

OPINION

Investing in resilience and making investments resilient

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The recently published 6th Assessment Report of the IPCC Working Group II further confirms rapid and widespread impacts of climate change on human wellbeing and the natural systems around the world which were well documented in the previous climate assessments [1]. While the world needs to implement ambitious greenhouse gas emission reductions to avoid catastrophic impacts, the effects of climate change are felt acutely today and the poor and the most vulnerable people and regions are disproportionately affected [2, 3]. In this context, scaling up climate adaptation and resilience actions and finance across all countries and at all scales becomes critical to protect populations and accelerate poverty reduction.

Such a scale up requires targeted interventions purely focused on resilience, such as flood management infrastructure or efficient irrigation systems. But targeted investments cannot be successful if other investments and development trends are continuously increasing risks. No level of investment in flood defense can contain or reduce economic losses from floods if urbanization in flood zones continues at current pace [4]. Progress on resilience requires more than specific investments. It requires that *all* the decisions and investments take current and future climate risks into consideration, so they are designed to be resilient in the face of today's climate risks and future disaster risks.

Making all investments more resilient and investing in adaptation and resilience measures have been found to yield significant economic, social and environmental benefits. Take infrastructure investment as an example. Ensuring that all new infrastructure assets include resilience best practice would incur a small incremental cost (3% of total investment needs) while yielding large benefits: an average of \$4 in benefit for every \$1 invested, with a total of \$4.2 trillion in benefits over the lifetime of new infrastructure [5]. The large, positive economic benefits of resilience measures are similarly demonstrated in early warning systems, climate-smart agriculture, water resources management, and nature-based solutions [6]. With such a relatively small additional cost, adaptation and resilience is often about spending better, not about spending more.

Despite the economic rationale and the potential benefits, resilience investments and decisions often do not take place. That's because individuals and households face barriers such as the lack of risk information, behavioral bias toward status quo, and financial constraints to invest in resilience. In particular, poor households often have to make difficult trade-offs between food security, jobs, education, and investing in adaptation even though disaster shocks have long-term impacts on human capital accumulation and poverty reduction [2]. Similarly, firms also face information asymmetries, market failures, financial constraints, short decision horizon, and inability to fully capture the value of resilience in cash flow [7]. Governments also face challenges with coordination failures, conflicting interests and policy priorities, and often underinvest in adaptation and resilience capacity and underprice climate hazards in policies, regulations and fiscal planning [8, 9].



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Addressing barriers for climate adaptation requires a whole-of-society approach, an approach we describe in our recent “Adaptation Principles” report with an indicator-based scoring system which can be used to identify gaps and priority actions [10]. Countries need to design good policies that enable every actor to take climate risks into account in every decision, so that people and businesses can invest in their own resilience. Governments need to incorporate climate risk considerations in planning processes and investments, provide climate risk information and make it publicly accessible, allocate budget and resources for adaptation and resilience activities, and establish institution and governance structure to protect the poorest and the most vulnerable and build their resilience, including social protection and direct financial support.

The key for mainstreaming climate risk management is to make it simple and accessible as public and private investors and communities often face limitations with resource, time and expertise. Also, it is most critical (and cost-effective) to incorporate climate risk considerations *in the earliest stages* of project development and design. When risks and resilience are considered only at the later stages, the smartest and cheapest options to make a project more resilient are often not available anymore. For instance, at a later stage, an infrastructure asset localization and technology tend to be locked in, and the only option for resilience is often to strengthen or protect the asset, which is often very expensive.

Climate risk screening and resilience metrics are increasingly being developed to identify climate risks and evaluate and reward resilience in public and private investments. One example is the Resilience Rating System (RRS) developed by the World Bank Group with the aim to guide investment decisions and improve climate resilience in project design and outcomes [11]. The RRS provides guidance and specific criteria to assess resilience along two complementary dimensions of project design: (1) the *resilience of the project* rates the confidence that expected investment outcomes will be achieved in spite of climate and disaster risks, based on whether a project has considered these risks in its design, incorporated adaptation measures, and demonstrated economic viability considering climate risk uncertainty, and (2) the *resilience through the project* rates a project’s contribution to the resilience of beneficiaries, communities and systems, based on the nature of the outcomes (e.g., a new social protection will help a community deal with shocks; a new road will help them evacuate before a storm; a new building code that ensures buildings can withstand higher winds from hurricanes).

Essential to the success of these ratings and labels is their flexibility and contribution to good development. The right level of risk is a choice that reflects the risk tolerance of the stakeholders, the expected benefits of a project or investment, and the context in which an investment takes place. Inflexible standards for risk and resilience that are insensitive to the diversity of contexts could easily discourage investments in the poorest places and toward the most exposed communities, exactly those who need investments the most. To prevent such negative implications, the goal of climate risk analysis should not be to impose a single “acceptable” level of risk across all investments, but to make sure decisions are informed by transparent and rigorous information on future climate risks, to make sure projects deliver benefits for all stakeholders.

With a rating from C to A+ in each dimension, the RRS offers a way to “label” projects and serve as a guide to reflect the extent to which adaptation and resilience considerations have been integrated into the design of projects and investments, to increase the attractiveness of projects that have been well designed, and guide investors and decision-makers so that they can prioritize projects that are resilient and contribute to resilience building. These ratings can also improve tracking of progress on adaptation and resilience, including the quality of adaptation investments, as well as create incentives to engage in more and better adaptation.

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