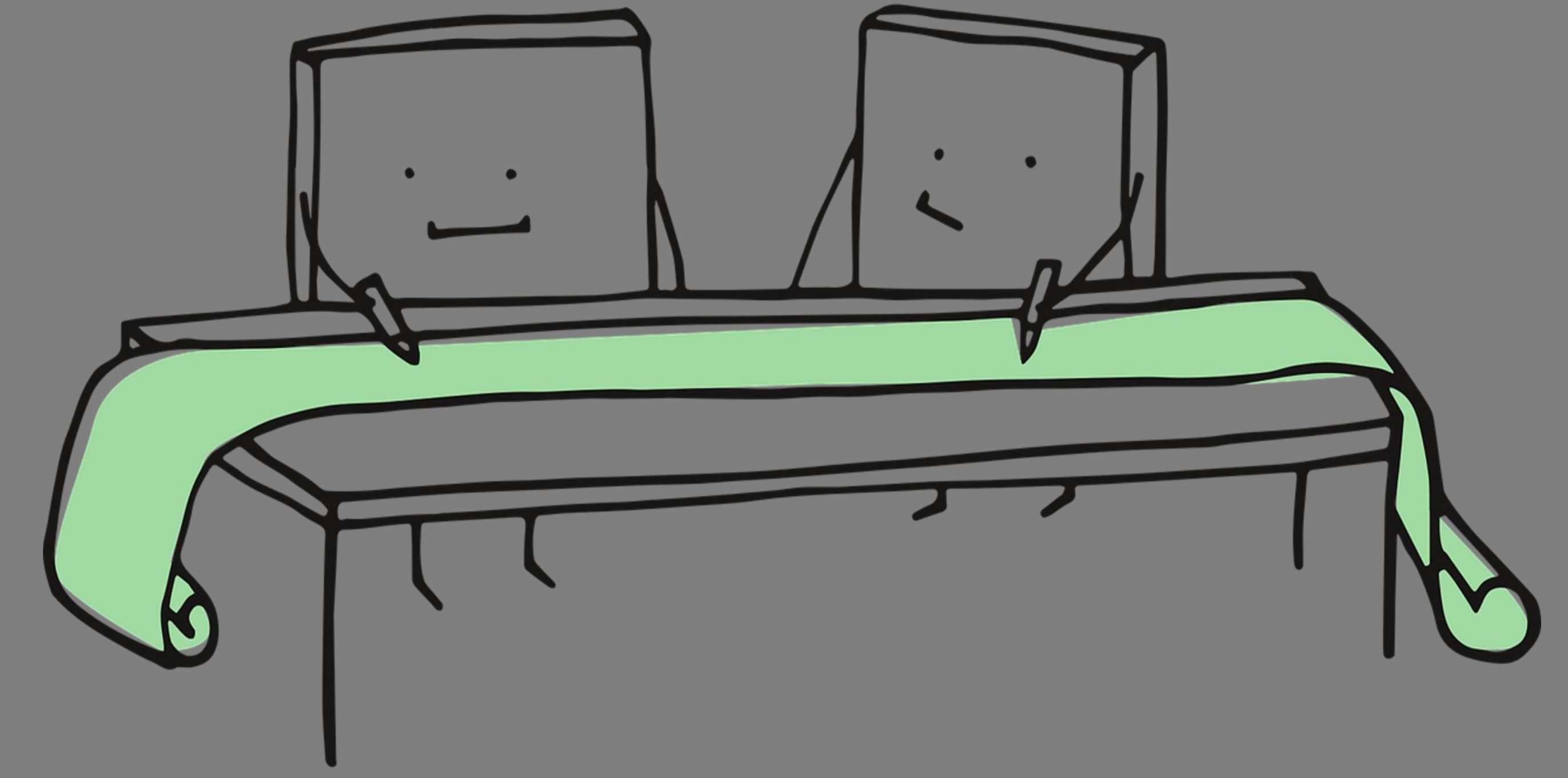


STRUCTURAL (SYSTEM) STRATEGY

- Improving performance and services provided on the basis of a clear ex ante vision.
- Recognition of the administration as a system of interdependencies: unified framework for planning (and resource allocation), monitoring, continuous measurement and evaluation, consequences of evaluation and reporting.

PRECAUTIONARY APPROACH allows even exceptional events to be framed within a context of **ordinariness**.

PLANNING TOOLS REPRESENT THE "RIGHT" PLACE

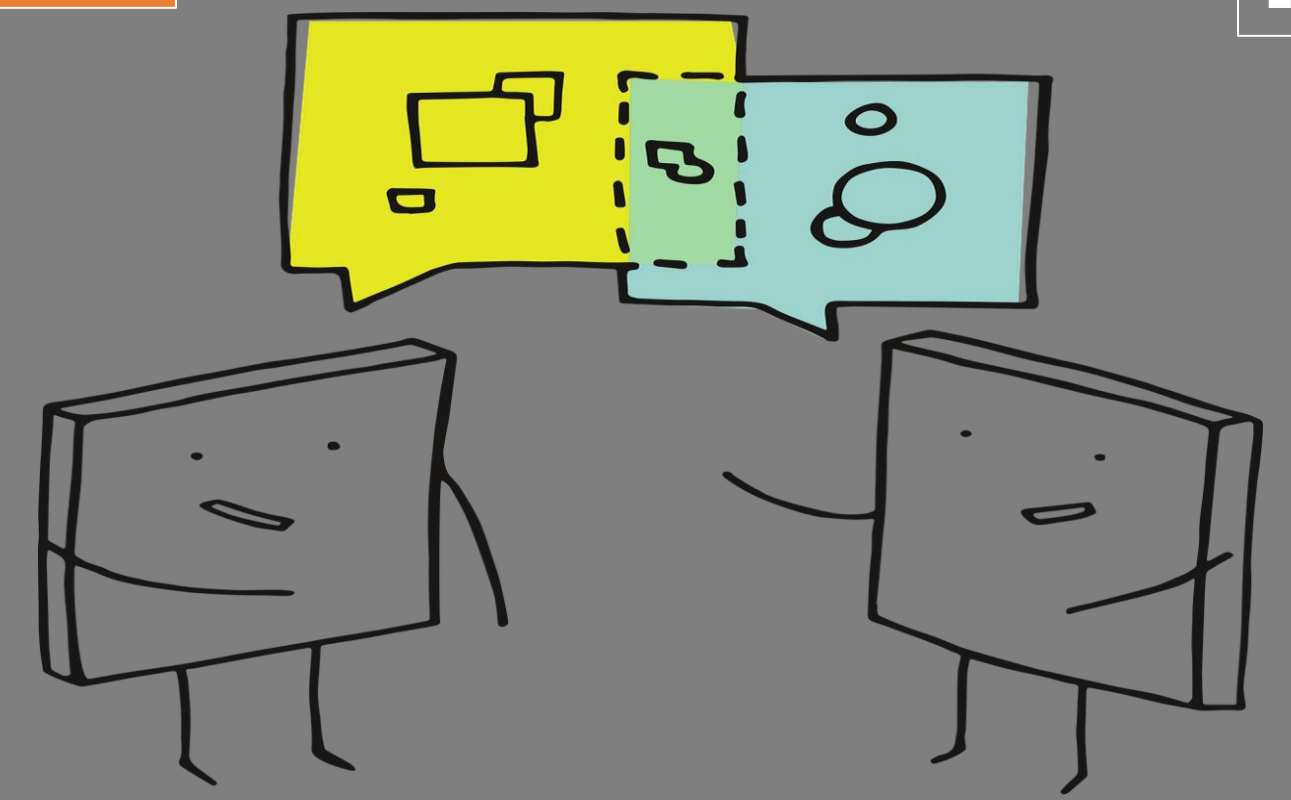


PLANNING TOOLS: tools from which to define strategic interventions for protection and prevention, and not only dialogue but also necessary **contamination** (including with emergency planning) is required.

EFFECT OF DIALOGUE AND CONTAMINATION: assessment of land characteristics, constraints and values to decide how and where to intervene with long-term preventive actions and a precautionary approach.

KEY ELEMENTS OF THE MODEL:

- Continuous adaptation to scientific data
- Flexibility of plans
- Participatory monitoring systems (on-site sentinels)



The application of the precautionary principle concerns **the risk that in any case can be identified following a preliminary objective scientific evaluation.**

Scientific evaluation must be logically and chronologically preceded by the identification of potentially negative effects resulting from a phenomenon and includes, essentially, four components:

- identification of the hazard;
- characterization of the hazard;
- exposure assessment;
- risk characterization.

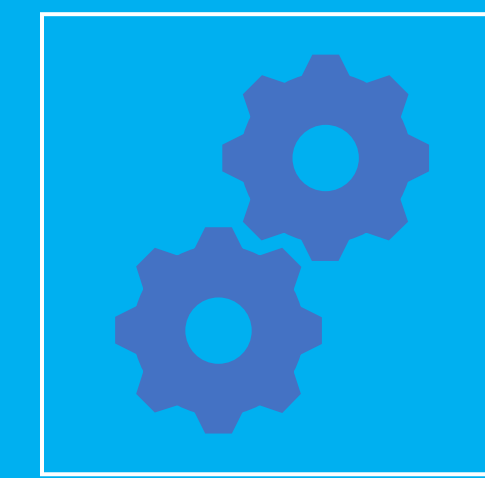
It consists, therefore, of a **scientific process that must necessarily fall to experts in the field.**



The precautionary principle allows for the adoption of timely measures in the presence of risks to people's safety or the integrity of the environment, even in cases where scientific data do not allow for a complete risk assessment, so that, with express reference to the approval of variants to the Basin Plans ' *the precautionary principle requires that, when balancing the interests involved, absolute priority be given to the protection of health and the environment, **EVEN IN CASES WHERE THE HYDROGEOLOGICAL RISK IS ONLY POTENTIAL** (on this subject, see, inter alia, T.A.R. Calabria, Reggio Calabria, section I, 17 November 2016, no. 2217; T.A.R. Sardegna, section II, 2 September 2011, no. 912)* ' (T.A.R. Liguria, section I, 4.4.2022 no. 261)..

The Regional Administrative Court deemed suitable (in application of the precautionary principle) the **DETERMINATION OF THE RISK DERIVING FROM THE GEOLOGICAL REPORT** which, in addition to having carried out an in-depth study, unequivocally concluded that '*It is ultimately believed that this site presents genetic slope criticalities that potentially should have inhibited the creation of a landfill in the past: the local stratigraphy, the tectonic and geotechnical characteristics of the land make this area significantly problematic in terms of stability..*'; therefore, **BASED ON THE PRECAUTIONARY PRINCIPLE, THIS REPORT WAS ONE OF THE COMPONENTS (BUT NOT THE ONLY ONE, AS THERE WAS ALSO SATELLITE DETECTION) OF RISK ASSESSMENT** that legitimately led the proceeding authority to approve the geological reclassification of the slope, as a timely and appropriate measure in relation to the existing risks to the safety of people and the integrity of the environment, even in situations where the available scientific data can only allow a potential risk assessment (see T.A.R. Liguria, sec. I, 4.4.2022 no. 261).





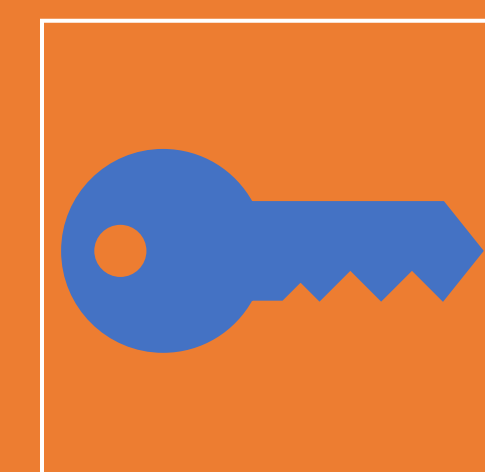
Keywords:



System actions



Construction of a unified territorial and landscape system



Dialogue and necessary contamination with emergency planning (civil defense plans).



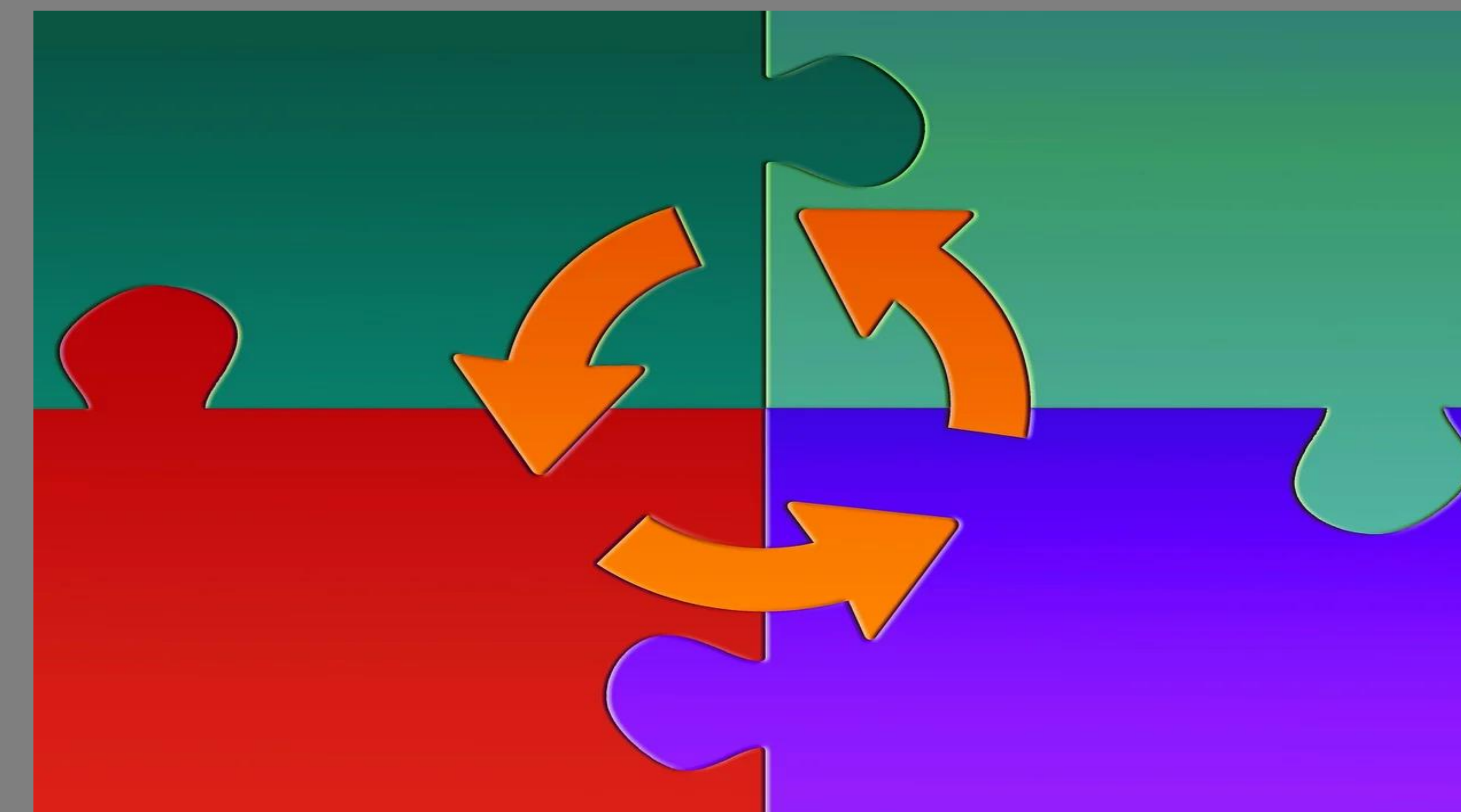


Land planning plays a crucial role in risk management, particularly in:

- **IDENTIFYING** areas vulnerable to natural hazards (floods, landslides, fires, etc.) or man-made hazards (industrial accidents, dangerous infrastructure).
- **DEFINING** land-use and urban planning criteria in relation to risk.
- **PROVIDING** for risk prevention and mitigation measures through urban planning tools and coordination plans.
- **COORDINATING** the various administrative levels (region, province, municipality) for integrated and consistent land and risk management.



Planning tools are also the place where it is possible to enhance, including from a risk mitigation perspective, the link between the precautionary principle and the principle of integration of safeguards.



The relationship between the two principles is fundamental to ensuring sustainable and safe land management.



In land-use and urban planning,

precautionary principle representing «WHY»:
guides the adoption of preventive measures in
the presence of uncertain risks



**principle of integration of safeguards
representing «HOW»:**
ensures that these measures are harmonised
with all other forms of environmental, social and
economic protection, thus guaranteeing
balanced, sustainable and legitimate decisions.

HOW



In Italy: the planning system outlined in the so-called Campi Flegrei Decree could represent an initial idea for a systemic strategy.



Extraordinary Plan for the analysis of the vulnerability of the areas directly affected by the bradyseismic phenomenon



Communication plan for the population



Emergency Response Plan



LAW NO. 40 OF 2025 - FRAMEWORK LAW ON POST-DISASTER RECONSTRUCTION

The law provides for the approval or adaptation by municipalities, as requested by the Special Commissioner for Reconstruction, of urban planning related to reconstruction, as well as the updating of specialist studies, through the preparation of urban planning implementation tools, where necessary, aimed at planning reconstruction, restoration or repair of buildings and primary urbanisation works.

«Municipalities approve or adapt urban planning related to reconstruction and update specialist studies, including seismic microzonation and hydrogeological mapping.»

WHEN?

«If requested by the Special Commissioner due to the nature of the disaster and its consequences.»

HOW?

«By ensuring the broad involvement of the populations concerned.»



CONCLUSION

Applying the principles established by case law to planning, it can be inferred that the prior assessment and characterisation of risk and, therefore, the analysis of vulnerabilities must be an integral part of spatial planning tools, since only in this way can it constitute a constraint for public decision-makers in defining the regulations for different areas of the territory.

In this perspective, the planning system of the so-called Campi Flegrei Decree may represent an initial idea for a system strategy, although it should be implemented with the obligation for public decision-makers to make vulnerability analysis an integral part of territorial planning tools.

The Framework Law on post-disaster reconstruction also moves in this direction, although municipalities should be required to adapt their planning, even if not requested by the Special Commissioner.

