

## **Resilience thinking and urban metabolism in spatial planning: which possible integrations**

Marcello Magoni

### **Abstract**

The concept of resilience has been used for more than a decade in ever-widening intervention fields and it has assumed ever-wider meanings that have made its applications and measurements uncertain and ambiguous. That is why some authors started to talk about “resilience thinking”, to be considered more as a useful idea to draw guidelines and strategies than a rigorous concept. The use of resilience thinking in spatial and urban planning is rather recent and uncommon, while the use of the concept of urban metabolism is much widespread because it is well combined with all those plans that manage resource flows. The integrated use of these two concepts can give an important contribution to the development and implementation of sustainable development strategies. In fact, through the concept of urban metabolism, in which concepts and tools are mostly geared to the integrated and sustainable management of the resources affecting a territorial system, it is possible to define the objectives and intervention strategies for sustainable spatial development, while through resilience thinking, in which concepts and tools are mostly oriented to the management of complex systems under uncertainty and to the elaboration of bottom-up solutions, it is possible to integrate those strategies with suitable solutions in order to enhance the system’s adaptation capabilities to risk situations and those of uncertainty. The paper deals with the use of resilience thinking in spatial planning, with the integration between resilience thinking and urban metabolism and gives details of the features of this integration by analysing a strategic spatial project of a river.