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The ecological transition needs new governance models

For Italy and Europe to overcome the current crisis, organizational innovations will be as important as technological ones.

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Credit: Tom Werner/ Stone/ Getty Images.

Policy-makers in Italy and worldwide are facing unprecedented challenges. COVID-19 has forced them to put health security at the centre of their agenda, adding to existing crisis such as climate change. The war in Ukraine has also stressed the need to tackle energy security once and for all.

As a response, European strategies have been put in place to induce an ecological and socio-economic transition towards climate neutrality, and to ensure citizens' wellbeing and security. Complementary to other funding, 800 b€ of the [Next Generation EU](#) plan have been allocated to transform society and the economy, and to create opportunities and jobs. The intermediate and final targets for this strategy have been defined accordingly to the commitments of other relevant actors at the global level, and 2050 still seems a feasible deadline to reach the ambitious goal of carbon neutrality, despite the increasing difficulties generated by the Ukrainian war. The Italian "[Piano Nazionale per la Ripresa e la Resilienza](#)" (PNRR), based on the Next Generation EU plan, accounts for 191,5 b€, and includes 63 reforms and 151

investments to be realized by 2026. More than 30% of the total value is allocated to the ecological transition, and an ad hoc Ministry has been created for its realization.

In order to make sure that this plan reaches its goals, the main problem to solve is not about money, but about vision and strategy. A real transformation requires addressing several key issues, including renewed skills, systemic approaches to address the complexity of the actions, and a new governance. Here we focus on governance, and on the role of decentralization in it. Governance concerns the organizational models that are used to structure the networks of people, their behavior, the distribution and use of territorial resources and services¹. We know from decades of research that decentralized organizational models are more appropriate in dynamic and complex environments such as the current transition. In fact, hierarchical and automatized organizations require a full control of the procedures and are vulnerable when a part of the system lacks its functionality.

Humans have developed different organizational structures to tackle complex and dynamical systems². First attempts at decentralization were adopted in military campaigns, e.g. the Blitzkrieg in WWII or the Six-Day War in the 60s, when small groups of soldiers acted in a flexible and creative way to achieve the objectives identified by the commanders. When dealing with dynamic contexts, information, synchronization, autonomy, training and synergy are the crucial aspects to focus on, much more than a jungle of rules³. Many companies have adopted highly successful decentralized organizational structures⁴: for instance, a company for distribution of goods in US (Whole Foods Market) allowed any management team of its nodes to adopt whatever action aiming at increasing efficiency and productivity. Whatever innovation was introduced by a single node, provided not putting at risk the brand, received an incentive. Other nodes introducing the same innovation received a lower incentive. This mechanism promoted a proactive internal competition, making the entire company grow.

The need to adopt a revised approach to governance, including management of people, natural and financial resources, has also been proven shown in many different initiatives involving smart energy communities. For example, transforming each consumer in a prosumer (i.e. both producer and consumer) of their energy can reverse the centralized energy supply scheme, and make the local communities - as well as the country - less exposed to geopolitical crises. This bottom-up strategy, supported by a local energy network assuring its optimal distribution and use, can speed-up the transition towards a mix of renewable energies. This reversed approach - currently in use in cellular networks - can be applied to the energy sector as well as to other sectors such as water distribution, smart food grids, AI networks and personalized health systems contributing to maximize the resources while reducing losses, pollution and storage capacity needs.

We call for Italy's ecologic transition, and in general for the current global effort to build a more resilient society, to consider the crucial importance of governance structures in this transformation, and to promote flexible and scalable governance solutions. Huge and centralized infrastructures must be replaced by small-scale adaptive configurations. Each territory will have to face its own challenges, keeping in mind the final goal but also adopting tools and paths that take into account local abilities, resources, cultures, in a continuous adaptation between feasibility and impact.

Prediction and control should no longer be the central aspects and should be replaced by resilience. Hierarchy should be replaced by diversity and adaptation. Decentralization, supported by digitalization, will ultimately promote the proliferation of ideas, innovative solutions and self-organized sub-systems, while reducing system failures

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