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Building rural resilience to natural disasters in Latin America and the Caribbean through smart villages: policy brief

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The resilience of rural communities to natural disasters and other shocks is an important issue for rural villages; hard-won development gains can all too readily be lost through natural disasters such as earthquakes, hurricanes, droughts, and floods. This is particular so for countries in Latin America and the Caribbean which are at risk from a wide range of natural events.

Leading experts from across the region were therefore brought together for a workshop in Quito, Ecuador on 30 January 2017 to discuss the challenges and opportunities of building the resilience to natural disasters of villages in Latin America and the Caribbean. A particular concern was the contribution of energy services to the resilience and development of rural communities, and the consequent establishment of smart villages which realise the benefits inherent in energy access and connectivity in the form of productive enterprises and key services such as healthcare, education, and clean water. This policy brief summarises key conclusions and recommendations arising from the workshop.

People living in rural communities and in poverty often return after natural disasters to rebuild in risk-prone areas as they have no realistic alternatives: “you live where you can, not where you want to”. Short-term imperatives like having enough to eat take precedence over medium- and long-term considerations of safety. Also, urbanisation may increase the number of people living in vulnerable areas; for example, coastal cities subject to hurricanes and tsunamis, and cities located near to faults at risk from earthquakes. Natural disasters result in 26 million people around the world each year stepping back into poverty.

The resilience and health of human communities and of the ecosystems in which they live are closely interdependent; risk assessments need to consider both together. Similarly, there are strong interdependencies between cities and villages in respect of resilience, not least because of the movement of people between them.

Recommendations for policy makers, development organisations and other stakeholders concerned with resilience to natural disasters are as follows:

1. Countries should establish resilience strategies based on improved knowledge of the risks and identification of the most vulnerable communities. Such strategies should be developed and implemented in a way that integrates the efforts of all relevant government ministries. In respect of the physical infrastructure, they should establish building regulations and ensure they are implemented, and put in place prevention and recovery actions. International initiatives such as the Sendai Framework are helpful in establishing objectives and definitions, and supporting international collaboration.
2. Mechanisms should be put in place to learn from the experience of natural disasters and to revise policy frameworks and implementing mechanisms accordingly. Such learning is also key at the community level; for example, in Central America rural communities that had come together to rebuild after civil wars were better able to recover from subsequent hurricanes. Lessons should also be learned from traditional technologies and approaches. As an example, the systems of agricultural terracing used for many centuries by the Incas were better able to save water and avoid erosion (and hence increase resilience to floods and droughts) than farming techniques imported from Europe.

3. Communities should be directly involved in resilience initiatives through an open dialogue that respects cultural beliefs and customs. An important outcome is that the community realises the importance of risk management measures. If they do not, such measures may be rejected. Public-private partnerships can provide an effective mechanism for interventions; the community needs to be closely involved in an oversight role.

4. Communities that come together to rebuild after natural disasters increase their social ties and capacities to enhance resilience. They tend to have a strong sense of ownership and independence, which are valuable in meeting the challenges of subsequent natural disasters. Government interventions to rebuild after disasters should bear this in mind, ensuring that the local community is closely involved and has a stake. All external interventions should address the challenge of how their benefits may be sustained in the longer term.

5. Risk assessment of electrical installations should be undertaken at the planning stage, and mitigation measures built-in as appropriate. Efforts are currently underway to define minimum standards for the resilience of critical infrastructures. After a natural disaster, risk assessments of the electricity infrastructure should be undertaken rather than just replacing existing damaged infrastructure.

6. While one view suggests that provision of energy services to villages can increase their vulnerability due to their increased dependence on infrastructure that might be destroyed in a natural disaster, small, decentralised electricity systems are flexible and easy to repair and reinstall after disasters. Such off-grid systems should therefore be considered when planning a country's electricity system in the context of the risk of natural disasters.

7. Countries should set up a national fund which can be drawn on quickly in the event of a natural disaster. This is preferable to drawing on international loans which can result in high levels of national debt in the longer term. A country's financial planning should recognise that the losses from natural disasters are often under-estimated, ignoring for example longer-term losses to trade or tourism.

Notes

We aim to provide policymakers, donors, and development agencies concerned with rural energy access with new insights on the real barriers to energy access in villages in developing countries—technological, financial and political—and how they can be overcome. We have chosen to focus on remote off-grid villages, where local solutions (home- or institution-based systems and mini-grids) are both more realistic and cheaper than national grid extension. Our concern is to ensure that energy access results in development and the creation of 'smart villages' in which many of the benefits of life in modern societies are available to rural communities.

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